



# HMIs and industrial PCs

Product overview

# Selection guide for HMIs

Whether in the central control room, in the production area or directly on the machine – efficient automation requires the right visualization. And visualization requirements determine which HMI device is the right one to choose.

Follow these three steps to find the optimum solution for your application.

**1**

## **Select visualization by means of**

- User interface
- Functionality
- System coupling

**2**

## **Assess the scope of functions needed**

- Basic
- Standard
- High-end

**3**

## **Select devices**

- HMIs for WebVisit
- HMIs for Microbrowser
- HMIs for Visu+
- Panel PC

## Step 1: Visualization as a basis for selecting an HMI

The requirements for user interface, functionality, and system coupling determine which visualization system is appropriate and which particular HMI type should be selected.

- The user interface aspect refers to the graphical options for designing an interface

- The functionality aspect indicates the software's operation and monitoring functions
- The system coupling aspect refers to communication and integration in control systems

| Software                           | PC Worx          | WebVisit              | SpiderControl™       | Visu+ Express                       | Visu+                             |
|------------------------------------|------------------|-----------------------|----------------------|-------------------------------------|-----------------------------------|
| <b>User interface</b>              |                  |                       |                      |                                     |                                   |
| <b>Display of operating data</b>   |                  |                       |                      |                                     |                                   |
| • Alphanumeric                     | Yes              | Yes                   | Yes                  | Yes                                 | Yes                               |
| • Simple graphic display           | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| • Graphic-intensive display        | –                | –                     | –                    | Yes                                 | Yes                               |
| • Dundas Gauges                    | –                | –                     | –                    | –                                   | Yes                               |
| Color spectrum                     | 2 bpp (4 colors) | 8 bpp (256 colors)    |                      | 16 bpp (65K colors)                 | Unlimited (depending on hardware) |
| <b>Supported image formats</b>     |                  |                       |                      |                                     |                                   |
| • GIF/JPG/PNG/SVG                  | –/–/–/–          | Yes/yes/yes/yes       | Yes/yes/yes/–        | Yes/yes/yes/–                       | Yes/yes/yes/–                     |
| • BMP/TIF/WMF/VPF                  | –/–/–/–          | –/–/–/–               | –/–/–/–              | Yes/yes/–/–                         | Yes/yes/yes/–                     |
| <b>Animation</b>                   |                  |                       |                      |                                     |                                   |
| • Simple object animation          | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| • Polygon filling/rotation         | –/–              | –/–                   | –/–                  | –/–                                 | Yes/yes                           |
| <b>Functionality</b>               |                  |                       |                      |                                     |                                   |
| <b>Target value input</b>          |                  |                       |                      |                                     |                                   |
| • Numeric/alphanumeric             | Yes/–            | Yes/yes               | Yes/yes              | Yes/yes                             | Yes/yes                           |
| <b>Alarm management</b>            |                  |                       |                      |                                     |                                   |
| • Visual notification              | Yes              | Yes                   | Yes                  | Yes                                 | Yes                               |
| • Audible notification             | –                | –                     | –                    | Yes                                 | Yes                               |
| • Notification via e-mail          | –                | –                     | –                    | Yes                                 | Yes                               |
| • Notification via text message    | –                | –                     | –                    | –                                   | Yes                               |
| User management                    | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| <b>Trend display</b>               |                  |                       |                      |                                     |                                   |
| • Online (dynamic)                 | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| • Offline (plus historical data)   | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| Online language selection          | –                | Yes                   | Yes                  | Yes                                 | Yes                               |
| <b>Archiving (data logger)</b>     |                  |                       |                      |                                     |                                   |
| • Local                            | –                | –                     | –                    | Yes                                 | Yes                               |
| • External                         | –                | –                     | –                    | –                                   | Yes                               |
| Report generation and printing     | –                | –                     | –                    | Yes                                 | Yes                               |
| Recipe management                  | –                | –                     | –                    | Yes                                 | Yes                               |
| VBA scripts and IL logic           | –                | –                     | –                    | Yes                                 | Yes                               |
| Time switch                        | –                | –                     | –                    | Yes                                 | Yes                               |
| Access via standard browser        | –                | Yes (PLC-dependent)   | Yes (PLC-dependent)  | Max. 2                              | Max. 100 (license-d.)             |
| <b>System coupling</b>             |                  |                       |                      |                                     |                                   |
| Connection to Phoenix Contact PLC  | Yes (http)       | Yes (http)            | Yes (http)           | Yes (OPC, Modbus)                   |                                   |
| Connection to third-party systems  | –                | –                     | Yes (http)           | Yes (all established manufacturers) |                                   |
| <b>Compatible devices</b>          |                  |                       |                      |                                     |                                   |
| HMI (including a suitable runtime) | TD1030T          | HMI for WebVisit      | HMI for Microbrowser | HMI for Visu+                       |                                   |
| Industrial PC                      | –                | Panel PC with browser | –                    | Panel PC (plus runtime)             |                                   |

## Step 2: Assess the resource requirements based on the scope of the application

The user-friendliness of a device depends on the application programming. By contrast, the response and display refresh time (operating efficiency) is primarily based on the complexity of the visualization application. The operating efficiency is influenced by various factors. For example, a poor CPU performance or a low memory capacity have a negative influence on the response and display refresh time.

The following factors significantly influence the operating efficiency of an HMI. Please take these factors into consideration when selecting the HMI performance class.

| Software                                           | Recommendation                  |                                   |                                  | Max.<br>HMI incl. RT | Max.<br>PC plus RT   |
|----------------------------------------------------|---------------------------------|-----------------------------------|----------------------------------|----------------------|----------------------|
|                                                    | Basic                           | Standard                          | High-end                         |                      |                      |
| <b>Resolution of the display</b>                   |                                 |                                   |                                  |                      |                      |
| Standard format (4:3)                              | With VGA<br>(640 x 480 pixels)  | With SVGA<br>(800 x 600 pixels)   | With XGA<br>(1024 x 768 pixels)  | Unlimited            | Unlimited            |
| Widescreen format (16:9)                           | With WVGA<br>(800 x 480 pixels) | With WSVGA<br>(1024 x 600 pixels) | With WXGA<br>(1366 x 768 pixels) | Unlimited            | Unlimited            |
| <b>Memory required for visualization</b>           |                                 |                                   |                                  |                      |                      |
| Maximum number of pages                            | 16                              | 64                                | 256                              | 2048                 | 8192                 |
| Maximum number of graphic elements                 | 32                              | 128                               | 512                              | 1024                 | 8192                 |
| Maximum number of objects per page                 | —                               | 32                                | 64                               | 64                   | 256                  |
| Maximum number of animated objects per page        | 1 per page                      | 5 per page                        | 5 per page                       | Unlimited            | Unlimited            |
| <b>Variables</b>                                   |                                 |                                   |                                  |                      |                      |
| Maximum number of variables (tags)                 | 256                             | 1024                              | 2048                             | 4096                 | 128000               |
| Polling rate                                       | 1000 ms                         | 500 ms                            | 250 ms                           | Unlimited            | Unlimited            |
| <b>System coupling and communication</b>           |                                 |                                   |                                  |                      |                      |
| Maximum number of controllers                      | 1                               | 5                                 | 10                               | Unlimited            | Unlimited            |
| Max. number of drivers in parallel                 | 1                               | 1 plus OPC                        | 2 plus OPC                       | 2 plus OPC           | 2 plus OPC           |
| Maximum number of controllers for each driver      | 1                               | 2                                 | 5                                | 128                  | 128                  |
| <b>VBA scripts and IL logic (instruction list)</b> |                                 |                                   |                                  |                      |                      |
| Maximum number of scripts                          | 4                               | 8                                 | 16                               | 64                   | 4096                 |
| Can be executed simultaneously                     | 1                               | 2                                 | 4                                | 4                    | 128                  |
| <b>Number and frequency of logs (data logging)</b> |                                 |                                   |                                  |                      |                      |
| Maximum number of pins                             | 4                               | 8                                 | 16                               | 16                   | 64                   |
| Maximum number of data loggers                     | 0                               | 16                                | 32                               | 32                   | 512                  |
| Scanning time                                      | 1000 ms                         | 1000 ms                           | 1000 ms                          | 1000 ms              | 100 ms               |
| Retention period                                   | Dependent on memory space       |                                   |                                  | 365 days             | 9999 days            |
| <b>Alarm management</b>                            |                                 |                                   |                                  |                      |                      |
| Maximum number of alarms                           | 128                             | 512                               | 1024                             | 4096                 | 32000                |
| <b>User management</b>                             |                                 |                                   |                                  |                      |                      |
| Maximum number of users                            | 16                              | 512                               | 1024                             | 1024                 | 8192                 |
| Maximum number of user groups                      | 4                               | 16                                | 64                               | 64                   | 512                  |
| <b>Report generation and printing</b>              |                                 |                                   |                                  |                      |                      |
| Textual reporting                                  | —                               | Yes                               | Yes                              | Yes                  | Yes                  |
| Graphical reporting                                | —                               | —                                 | Yes                              | Yes                  | Yes                  |
| <b>Events</b>                                      |                                 |                                   |                                  |                      |                      |
| Maximum number of event objects                    | 16                              | 64                                | 128                              | 128                  | 512                  |
| <b>Recipe management</b>                           |                                 |                                   |                                  |                      |                      |
| Max. number of recipes per project                 | 4                               | 8                                 | 16                               | 16                   | 512                  |
| Max. number of columns per recipe                  | 8                               | 32                                | 128 (90 with IMDB)               | 128 (90 with IMDB)   | 1024 (127 with IMDB) |
| <b>Language selection</b>                          |                                 |                                   |                                  |                      |                      |
| Maximum number of languages                        | 4                               | 16                                | 32                               | 32                   | 128                  |
| <b>Access via the web browser</b>                  |                                 |                                   |                                  |                      |                      |
| Max. number of concurrent accesses                 | —                               | 1                                 | 2                                | 2                    | 64                   |

### Step 3: Select the right device

Based on their features (CPU capacity, display resolution, and memory capacity) as well as their suitability for different applications, the individual device families can be divided into three classes: basic,

standard, and high-end applications. Select the right operator panel according to your requirements.

|                       | Basic                | Standard      | High-end                          |
|-----------------------|----------------------|---------------|-----------------------------------|
| <b>Visu+</b>          |                      | HMI for Visu+ | Panel PC with appropriate runtime |
| <b>SpiderControl™</b> | HMI for Microbrowser |               | Panel PC with standard browser    |
| <b>WebVisit</b>       | HMI for WebVisit     |               |                                   |
| <b>PC Worx</b>        | TD 1030T             |               |                                   |

| Product range                                 |             |       | HMI for PC Worx | HMI for WebVisit | HMI for Microbrowser | HMI for Visu+ |
|-----------------------------------------------|-------------|-------|-----------------|------------------|----------------------|---------------|
| <b>Display size (4:3)</b>                     |             |       |                 |                  |                      |               |
| 2.8"                                          | 320 x 240   | QVGA  | ✓               | ✓                | –                    | –             |
| 3.5"                                          | 320 x 240   | QVGA  | –               | ✓                | (✓)                  | ✓             |
| 5.7"                                          | 320 x 240   | QVGA  | –               | ✓                | (✓)                  | ✓             |
| 5.7"                                          | 640 x 480   | VGA   | –               | –                | ✓                    | ✓             |
| 10.5"                                         | 800 x 600   | SVGA  | –               | ✓                | ✓                    | ✓             |
| 12.1"                                         | 800 x 600   | SVGA  | –               | –                | ✓                    | ✓             |
| 15.1"                                         | 1024 x 769  | XGA   | –               | ✓                | ✓                    | ✓             |
| 17"                                           | 1280 x 1024 | SXGA  | –               | –                | (✓)                  | ✓             |
| <b>Display size (16:9)</b>                    |             |       |                 |                  |                      |               |
| 4.3"                                          | 480 x 272   | WQVGA | –               | –                | ✓                    | ✓             |
| 7"                                            | 800 x 480   | WVGA  | –               | ✓                | ✓                    | ✓             |
| 9"                                            | 800 x 480   | WVGA  | –               | ✓                | ✓                    | ✓             |
| 12"                                           | 1280 x 800  | WXGA  | –               | –                | ✓                    | ✓             |
| 15.4"                                         | 1280 x 800  | WXGA  | –               | –                | ✓                    | ✓             |
| 15.6"                                         | 1366 x 768  | WXGA  | –               | –                | (✓)                  | ✓             |
| 18.5"                                         | 1366 x 768  | WXGA  | –               | –                | (✓)                  | ✓             |
| <b>Touch technology</b>                       |             |       |                 |                  |                      |               |
| Analog resistive polyester touchscreen        |             |       | ✓               | ✓                | ✓                    | ✓             |
| Analog resistive glass-film-glass touchscreen |             |       | –               | ✓                | (✓)                  | ✓             |
| Projective capacitive touchscreen (PCAP)      |             |       | –               | –                | (✓)                  | ✓             |
| <b>Interfaces</b>                             |             |       |                 |                  |                      |               |
| Ethernet                                      |             |       | ✓               | ✓                | ✓                    | ✓             |
| Dual CAN                                      |             |       | –               | –                | –                    | (✓)           |
| RS-232                                        |             |       | –               | –                | –                    | ✓             |
| RS-485                                        |             |       | –               | –                | –                    | (✓)           |

(✓) = project-specific possibility

## HMI's for basic applications

### Touch panels with polyester touch technology

Web panels are inexpensive operator panels for basic operation and monitoring tasks. Your advantages:

- Tailor-made for class 100 and class 1000 modular small-scale controllers
- Fast startup, thanks to Plug and Play
- TD1030T: Alphanumeric four-color display
- Web panel: full graphic color display for clear presentation

- Quick and user-friendly presentation of your control variables using the PC Worx EXPRESS and WebVisit (EXPRESS) software tools
- Easy device replacement, as the project is saved on the PLC
- Display formats in 4:3 or 16:9

|                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                              |  |  |  |  |  |
| Designation                                             | WP04T                                                                             | WP06T                                                                             | WP07T/WS                                                                           | WP09T/WS                                                                            | WP10T                                                                               |
| Display                                                 | 8.89 cm (3.5")                                                                    | 14.48 cm (5.7")                                                                   | 17.78 cm (7")                                                                      | 22.86 cm (9")                                                                       | 26.42 cm (10.4")                                                                    |
| Colors                                                  | 65,536                                                                            | 65,536                                                                            | 65,536                                                                             | 65,536                                                                              | 65,536                                                                              |
| Resolution (W x H in pixels)                            | 320 x 240 QVGA                                                                    | 320 x 240 QVGA                                                                    | 800 x 480 WVGA                                                                     | 800 x 480 WVGA                                                                      | 800 x 600 SVGA                                                                      |
| Brightness (in cd/m²)                                   | 350                                                                               | 400                                                                               | 350                                                                                | 400                                                                                 | 330                                                                                 |
| Reading angle (vertical/horizontal)                     | 150°/130°                                                                         | 135°/150°                                                                         | 130°/140°                                                                          | 170°/170°                                                                           | 110°/340°                                                                           |
| Backlight (MTTF in h)                                   | 40000                                                                             | 40000                                                                             | 40000                                                                              | 70000                                                                               | 50000                                                                               |
| Touch technology                                        | Polyester, analog resistive                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Processor                                               | ARM9 CPU, 200 MHz                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Temperature range                                       | Operation: -0°C ... +50°C, storage: -25°C ... +70°C                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Degree of protection (front/back)                       | IP65/IP20                                                                         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Front panel dimensions (W x H x D in mm)                | 120 x 90 x 5                                                                      | 168 x 126 x 5                                                                     | 203 x 147 x 5                                                                      | 260 x 172 x 5                                                                       | 295 x 220 x 5                                                                       |
| Installation depth (in mm) including fieldbus interface | 35<br>—                                                                           | 42<br>—                                                                           | 54<br>—                                                                            | 54<br>—                                                                             | 55<br>—                                                                             |
| Mounting cutout (W x H in mm)                           | 112 x 82                                                                          | 160 x 118                                                                         | 195 x 139                                                                          | 252 x 164                                                                           | 287 x 212                                                                           |
| Weight (in kg)                                          | 0.43                                                                              | 0.69                                                                              | 1                                                                                  | 1.3                                                                                 | 1.8                                                                                 |
| Typical power consumption                               | 7.2 W at 24 V                                                                     | 9.6 W at 24 V                                                                     | 12 W at 24 V                                                                       | 14.4 W at 24 V                                                                      | 14.4 W at 24 V                                                                      |
| Approvals                                               | UL/cUL                                                                            |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|                                                         | General technical data                                                            |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Display type                                            | TFT/LED (white)                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Memory                                                  | 32 MB Flash, 64 MB SDRAM, 512 KB SRAM with battery backup                         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Interfaces                                              | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0                                        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Operating system                                        | MS Windows® CE 5.0                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Relative humidity                                       | For operation and storage: 20 % to 85 %, non-condensing                           |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Installation type                                       | Portrait/landscape                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Mounting type                                           | Installation in front panel                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Power supply                                            | 24 V DC ±20 %                                                                     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |

|  |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>WP15T</b>                                                                      | <b>TD1030T</b>                                                                    |
| 38.10 cm (15")                                                                    | 7.1 cm (2.8")                                                                     |
| 65,536                                                                            | 4                                                                                 |
| 1024 x 768 XGA                                                                    | 320 x 240 QVGA                                                                    |
| 480                                                                               | 280                                                                               |
| 135°/160°                                                                         | 150°/130°                                                                         |
| 50000                                                                             | 40000                                                                             |
| Polyester, analog resistive                                                       |                                                                                   |
| ARM9 CPU, 200 MHz                                                                 | Cortex™-M3 120 MHz                                                                |
| Operation: 0°C ... +50°C, storage: -25°C ... +70°C                                |                                                                                   |
| IP65/IP20                                                                         | IP54/IP20                                                                         |
| 400 x 329 x 5                                                                     | 96 x 72 x 60                                                                      |
| 60                                                                                | 53.5                                                                              |
| 373 x 302                                                                         | 92.8 x 68.7                                                                       |
| 2.3                                                                               | 0.165                                                                             |
| 24 W at 24 V                                                                      | 2.4 W at 24 V                                                                     |
| UL, cUL                                                                           |                                                                                   |
| <b>General technical data</b>                                                     |                                                                                   |
| TFT/LED (white)                                                                   |                                                                                   |
| 32 MB Flash, 64 MB SDRAM, 512 KB SRAM battery backup                              | 512 kB Flash, 96 kB SRAM                                                          |
| 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0                                        | —                                                                                 |
| MS Windows® CE 5.0                                                                | Keil RTX (RTOS)                                                                   |
| For operation and storage: 20 % to 85 %, non-condensing                           | 20 % to 85 %, non-condensing                                                      |
| Portrait/landscape                                                                |                                                                                   |
| Installation in front panel                                                       |                                                                                   |
| 24 V DC ±20 %                                                                     | 24 V DC                                                                           |

| Touch panels with polyester touch technology |            |                         |             |
|----------------------------------------------|------------|-------------------------|-------------|
| Designation                                  | Resolution | WebVisit                | Basic model |
| WP04T                                        | 320 x 240  | <a href="#">2913632</a> | TP35AT      |
| WP06T                                        | 320 x 240  | <a href="#">2913645</a> | TP57AT      |
| WP07T/WS                                     | 800 x 480  | <a href="#">2700307</a> | TP070ATW    |
| WP09T/WS                                     | 800 x 480  | <a href="#">2700309</a> | TP090ATW    |
| WP10T                                        | 800 x 600  | <a href="#">2700934</a> | TP105AT     |
| WP15T                                        | 1024 x 768 | <a href="#">2700935</a> | TP151AT     |
| TD1030T                                      | 320 x 240  | <a href="#">2701257</a> | —           |

## HMI's for standard applications

### Web panels with open browser for HTML5 applications

These touch panels are operator panels with a WebKit-based browser as the user software. This means that all web-based visualizations that support the current HTML5 web standard can be displayed. Your advantages:

- Used exclusively for operation, the browser is the only interactive interface
- Flexible, thanks to open web standard and free choice of web server and visualization software

- Independent visualization with self-programmed JavaScript applications
- Secure communication, thanks to SSL-encrypted data transmission
- No security updates for JAVA or Flash plug-ins, thanks to HTML5
- Display formats in 4:3 or 16:9

|                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                              |  |  |  |  |  |
| Designation                                             | WP 3057V                                                                          | WP 3070W                                                                          | WP 3090W                                                                           | WP 3105S                                                                            | WP 3121S                                                                            |
| Display                                                 | 14.48 (5.7")                                                                      | 17.78 (7")                                                                        | 22.9 cm (9")                                                                       | 26.42 (10.4")                                                                       | 30.73 (12.1")                                                                       |
| Colors                                                  | 262,144                                                                           | 262,144                                                                           | 262,144                                                                            | 262,144                                                                             | 262,144                                                                             |
| Resolution (W x H in pixels)                            | 640 x 480 VGA                                                                     | 800 x 480 WVGA                                                                    | 800 x 480 WVGA                                                                     | 800 x 600 SVGA                                                                      | 800 x 600 SVGA                                                                      |
| Brightness (in cd/m²)                                   | 400                                                                               | 350                                                                               | 800                                                                                | 340                                                                                 | 360                                                                                 |
| Reading angle (vertical/horizontal)                     | 107°/130°                                                                         | 130°/140°                                                                         | 130°/140°                                                                          | 110°/140°                                                                           | 140°/160°                                                                           |
| Backlight (MTTF in h)                                   | 40000                                                                             | 40000                                                                             | 40000                                                                              | 50000                                                                               | 50000                                                                               |
| Touch technology                                        | Polyester, analog resistive                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Processor                                               | ARM® Cortex® -A8, 800 MHz, real-time clock (with battery backup)                  |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Temperature range                                       | Operation: -0°C ... +50°C, storage: -25°C ... +70°C                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Degree of protection (front/back)                       | IP65/IP20                                                                         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Front panel dimensions (W x H x D in mm)                | 168 x 126 x 5                                                                     | 203 x 147 x 5                                                                     | 260 x 172 x 5                                                                      | 295 x 220 x 5                                                                       | 340 x 270 x 5                                                                       |
| Installation depth (in mm) including fieldbus interface | 42                                                                                | 42                                                                                | 54                                                                                 | 54                                                                                  | 55                                                                                  |
| Mounting cutout (W x H in mm)                           | 160 x 118                                                                         | 195 x 139                                                                         | 164 x 252                                                                          | 287 x 212                                                                           | 313 x 243                                                                           |
| Weight (in kg)                                          | 0.8                                                                               | 0.8                                                                               | 1.3                                                                                | 1.9                                                                                 | 2.2                                                                                 |
| Typical power consumption                               | 7.2 W at 24 V                                                                     | 7.2 W at 24 V                                                                     | 14.4 W at 24 V                                                                     | 12 W at 24 V                                                                        | 12 W at 24 V                                                                        |
| Approvals                                               | UL/cUL, Class1 Div2                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|                                                         | General technical data                                                            |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Display type                                            | TFT/LED (white)                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Memory                                                  | 1 GB Flash, 512 SDRAM                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Interfaces                                              | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0, 1 x SD card slot                      |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Operating system                                        | Debian GNU/Linux and browser                                                      |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Relative humidity                                       | For operation and storage: 20 % to 85 %, non-condensing                           |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Installation type                                       | Portrait/landscape                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Mounting type                                           | Installation in front panel                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Power supply                                            | 24 V DC ±20 %                                                                     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |

|                                                                                  |                 |
|----------------------------------------------------------------------------------|-----------------|
|                                                                                  |                 |
|                                                                                  |                 |
|  |                 |
| <b>WP 3120W</b>                                                                  | <b>WP 3150S</b> |
| 30.73<br>(12.1")                                                                 | 38.1<br>(15")   |
| 262,144                                                                          | 262,144         |
| 1280 x 800 WXGA                                                                  | 1024 x 768 XGA  |
| 320                                                                              | 480             |
| 176°/176°                                                                        | 145°/160°       |
| 50000                                                                            | 50000           |
| Polyester, analog resistive                                                      |                 |
| ARM® Cortex® -A8, 800 MHz, real-time clock<br>(with battery backup)              |                 |
| Operation: -0°C ... +50°C, storage: -25°C ...<br>+70°C                           |                 |
| IP65/IP20                                                                        |                 |
| 330 x 225 x 5                                                                    | 400 x 329 x 5   |
| 48                                                                               | 55              |
| 322 x 217                                                                        | 372 x 301       |
| 1.7                                                                              | 3               |
| 16.8 W at 24 V                                                                   | 16.8 W at 24 V  |
| UL/cUL, Class1 Div2                                                              |                 |
| <b>General technical data</b>                                                    |                 |
| TFT/LED (white)                                                                  |                 |
| 1 GB Flash, 512 SDRAM                                                            |                 |
| 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0,<br>1 x SD card slot                  |                 |
| Debian GNU/Linux and browser                                                     |                 |
| For operation and storage: 20 % to 85 %,<br>non-condensing                       |                 |
| Portrait/landscape                                                               |                 |
| Installation in front panel                                                      |                 |
| 24 V DC ±20 %                                                                    |                 |

## Touch panels with polyester touch technology

| Model    | Resolution | Order number            | Basic model |
|----------|------------|-------------------------|-------------|
| WP 3057V | 640 x 480  | <a href="#">2400251</a> | TP057STV    |
| WP 3070W | 800 x 480  | <a href="#">2400253</a> | TP070STW    |
| WP 3090W | 800 x 480  | <a href="#">2402634</a> | TP090STW    |
| WP 3105S | 800 x 600  | <a href="#">2400254</a> | TP105STS    |
| WP 3121S | 800 x 600  | <a href="#">2402635</a> | TP121STS    |
| WP 3120W | 1280 x 800 | <a href="#">2400255</a> | TP121STM    |
| WP 3150S | 1024 x 768 | <a href="#">2400285</a> | TP150STX    |

## HMI for standard applications

### Touch panels with polyester touch technology

Powerful touch panels for visualizing demanding applications. With the integrated Visu+ software, you can design complex operating and monitoring interfaces and benefit from flexible connection to a wide range of third-party systems. Your advantages:

- High-performance and versatile, thanks to new processor generation and integrated Visu+ visualization software

- Flexible connection by means of various drivers, including third-party systems
- Mobile system access optionally available with Visu+ mobile app
- Robust and durable, thanks to the aluminum front
- Various display sizes and image formats

|                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                              |  |  |  |  |  |  |
| Designation                                             | TP 3043W                                                                          | TP 3057Q                                                                          | TP 3057V                                                                          | TP 3070W                                                                           | TP 3090W                                                                            | TP 3105S                                                                            |
| Display                                                 | 10.92 cm (4.3")                                                                   | 14.48 (5.7")                                                                      | 14.48 (5.7")                                                                      | 17.78 (7")                                                                         | 22.68 (9")                                                                          | 26.42 (10.4")                                                                       |
| Colors                                                  | 262,144                                                                           | 65.536                                                                            | 262,144                                                                           | 262,144                                                                            | 16,7 Mio.                                                                           | 262,144                                                                             |
| Resolution (W x H in pixels)                            | 480 x 272 WQVGA                                                                   | 320 x 240 QVGA                                                                    | 640 x 480 VGA                                                                     | 800 x 480 WVGA                                                                     | 800 x 480 WVGA                                                                      | 800 x 600 SVGA                                                                      |
| Brightness (in cd/m²)                                   | 385                                                                               | 400                                                                               | 400                                                                               | 350                                                                                | 800                                                                                 | 340                                                                                 |
| Reading angle (vertical/horizontal)                     | 138°/150°                                                                         | 135°/150°                                                                         | 107°/130°                                                                         | 130°/140°                                                                          | 170°/170°                                                                           | 110°/140°                                                                           |
| Backlight (MTTF in h)                                   | 40000                                                                             | 40000                                                                             | 40000                                                                             | 40000                                                                              | 70000                                                                               | 50000                                                                               |
| Touch technology                                        | Polyester, analog resistive                                                       |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Processor                                               | ARM® Cortex® -A8, 800 MHz, real-time clock (with battery backup)                  |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Temperature range                                       | Operation: -0°C ... +50°C, storage: -25°C ... +70°C                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Degree of protection (front/back)                       | IP65/IP20                                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Front panel dimensions (W x H x D in mm)                | 140 x 100 x 5                                                                     | 203 x 147 x 5                                                                     | 168 x 126 x 5                                                                     | 203 x 147 x 5                                                                      | 260 x 172 x 5                                                                       | 295 x 220 x 5                                                                       |
| Installation depth (in mm) including fieldbus interface | 42<br>71                                                                          | 42<br>71                                                                          | 42<br>71                                                                          | 42<br>71                                                                           | 54<br>59                                                                            | 54<br>54                                                                            |
| Mounting cutout (W x H in mm)                           | 132 x 92                                                                          | 195 x 139                                                                         | 160 x 118                                                                         | 195 x 139                                                                          | 252 x 164                                                                           | 287 x 212                                                                           |
| Weight (in kg)                                          | 0.55                                                                              | 0.9                                                                               | 0.9                                                                               | 0.8                                                                                | 1.3                                                                                 | 1.9                                                                                 |
| Typical power consumption                               | 7.2 W at 24 V                                                                     | 7.2 W at 24 V                                                                     | 9.6 W at 24 V                                                                     | 7.2 W at 24 V                                                                      | 19.2 W at 24 V                                                                      | 12 W at 24 V                                                                        |
| Approvals                                               | UL/cUL, Class1 Div2                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|                                                         | General technical data                                                            |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Display type                                            | TFT/LED (white)                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Memory                                                  | 1 GB Flash, 512 SDRAM (optional 1 MB SRAM)                                        |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Interfaces                                              | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0, 1 x SD card slot                      |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Serial interfaces (optional)                            | 1x RS-232, 1x RS422/RS-485 (electrically isolated)                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Fieldbus interfaces (optional)                          | 2 x CAN (electrically isolated)                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Operating system                                        | MS Windows® Embedded Compact 7                                                    |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Relative humidity                                       | For operation and storage: 20 % to 85 %, non-condensing                           |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Installation type                                       | Portrait/landscape                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Mounting type                                           | Installation in front panel                                                       |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Power supply                                            | 24 V DC ±20 %                                                                     |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |

|  |                    |                   |                    |
|----------------------------------------------------------------------------------|--------------------|-------------------|--------------------|
| TP 3121S                                                                         | TP 3120W           | TP 3150S          | TP 3154W           |
| 30.73<br>(12.1")                                                                 | 30.73<br>(12.1")   | 38.1<br>(15")     | 39.1<br>(15.4")    |
| 262,144                                                                          | 65.535             | 65.535            | 65.535             |
| 800 x 600<br>SVGA                                                                | 1280 x 800<br>WXGA | 1024 x 768<br>XGA | 1280 x 800<br>WXGA |
| 360                                                                              | 320                | 480               | 360                |
| 140°/160°                                                                        | 176°/176°          | 145°/160°         | 140°/160°          |
| 50000                                                                            | 50000              | 50000             | 50000              |
| Polyester, analog resistive                                                      |                    |                   |                    |
| ARM® Cortex® -A8, 800 MHz, real-time clock (with battery backup)                 |                    |                   |                    |
| Operation: -0°C ... +50°C, storage: -25°C ... +70°C                              |                    |                   |                    |
| IP65/IP20                                                                        |                    |                   |                    |
| 340 x 270 x 5                                                                    | 330 x 225 x 5      | 400 x 329 x 5     | 420 x 297 x 5      |
| 55<br>55                                                                         | 48<br>48           | 55<br>55          | 64<br>64           |
| 313 x 243                                                                        | 322 x 217          | 372 x 301         | 396 x 273          |
| 2.2                                                                              | 2.2                | 3                 | 3.3                |
| 16.8 W at 24 V                                                                   | 19.2 W at 24 V     | 19.2 W at 24 V    | 21.6 W at 24 V     |
| UL/cUL, Class1 Div2                                                              |                    |                   |                    |
| General technical data                                                           |                    |                   |                    |
| TFT/LED (white)                                                                  |                    |                   |                    |
| 1 GB Flash, 512 SDRAM (optional 1 MB SRAM)                                       |                    |                   |                    |
| 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0, 1 x SD card slot                     |                    |                   |                    |
| 1x RS-232, 1x RS422/RS-485 (electrically isolated)                               |                    |                   |                    |
| 2 x CAN (electrically isolated)                                                  |                    |                   |                    |
| MS Windows® Embedded Compact 7                                                   |                    |                   |                    |
| For operation and storage: 20 % to 85 %, non-condensing                          |                    |                   |                    |
| Portrait/landscape                                                               |                    |                   |                    |
| Installation in front panel                                                      |                    |                   |                    |
| 24 V DC ±20 %                                                                    |                    |                   |                    |

## Variants without additional interface

| Designation | Resolution | Visu+                   | Basic model |
|-------------|------------|-------------------------|-------------|
| TP 3043W    | 480 x 272  | <a href="#">2402629</a> | TP043STB    |
| TP 3057Q    | 320 x 240  | <a href="#">2400452</a> | TP057STQ    |
| TP 3057V    | 640 x 480  | <a href="#">2400453</a> | TP057STV    |
| TP 3070W    | 800 x 480  | <a href="#">2400454</a> | TP070STW    |
| TP 3090W    | 800 x 480  | <a href="#">2402630</a> | TP090STW    |
| TP 3105S    | 800 x 600  | <a href="#">2400455</a> | TP105STS    |
| TP 3120W    | 1280 x 800 | <a href="#">2400456</a> | TP121STS    |
| TP 3121S    | 800 x 600  | <a href="#">2400457</a> | TP121STM    |
| TP 3150S    | 1024 x 768 | <a href="#">2400458</a> | TP150STX    |
| TP 3154W    | 1280 x 800 | <a href="#">2402631</a> | TP154STM    |

## HMI for standard applications

### Touch panels with PCAP touch technology

The HMIs for the visualization software Visu+ enable optimal mapping of your systems and processes. The devices have a new design and projected capacitive (PCAP) touchscreen displays with multi-touch function. Thanks to a robust surface and a diverse range of display sizes, you can plan your systems with even more flexibility. Your advantages:

- Robust and sturdy, thanks to glass front suitable for industrial use

- Integrated Visu+ visualization software
- Flexible connection by means of various drivers, including third-party systems
- Fast response and display refresh time, thanks to powerful processor
- Mobile system access optionally available with Visu+ mobile app

|                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                              |  |  |  |  |  |
| Designation                                             | TP 3070W/P                                                                        | TP 3090W/P                                                                        | TP 3120W/P                                                                         | TP 3156W/P                                                                          | TP 3185W/P                                                                          |
| Display                                                 | 17.78 cm (7")                                                                     | 22.86 cm (9")                                                                     | 30.73 cm (12.1")                                                                   | 39.62 cm (15.6")                                                                    | 47.00 cm (18.5")                                                                    |
| Colors                                                  | 16,77 Mio.                                                                        | 16,77 Mio.                                                                        | 65.535                                                                             | 65.536                                                                              | 65.536                                                                              |
| Resolution (W x H in pixels)                            | 800 x 480 WVGA                                                                    | 800 x 480 WVGA                                                                    | 1280 x 800 WXGA                                                                    | 1366 x 768 WXGA                                                                     | 1366 x 768 WXGA                                                                     |
| Brightness (in cd/m²)                                   | 400                                                                               | 800                                                                               | 320                                                                                | 320                                                                                 | 240                                                                                 |
| Reading angle (vertical/horizontal)                     | 130°/140°                                                                         | 170°/170°                                                                         | 176°/176°                                                                          | 160°/160°                                                                           | 160°/170°                                                                           |
| Backlight (MTTF in h)                                   | 40000                                                                             | 70000                                                                             | 50000                                                                              | 70000                                                                               | 50000                                                                               |
| Touch technology                                        | Projected capacitive (PCAP)                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Processor                                               | ARM® Cortex® -A8, 1 GHz, real-time clock (with battery backup)                    |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Temperature range                                       | Operation: -0°C ... +50°C, storage: -25°C ... +70°C                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Degree of protection (front/back)                       | IP65/IP20                                                                         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Front panel dimensions (W x H x D in mm)                | 208 x 149 x 6                                                                     | 271 x 179 x 6                                                                     | 336 x 234 x 6                                                                      | 436 x 278 x 6                                                                       | 485 x 329 x 8                                                                       |
| Installation depth (in mm) including fieldbus interface | 53<br>82                                                                          | 53<br>82                                                                          | 53<br>82                                                                           | 53<br>82                                                                            | 53<br>82                                                                            |
| Mounting cutout (W x H in mm)                           | 198 x 138                                                                         | 261 x 169                                                                         | 326 x 224                                                                          | 425 x 260                                                                           | 475 x 311                                                                           |
| Weight (in kg)                                          | 1.3                                                                               | 1.8                                                                               | 2.7                                                                                | 4                                                                                   | 5.6                                                                                 |
| Typical power consumption                               | 9.6 W at 24 V                                                                     | 19.2 W at 24 V                                                                    | 19.2 W at 24 V                                                                     | 24 W at 24 V                                                                        | 28.8 W at 24 V                                                                      |
| Approvals                                               | UL/cUL, Class1 Div2                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|                                                         | General technical data                                                            |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Display type                                            | TFT/LED (white)                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Memory                                                  | 1 GB Flash, 512 SDRAM (optional 1 MB SRAM)                                        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Interfaces                                              | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0, 1 x SD card slot                      |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Serial interfaces (optional)                            | 1x RS-232, 1x RS422/RS-485 (electrically isolated)                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Fieldbus interfaces (optional)                          | 2 x CAN (electrically isolated)                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Operating system                                        | MS Windows® Embedded Compact 7                                                    |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Relative humidity                                       | For operation and storage: 20 % to 85 %, non-condensing                           |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Installation type                                       | Portrait/landscape                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Mounting type                                           | Installation in front panel                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Power supply                                            | 24 V DC ±20 %                                                                     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |

## Touch panels with PCAP touch technology (variants without additional interface)

| Designation | Resolution | Visu+                   | Basic model |
|-------------|------------|-------------------------|-------------|
| TP 3070W/P  | 800 x 480  | <a href="#">2403459</a> | TP070SKW    |
| TP 3090W/P  | 800 x 480  | <a href="#">2403460</a> | TP090SKW    |
| TP 3120W/P  | 1280 x 800 | <a href="#">2403461</a> | TP121SKM    |
| TP 3156W/P  | 1366 x 768 | <a href="#">2403462</a> | TP156SKG    |
| TP 3185W/P  | 1366 x 768 | <a href="#">2403862</a> | TP185SKG    |

Variants with serial and fieldbus interfaces upon request.

## HMI for high-end applications

### PC-based touch panels with polyester touch technology

Powerful touch panels for visualizing demanding applications. With the integrated Visu+ software, you can design complex operating and monitoring interfaces and benefit from flexible connection to a wide range of third-party systems. Your advantages:

- Robust and sturdy, thanks to glass front suitable for industrial use
- Integrated Visu+ visualization software

- Flexible connection by means of various drivers, including third-party systems
- Fast response and display refresh time, thanks to powerful processor
- Mobile system access optionally available with Visu+ mobile app

|                                                         |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                              |  |  |  |
| Designation                                             | TP 5120S                                                                          | TP 5150S                                                                           | TP 5170S                                                                            |
| Display                                                 | 30.7 cm (12")                                                                     | 37.8 cm (15")                                                                      | 43.0 cm (17")                                                                       |
| Colors                                                  | 16.2 million                                                                      | 16.2 million                                                                       | 16.7 million                                                                        |
| Resolution (W x H in pixels)                            | 800 x 600 SVGA                                                                    | 1024 x 768 XGA                                                                     | 1280 x 1024 SXGA                                                                    |
| Brightness (in cd/m²)                                   | 450                                                                               | 350                                                                                | 350                                                                                 |
| Reading angle (vertical/horizontal)                     | 130°/160°                                                                         | 130°/140°                                                                          | 160°/170°                                                                           |
| Backlight (MTTF in h)                                   | 50000                                                                             |                                                                                    |                                                                                     |
| Touch technology                                        | Polyester, analog resistive                                                       |                                                                                    |                                                                                     |
| Processor                                               | Intel® Atom™ N455, 1.66 GHz, real-time clock (with battery backup)                |                                                                                    |                                                                                     |
| Temperature range                                       | Operation: -0°C ... +50°C, storage: -40°C ... +70°C                               |                                                                                    |                                                                                     |
| Degree of protection (front/back)                       | IP65/IP20                                                                         |                                                                                    |                                                                                     |
| Front panel dimensions (W x H x D in mm)                | 365 x 282 x 10                                                                    | 410 x 309 x 10                                                                     | 453 x 357 x 10                                                                      |
| Installation depth (in mm) including fieldbus interface | 45<br>—                                                                           | 48<br>—                                                                            | 56<br>—                                                                             |
| Mounting cutout (W x H in mm)                           | 334 x 253                                                                         | 387 x 285                                                                          | 424 x 330                                                                           |
| Weight (in kg)                                          | 4.8                                                                               | 6.45                                                                               | 8.1                                                                                 |
| Typical power consumption                               | 20.4 W at 24 V                                                                    | 24 W at 24 V                                                                       | 40.3 W at 24 V                                                                      |
| Approvals                                               | UL/cUL                                                                            |                                                                                    |                                                                                     |
|                                                         | General technical data                                                            |                                                                                    |                                                                                     |
| Display type                                            | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| Memory                                                  | 2 GB Compact Flash, 2 GB DDR3 RAM                                                 |                                                                                    |                                                                                     |
| Interfaces                                              | 2 x Ethernet 10/100/1000 Mbps, 4 x USB Host 2.0, 1 x VGA                          |                                                                                    |                                                                                     |
| Serial interfaces (optional)                            | 2 x COM (RS-232), 1 x COM (RS-485)                                                |                                                                                    |                                                                                     |
| Fieldbus interfaces (optional)                          | None                                                                              |                                                                                    |                                                                                     |
| Operating system                                        | MS Windows® Embedded Compact 7                                                    |                                                                                    |                                                                                     |
| Relative humidity                                       | For operation and storage: 5 % to 95 %, non-condensing                            |                                                                                    |                                                                                     |
| Installation type                                       | Portrait/landscape                                                                |                                                                                    |                                                                                     |
| Mounting type                                           | Installation in front panel                                                       |                                                                                    |                                                                                     |
| Power supply                                            | 24 V DC ±20 %                                                                     |                                                                                    |                                                                                     |

## PC-based touchscreen panels

| Designation | Resolution  | Visu+                   |
|-------------|-------------|-------------------------|
| TP 5120S    | 800 x 600   | <a href="#">2403105</a> |
| TP 5150S    | 1024 x 768  | <a href="#">2403106</a> |
| TP 5170S    | 1280 x 1024 | <a href="#">2403107</a> |

## Device accessories (may be product-specific)

| Type                | Order No. | Designation                   | Description                                                               |
|---------------------|-----------|-------------------------------|---------------------------------------------------------------------------|
| Connector           | 1847068   | MC 1,5/3-STF-3,5              | 3-pos. MSTB 1,5/3-STF connector plug (TPxxxSTx, TPxxxSKx, TPxxxSGx)       |
| Connector           | 1786844   | MSTB 2,5/3-STF                | 3-pos. MSTB 2,5/3-STF connector plug (TPxxxXiT)                           |
| Connector           | 1786857   | MSTB 2,5/4-STF                | 4-pos. MSTB 2,5/4-STF connector plug (TP 5xxxS)                           |
| Battery             | 2701383   | HMI BATTERY                   | Spare battery for maintaining the real-time clock with battery backup     |
| Mounting kit        | 2701384   | HMI SCB MOUNTING KIT 4        | 4 mounting clips for fastening TP xxx devices (up to 6 mm)                |
| Mounting kit        | 2701385   | HMI SCB MOUNTING KIT 6        | 6 mounting clips for fastening TP xxx devices (up to 6 mm)                |
| Mounting kit        | 2701387   | HMI SCB MOUNTING KIT 8        | 8 mounting clips for fastening TP xxx devices (up to 6 mm)                |
| Mounting kit        | 2701380   | HMI WALL MOUNTING KIT         | 2 spring steel clips for fastening TP xxx devices (up to 6 mm)            |
| Mounting kit        | 2701381   | HMI WALL BOX                  | Mounting frame for drywall for TP070xxx devices                           |
| Protective foil set | 2401516   | 4.3" DISPLAY PROTECTIVE FOIL  | 10 protective foils for protecting a 4.3" touchscreen (TP043STB)          |
| Protective foil set | 2701371   | 5.7" DISPLAY PROTECTIVE FOIL  | 10 protective foils for protecting a 5.7" touchscreen (TP57XIT, TP057STQ) |
| Protective foil set | 2701371   | 5.7" DISPLAY PROTECTIVE FOIL  | 10 protective foils for protecting a 5.7" touchscreen (TP057STV)          |
| Protective foil set | 2701374   | 7.0" DISPLAY PROTECTIVE FOIL  | 10 protective foils for protecting a 7" touchscreen (TP70XIT, TP070STW)   |
| Protective foil set | 2701375   | 9.0" DISPLAY PROTECTIVE FOIL  | 10 protective foils for protecting a 9" touchscreen (TP90XIT, TP090STW)   |
| Protective foil set | 2701376   | 10.0" DISPLAY PROTECTIVE FOIL | 10 protective foils for protecting a 10" touchscreen (TP105XIT, TP105STS) |
| Protective foil set | 2701377   | 12.0" DISPLAY PROTECTIVE FOIL | 10 protective films for protecting a 12" touchscreen (TP121XIT, TP121STS) |
| Protective foil set | (✓)       | On request                    | 10 protective foils for protecting a 12" touchscreen (TP121STM)           |
| Protective foil set | (✓)       | On request                    | 10 protective foils for protecting a 12" touchscreen (TP 5120S)           |
| Protective foil set | 2701378   | 15.0" DISPLAY PROTECTIVE FOIL | 10 protective foils for protecting a 15" touchscreen (TP151XIT, TP150STX) |
| Protective foil set | (✓)       | On request                    | 10 protective foils for protecting a 15" touchscreen (TP154STM)           |
| Protective foil set | 2913165   | 15.0" DISPLAY PROTECTIVE FOIL | 10 protective foils for protecting a 15" touchscreen (TP 5150S)           |
| Protective foil set | (✓)       | On request                    | 10 protective foils for protecting a 17" touchscreen (TP 5170S)           |
| Memory              | 2913154   | VL 512 MB CF                  | 512 MB CF card                                                            |
| Memory              | 2913155   | VL 1 GB CF                    | 1 GB CF card                                                              |
| Memory              | 2913156   | VL 2 GB CF                    | 2 GB CF card                                                              |
| Memory              | 2913157   | VL 4 GB CF                    | 4 GB CF card                                                              |
| Memory              | 2913158   | VL 8 GB CF                    | 8 GB CF card                                                              |
| Memory              | 241472    | SD FLASH 512 MB               | 512 MB SD card                                                            |
| Memory              | 2988162   | SD FLASH 2 GB                 | 2 GB SD card                                                              |
| Memory              | 2401626   | SD FLASH 4 GB                 | 4 GB SD card                                                              |
| Memory              | 2402809   | USB FLASH DRIVE               | 8 GB USB stick                                                            |
| Touch pen           | 2701379   | TOUCH PEN                     | Operating stylus for devices based on polyester touch technology          |

## HMI services

| Type          | Order No. | Designation                  | Description                                                                     |
|---------------|-----------|------------------------------|---------------------------------------------------------------------------------|
| Development   | 2400325   | HMI-IPC<br>CUSTOMIZATION     | Customer-specific delivery of the hardware and software (system as OEM product) |
| Development   | 9070583   | HMI ENGINEERING<br>SERVICE   | Customer-specific development of hardware and software                          |
| Development   | 9070583   | HMI ENGINEERING<br>SERVICE   | Customer-specific driver development                                            |
| Configuration | (✓)       | On request                   | Customer-specific project planning of HMI applications                          |
| Interface     | (✓)       | On request                   | Dual CAN interface for connection to the development environment                |
| Software      | (✓)       | On request                   | TS.net Support Package including hardware access library                        |
| Training      | 9074026   | TRAINING                     | Standard software training (location: Filderstadt, Germany)                     |
| Training      | 9074029   | ON-SITE TRAINING             | Standard software training (location: according to customer request)            |
| Maintenance   | 9070515   | HMI MAINTENANCE<br>SERVICE   | Service contracts for software                                                  |
| Webinar       | 9074028   | ONLINE TRAINING              | Online seminar with custom content                                              |
| Workshop      | (✓)       | On request                   | Workshop with custom content (location: Filderstadt, Germany)                   |
| Workshop      | (✓)       | On request                   | Workshop with custom content (location: according to customer request)          |
| Approvals     | 9070516   | HMI CERTIFICATION<br>SERVICE | Support for customer-specific certifications and approvals                      |

(✓) = project-specific possibility

# Industrial PCs selection guide

Whether as a simple control station or a central processing unit in the server cabinet, industrial PCs from Phoenix Contact are available in numerous designs and with various different functions. High reliability and durability is something they all have in common. The application, performance requirements, and functionality determine which industrial PC is the right choice for you.

**1**

## **Select the application**

- For the control cabinet
- For front installation
- For the server cabinet
- For use in the field

**2**

## **Assess the performance required**

- Low
- Medium
- High

**3**

## **Select the right industrial PC**

- Embeddedline
- Basicline
- Valueline
- Designline

| Product range                               | Embeddedline           | Basicline         | Valueline                                  | Designline                                 |
|---------------------------------------------|------------------------|-------------------|--------------------------------------------|--------------------------------------------|
| <b>Application</b>                          |                        |                   |                                            |                                            |
| For the control cabinet (box PCs)           | –                      | ✓                 | ✓                                          | –                                          |
| For front installation (panel PCs)          | ✓                      | ✓                 | ✓                                          | –                                          |
| For the server cabinet (rack PCs)           | –                      | ✓                 | –                                          | –                                          |
| For use in the field<br>(panel PCs in IP65) | –                      | –                 | –                                          | ✓                                          |
| <b>Performance required</b>                 |                        |                   |                                            |                                            |
| Low                                         | ✓                      | ✓                 | ✓                                          | ✓                                          |
| Medium                                      | –                      | ✓                 | ✓                                          | –                                          |
| High                                        | –                      | ✓                 | ✓                                          | ✓                                          |
| <b>Functionality</b>                        |                        |                   |                                            |                                            |
| Display formats                             | 4:3 and 16:9           | 4:3               | 4:3 and 16:9                               | 4:3 and 16:9                               |
| Touch operation mode                        | Analog resistive       | Analog resistive  | Analog resistive/<br>projective capacitive | Analog resistive/<br>projective capacitive |
| 5.7" to 10" displays                        | ✓                      | –                 | ✓                                          | –                                          |
| 12" to 18.5" displays                       | ✓                      | ✓                 | ✓                                          | ✓                                          |
| > 18.5" displays                            | –                      | –                 | ✓                                          | ✓                                          |
| Cooling                                     | Passive                | Active/passive    | Active/passive                             | Passive                                    |
| Extended temperature range                  | –                      | –                 | ✓                                          | ✓                                          |
| Can be extended via slots                   | –                      | –                 | PCI/PCIe                                   | –                                          |
| Access to important components              | Via housing cover      | Via housing cover | Via service panel                          | Via housing cover                          |
| Approvals                                   | UL, cUL, Class 1 Div 2 | UL, cUL           | UL, cUL, Class 1 Div 2,<br>NEMA            | UL, cUL                                    |

|                                                                                                      | Embeddedline                                                                                         | Basicline                                                                                                                                     | Valueline                                                                                                                                                                          | Designline                                                         |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>Performance Level</b><br><br>PassMark CPU Mark<br>(according to the PassMark<br>PerformanceTest™) |                                                                                                      |                                                                                                                                               |                                                                                                                                                                                    |                                                                    |
|                                                                                                      | 1: AMD® G-Series (T40R) 1.0 GHz<br>2: AMD® G-Series (T40E) 1.0 GHz<br>3: Intel® Atom™ E3845 1.91 GHz | 1: Intel® Atom™ N455 1.66 GHz<br>2: Intel® Celeron® N2930 1.83 GHz<br>3: Intel® Celeron® 1020E 2.20 GHz<br>4: Intel® Core™ i7-3555LE 2.50 GHz | 1: Intel® Atom™ E3845 1.91 GHz<br>2: Intel® Celeron® N2930 1.83 GHz<br>3: Intel® Core™ i3-4010U 1.70 GHz<br>4: Intel® Core™ i5-4300U 1.90 GHz<br>5: Intel® Core™ i7-6822EQ 2.0 GHz | 1: Intel® Atom™ E680 1.60 GHz<br>2: Intel® Core™ i7-4650U 1.70 GHz |

All technical data is continuously supplemented and expanded upon on our website.

## Box PCs for low performance requirements

|                                             |                                                                                                                   |                                                                                                              |  |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--|
|                                             |                                  |                            |  |
| <b>Designation</b>                          | <b>VL BPC 1000</b>                                                                                                | <b>VL2 BPC 1000</b>                                                                                          |  |
| <b>Order number</b>                         | <b>2701291</b>                                                                                                    | <b>2403046</b>                                                                                               |  |
| Processor                                   | Intel® Atom™ N455 1.66 GHz                                                                                        | Intel® Atom™ E3845 1.91 GHz (quad-core)                                                                      |  |
| RAM (configurable)                          | Max. 2 GB DDR3                                                                                                    | Max. 4 GB DDR3                                                                                               |  |
| Data memory (configurable)                  | CF                                                                                                                | SD, HDD or SSD                                                                                               |  |
| Number of drives                            | 1                                                                                                                 | 1                                                                                                            |  |
| RAID support (configurable)                 | –                                                                                                                 | –                                                                                                            |  |
| USB                                         | 4 x USB 2.0                                                                                                       | 2 x USB 2.0, 1 x USB 3.0                                                                                     |  |
| Serial interfaces                           | 1 x COM (RS-232/422/485)<br>2 x COM (RS-232)                                                                      | 1 x COM (RS-232/422/485)<br>Options:<br>1 x COM (RS-232)<br>+ 1 x COM (RS-485) 2 x CAN                       |  |
| Video out                                   | 1 x VGA                                                                                                           | 1 x DisplayPort                                                                                              |  |
| Graphics processor                          | Integrated                                                                                                        | Intel® HD Graphics                                                                                           |  |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                                      | 2 x (10/100/1000 Mbps), RJ45                                                                                 |  |
| LAN chipset                                 | Realtek® 8111D PCI-E                                                                                              | Intel® I210                                                                                                  |  |
| PCI/PCIe slots (configurable)               | –                                                                                                                 | –                                                                                                            |  |
| Maximum card size (PCI/PCIe)                | –                                                                                                                 | –                                                                                                            |  |
| Operating systems (configurable)            | Windows® Embedded Standard 7<br>Windows® Embedded Standard 2009<br>Windows® 7 Professional<br>Windows® 7 Ultimate | Windows® Embedded Standard 7<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise |  |
| Cooling                                     | Passive                                                                                                           | Passive                                                                                                      |  |
| Mounting type                               | Wall or DIN rail mounting                                                                                         | Wall or bookshelf mounting                                                                                   |  |
| Dimensions (W x H x D in mm)                | 155 x 145 x 49                                                                                                    | 271 x 211 x 65                                                                                               |  |
| Weight (in kg)                              | 1.4                                                                                                               | 2.4                                                                                                          |  |
| Power supply                                | 24 V DC ±20 %                                                                                                     | 24 V DC ±20 %                                                                                                |  |
| Maximum power consumption                   | 23.8 W at 19.2 V                                                                                                  | 21.3 W at 30 V                                                                                               |  |
| Temperature range                           | Operation: 0°C ... +50°C<br>Storage: -40°C ... +70°C                                                              | Operation with HDD: 0°C ... +45°C<br>With SSD: 0°C ... +50°C<br>Storage: -25°C ... +70°C                     |  |
| Relative humidity                           | 5 % ... 95 % (non-condensing)                                                                                     | 20 % ... 85 % (non-condensing)                                                                               |  |
| Degree of protection (front side/rear side) | IP20                                                                                                              | IP30                                                                                                         |  |
| Approvals                                   | UL, cUL                                                                                                           | In preparation: UL, cUL,<br>Class 1 Div 2                                                                    |  |

## Box PCs for medium performance requirements

|                                             |                                                                                                              |                                                                                                   |                                                                                            |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                             |                             |                 |         |
| <b>Designation</b>                          | <b>BL BPC 2000</b>                                                                                           | <b>VL BPC 2000</b>                                                                                | <b>VL2 BPC 2000</b>                                                                        |
| <b>Order number</b>                         | <b>2701712</b>                                                                                               | <b>2402759</b>                                                                                    | <b>2400332</b>                                                                             |
| Processor                                   | Intel® Celeron® N2930<br>1.83 GHz (quad-core)                                                                | Intel® Celeron® N2930<br>1.83 GHz (quad-core)                                                     | Intel® Celeron® N2930<br>1.83 GHz (quad-core)                                              |
| RAM (configurable)                          | Max. 8 GB DDR3                                                                                               | Max. 8 GB DDR3                                                                                    | Max. 8 GB DDR3                                                                             |
| Data memory (configurable)                  | CFast, HDD or SSD                                                                                            | CFast, HDD or SSD                                                                                 | HDD or SSD                                                                                 |
| Number of drives                            | 1                                                                                                            | 2                                                                                                 | 2                                                                                          |
| RAID support (configurable)                 | –                                                                                                            |                                                                                                   |                                                                                            |
| USB                                         | 3 x USB 2.0, 1 x USB 3.0                                                                                     | 3 x USB 2.0, 1 x USB 3.0                                                                          | 4 x USB 2.0                                                                                |
| Serial interfaces                           | 1 x COM (RS-232/422/485)<br>2 x COM (RS-232)                                                                 | 1 x COM (RS-232/422/485)                                                                          | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)       |
| Video out                                   | 2 x DisplayPort                                                                                              | 1 x VGA<br>1 x DisplayPort                                                                        | 2 x DisplayPort                                                                            |
| Graphics processor                          | Intel® HD Graphics                                                                                           |                                                                                                   |                                                                                            |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                                 |                                                                                                   |                                                                                            |
| LAN chipset                                 | Realtek® 8111F PCI-E                                                                                         | Intel® I210                                                                                       | Intel® I210                                                                                |
| PCI/PCIe slots (configurable)               | –                                                                                                            | 2 x PCI                                                                                           | 1x PCI or 1 x PCIe                                                                         |
| Maximum card size (PCI/PCIe)                | –                                                                                                            | 180.9 mm x 107.9 mm                                                                               | 175 mm x 100 mm x 15 mm                                                                    |
| Operating systems (configurable)            | Windows® Embedded Standard 7<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise |                                                                                                   |                                                                                            |
| Cooling                                     | Passive                                                                                                      |                                                                                                   |                                                                                            |
| Mounting type                               | Wall or DIN rail mounting                                                                                    | Wall or bookshelf mounting                                                                        | Wall or bookshelf mounting                                                                 |
| Dimensions (W x H x D in mm)                | 162 x 146 x 49 (without SSD/HDD)<br>162 x 146 x 64 (with SSD/HDD)                                            | 265 x 207x 49<br>265 x 207 x 87 (with PCI slots)                                                  | 264 x 215 x 95                                                                             |
| Weight (in kg)                              | 1.6                                                                                                          | 3.4<br>5.35 (with PCI slots)                                                                      | 4.2                                                                                        |
| Power supply                                | 24 V DC ±20 %                                                                                                |                                                                                                   |                                                                                            |
| Maximum power consumption                   | 21.3 W at 19.2 V                                                                                             | 63.2 W at 19.2 V                                                                                  | 37.4 W at 19.2 V<br>with PCI-PCIe 40.8 W                                                   |
| Temperature range                           | Operation: 0°C ... +50°C<br>Storage: -40°C ... +70°C                                                         | Operation with HDD: 0°C ... +50°C<br>With SSD, CFast: -20°C ... +55°C<br>Storage: -40°C ... +70°C | Operation with HDD: 0°C ... +45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C |
| Relative humidity                           | 5 % ... 95 % (non-condensing)                                                                                |                                                                                                   |                                                                                            |
| Degree of protection (front side/rear side) | IP20                                                                                                         | IP20                                                                                              | IP30                                                                                       |
| Approvals                                   | UL, cUL                                                                                                      | UL, cUL, Class 1 Div 2                                                                            | UL, cUL, Class 1 Div 2                                                                     |

## Box PCs for medium and high performance requirements

|                                  |                                                                                                              |                                                                                           |                                                                                           |
|----------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|                                  |                             |         |        |
| <b>Designation</b>               | <b>VL BPC 3000</b>                                                                                           | <b>VL2 BPC 3000</b>                                                                       | <b>VL2 BPC 7000</b>                                                                       |
| <b>Order number</b>              | <b>2400183</b>                                                                                               | <b>2400492</b>                                                                            | <b>2400333</b>                                                                            |
| Processor                        | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core)                                                                 | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core)                                              | Intel® Core™ i5-4300U<br>1.90 GHz (dual-core)                                             |
| RAM (configurable)               | Max. 16 GB DDR3                                                                                              |                                                                                           |                                                                                           |
| Data memory (configurable)       | CFast, HDD or SSD                                                                                            | HDD or SSD                                                                                | HDD or SSD                                                                                |
| Number of drives                 | 2                                                                                                            |                                                                                           |                                                                                           |
| RAID support (configurable)      | –                                                                                                            | 0/1                                                                                       | 0/1                                                                                       |
| USB                              | 3 x USB 2.0, 1 x USB 3.0                                                                                     | 2 x USB 2.0, 2 x USB 3.0                                                                  | 2 x USB 2.0, 2 x USB 3.0                                                                  |
| Serial interfaces                | 1 x COM (RS-232/422/485)                                                                                     | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)      | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)      |
| Video out                        | 1 x DVI-D<br>1 x DisplayPort                                                                                 | 2 x DisplayPort                                                                           | 2 x DisplayPort                                                                           |
| Graphics processor               | Intel® HD Graphics 4400                                                                                      |                                                                                           |                                                                                           |
| Ethernet interfaces              | 2 x (10/100/1000 Mbps), RJ45                                                                                 |                                                                                           |                                                                                           |
| LAN chipset                      | Intel® I210                                                                                                  |                                                                                           |                                                                                           |
| PCI/PCIe slots (configurable)    | 2x PCI                                                                                                       | 1x PCI or 1 x PCIe                                                                        | 1x PCI or 1 x PCIe                                                                        |
| Maximum card size (PCI/PCIe)     | 180.9 mm x 107.9 mm                                                                                          | 175 mm x 100 mm x 15 mm                                                                   | 175 mm x 100 mm x 15 mm                                                                   |
| Operating systems (configurable) | Windows® Embedded Standard 7<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise |                                                                                           |                                                                                           |
| Cooling                          | Passive                                                                                                      |                                                                                           |                                                                                           |
| Mounting type                    | Wall or bookshelf mounting                                                                                   |                                                                                           |                                                                                           |
| Dimensions (W x H x D in mm)     | 265 x 207x 49<br>265 x 207 x 87 (with PCI slots)                                                             | 264 x 215 x 95                                                                            | 264 x 215 x 95                                                                            |
| Weight (in kg)                   | 3.4<br>5.35 (with PCI slots)                                                                                 | 4.8                                                                                       | 4.8                                                                                       |
| Power supply                     | 24 V DC ±20 %                                                                                                | 24 V DC ±20 %                                                                             | 24 V DC ±20 %                                                                             |
| Maximum power consumption        | 67.4 W at 19.2 V                                                                                             | 41.28 W at 19.2 V<br>with PCI-PCIe 46.4 W                                                 | 42.7 W at 19.2 V<br>with PCI-PCIe 50.4 W                                                  |
| Temperature range                | Operation with HDD: 0°C ...+55°C<br>With SSD, CFast: -20°C ... +55°C<br>Storage: -40°C ... +70°C             | Operation with HDD: 0°C ...+45°C<br>With SSD: -10°C ... +50°C<br>Storage: -40°C ... +70°C | Operation with HDD: 0°C ...+45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C |
| Relative humidity                | 5 % ... 95 % (non-condensing)                                                                                |                                                                                           |                                                                                           |
| Degree of protection             | IP20                                                                                                         | IP30                                                                                      | IP30                                                                                      |
| Approvals                        | UL, cUL, Class 1 Div 2                                                                                       |                                                                                           |                                                                                           |

| Rack PCs                                                                                                     |                                                                                                      |                                                                                    |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                             |                     |  |
| <b>VL2 BPC 9000</b>                                                                                          | <b>BL RACKMOUNT 2U</b>                                                                               | <b>BL RACKMOUNT 4U</b>                                                             |
| <b>2400499</b>                                                                                               | <b>2400063</b>                                                                                       | <b>2400064</b>                                                                     |
| Intel® Core™ i7-6822EQ<br>2 GHz (quad-core)                                                                  | Intel® Core™ i3-4330T 3,0 GHz,<br>Intel® Core™ i7-4770S<br>3.1 GHz/ 3.9 GHz                          |                                                                                    |
| Max. 16 GB DDR4                                                                                              | With i3: max. 8 GB RAM,<br>With i7: max. 16 GB RAM                                                   |                                                                                    |
| HDD or SSD                                                                                                   | HDD or SSD                                                                                           |                                                                                    |
| 2                                                                                                            | 2                                                                                                    | 3                                                                                  |
| 0/1                                                                                                          | 0/1                                                                                                  | 0/1/5                                                                              |
| 2 x USB 2.0, 2 x USB 3.0                                                                                     | 2 x USB 2.0, 2 x USB 3.0                                                                             | 4 x USB 2.0, 2 x USB 3.0                                                           |
| 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)                         | 1 x COM (RS-232)<br>1 x COM (RS-232/422/485)                                                         |                                                                                    |
| 2 x DisplayPort                                                                                              | VGA, DVI-I                                                                                           |                                                                                    |
| Intel® HD Graphics 530                                                                                       | Intel® HD Graphics 4600                                                                              |                                                                                    |
| 2 x (10/100/1000 Mbps), RJ45                                                                                 | 2 x (10/100/1000 Mbps), RJ45                                                                         |                                                                                    |
| Intel® I210                                                                                                  | 1 x Intel® I210<br>1 x Intel® I217                                                                   |                                                                                    |
| 1 x PCI or 1 x PCIe                                                                                          | 3 x PCI, 1 x PCIe x8, 1 x PCIe x16                                                                   | 8x PCI, 3 x PCIe x1, 1 x PCIe x16                                                  |
| 175 mm x 100 mm x 15 mm                                                                                      | —                                                                                                    |                                                                                    |
| Windows® Embedded Standard 7<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise | Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise<br>Windows® Server 2012 |                                                                                    |
| Active                                                                                                       | Active                                                                                               |                                                                                    |
| Wall or bookshelf mounting                                                                                   | Rack mounting 2U                                                                                     | Rack mounting 4U                                                                   |
| 264 x 215 x 95                                                                                               | 482 x 89 x 429                                                                                       | 482 x 177 x 461                                                                    |
| 4.8                                                                                                          | 13.5                                                                                                 | 14.5                                                                               |
| 24 V DC ±20 %                                                                                                | 350 W power supply unit<br>(230 V power cable)                                                       | 500 W power supply unit<br>(230 V power cable)                                     |
| —                                                                                                            | —                                                                                                    |                                                                                    |
| Operation with HDD: 0°C ... +45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C                   | Operation: 0°C ... +55°C<br>Storage: -40°C ... +70°C                                                 |                                                                                    |
| 5 % ... 95 % (non-condensing)                                                                                | 5 % ... 95 % (non-condensing)                                                                        |                                                                                    |
| IP30                                                                                                         | IP20                                                                                                 |                                                                                    |
| In preparation: UL, cUL,<br>Class 1 Div 2                                                                    | UL, cUL                                                                                              |                                                                                    |

## Panel PCs with analog resistive touchscreens for low performance requirements

|                                             |                                                                                                                                         |                                                                                   |                                                                                     |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |                                                        |  |  |  |
| <b>Designation</b>                          | <b>EL PPC5.7 1000</b>                                                                                                                   | <b>EL PPC7 1000</b>                                                               | <b>EL PPC9 1000</b>                                                                 | <b>EL PPC10S 1000</b>                                                               |
| <b>Order number</b>                         | <b>2404318</b>                                                                                                                          | <b>2701481</b>                                                                    | <b>2701482</b>                                                                      | <b>2400232</b>                                                                      |
| Touch technology                            | Analog resistive                                                                                                                        |                                                                                   |                                                                                     |                                                                                     |
| Display size                                | 14.5 cm / 5.7"                                                                                                                          | 17.78 cm/7"                                                                       | 22.9 cm/9"                                                                          | 26.4 cm/10.4"                                                                       |
| Display type                                | TFT/LED (white)                                                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| Colors                                      | 262144                                                                                                                                  | 262144                                                                            | 16.7 million                                                                        | 65536                                                                               |
| Resolution (W x H in pixels)                | 640 x 480 pixels (VGA)                                                                                                                  | 800 x 480 (WVGA)                                                                  | 800 x 480 (WVGA)                                                                    | 800 x 600 (SVGA)                                                                    |
| Brightness (in cd/m²)                       | 400                                                                                                                                     | 350                                                                               | 400                                                                                 | 340                                                                                 |
| Reading angle (vertical/horizontal)         | 107°/130°                                                                                                                               | 130°/140°                                                                         | 170°/170°                                                                           | 110°/140°                                                                           |
| Backlight (MTTF in h)                       | > 40,000                                                                                                                                | > 40,000                                                                          | > 70,000                                                                            | > 50,000                                                                            |
| Processor                                   | AMD® Embedded G-Series (T40R) 1.0 GHz/AMD® Embedded G-Series (T40E) 1.0 GHz (dual-core)<br>Intel® Atom™ E3845, 4 x 1.91 GHz (quad-core) |                                                                                   |                                                                                     |                                                                                     |
| RAM (configurable)                          | Max. 4 GB DDR3                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD                                                                                                                            | SATA DOM-SSD                                                                      | SATA DOM-SSD                                                                        | SATA DOM-SSD or SSD                                                                 |
| Number of drives                            | 1                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| RAID support (configurable)                 | —                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| USB                                         | 4 x USB Host 2.0                                                                                                                        |                                                                                   |                                                                                     |                                                                                     |
| Serial interfaces                           | Optional: 1 x COM (RS-232) 1 x COM (RS-485)                                                                                             |                                                                                   |                                                                                     |                                                                                     |
| Fieldbus interfaces                         | Optional: 2 x CAN                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| Video out                                   | None                                                                                                                                    |                                                                                   |                                                                                     |                                                                                     |
| Graphics processor                          | AMD® Radeon™ HD 6250/Intel® HD Graphics                                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                                                            |                                                                                   |                                                                                     |                                                                                     |
| LAN chipset                                 | Realtek® 8111C PCI-E +/Intel® 82574 (AMD® CPU)/Intel® I210 (Intel® CPU)                                                                 |                                                                                   |                                                                                     |                                                                                     |
| PCI/PCIe slots (configurable)               | —                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| Maximum card size (PCI/PCIe)                | —                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7/Windows® 7 Professional/Windows® 10 IoT Enterprise                                                         |                                                                                   |                                                                                     |                                                                                     |
| Cooling                                     | Passive                                                                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| Mounting type                               | Front installation                                                                                                                      |                                                                                   |                                                                                     |                                                                                     |
| Dimensions (W x H x D in mm)                | 168 x 126 x 69                                                                                                                          | 203 x 147 x 81                                                                    | 260 x 172 x 81                                                                      | 295 x 220 x 92                                                                      |
| Weight (in kg)                              | Approx. 0.9                                                                                                                             | Approx. 1.1                                                                       | Approx. 1.4                                                                         | Approx. 1.7                                                                         |
| Power supply                                | 24 V DC ±20 %                                                                                                                           | 24 V DC ±20 %                                                                     | 24 V DC ±20 %                                                                       | 24 V DC ±20 %                                                                       |
| Type of power consumption                   | 14.4 W at 24 V                                                                                                                          | 19.2 W at 24 V                                                                    | 26.4 W at 24 V                                                                      | 26.4 W at 24 V                                                                      |
| Temperature range                           | Operation: -0°C ... +50°C/storage: -25°C ... +70°C                                                                                      |                                                                                   |                                                                                     |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                                                                          |                                                                                   |                                                                                     |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP20                                                                                                                               |                                                                                   |                                                                                     |                                                                                     |
| Approvals                                   | —                                                                                                                                       | UL, cUL, Class 1 Div 2 (at Intel® Atom™ E3845)                                    | UL, cUL, Class 1 Div 2 (at Intel® Atom™ E3845)                                      | UL, cUL, Class 1 Div 2 (at Intel® Atom™ E3845)                                      |

|                                             |                                                                                                                                         |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |                                                        |  |  |  |
| <b>Designation</b>                          | <b>EL PPC12S 1000</b>                                                                                                                   | <b>EL PPC12 1000</b>                                                              | <b>EL PPC15S 1000</b>                                                              | <b>EL PPC15 1000</b>                                                                |
| <b>Order number</b>                         | <b>2400233</b>                                                                                                                          | <b>2701484</b>                                                                    | <b>2400234</b>                                                                     | <b>2701485</b>                                                                      |
| Touch technology                            | Analog resistive                                                                                                                        |                                                                                   |                                                                                    |                                                                                     |
| Display size                                | 30.73 cm/12.1"                                                                                                                          | 30.73 cm/12.1"                                                                    | 38.1 cm/15"                                                                        | 39.12 cm/15.4"                                                                      |
| Display type                                | TFT/LED (white)                                                                                                                         | TFT/LED (white)                                                                   | TFT/LED (white)                                                                    | TFT/LED (white)                                                                     |
| Colors                                      | 262144                                                                                                                                  | 262144                                                                            | 262144                                                                             | 262144                                                                              |
| Resolution (W x H in pixels)                | 800 x 600 (SVGA)                                                                                                                        | 1280 x 800 (WXGA)                                                                 | 1024 x 768 (XGA)                                                                   | 1280 x 800 (WXGA)                                                                   |
| Brightness (in cd/m²)                       | 350                                                                                                                                     | 320                                                                               | 480                                                                                | 360                                                                                 |
| Reading angle (vertical/horizontal)         | 140°/160°                                                                                                                               | 176°/176°                                                                         | 145°/160°                                                                          | 140°/160°                                                                           |
| Backlight (MTTF in h)                       | > 50,000                                                                                                                                | > 50,000                                                                          | > 50,000                                                                           | > 50,000                                                                            |
| Processor                                   | AMD® Embedded G-Series (T40R) 1.0 GHz/AMD® Embedded G-Series (T40E) 1.0 GHz (dual-core)<br>Intel® Atom™ E3845, 4 x 1.91 GHz (quad-core) |                                                                                   |                                                                                    |                                                                                     |
| RAM (configurable)                          | Max. 4 GB DDR3                                                                                                                          |                                                                                   |                                                                                    |                                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD or SSD                                                                                                                     |                                                                                   |                                                                                    |                                                                                     |
| Number of drives                            | 1                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |
| USB                                         | 4 x USB Host 2.0                                                                                                                        |                                                                                   |                                                                                    |                                                                                     |
| Serial interfaces                           | Optional: 1 x COM (RS-232), 1 x COM (RS-485)                                                                                            |                                                                                   |                                                                                    |                                                                                     |
| Fieldbus interfaces                         | Optional: 2 x CAN                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |
| Video out                                   | None                                                                                                                                    |                                                                                   |                                                                                    |                                                                                     |
| Graphics processor                          | AMD® Radeon™ HD 6250/Intel® HD Graphics                                                                                                 |                                                                                   |                                                                                    |                                                                                     |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                                                            |                                                                                   |                                                                                    |                                                                                     |
| LAN chipset                                 | Realtek® 8111C PCI-E +/Intel® 82574 (AMD® CPU)/Intel® I210 (Intel® CPU)                                                                 |                                                                                   |                                                                                    |                                                                                     |
| PCI/PCIe slots (configurable)               | –                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7/Windows® 7 Professional/Windows® 10 IoT Enterprise                                                         |                                                                                   |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                                                                                 |                                                                                   |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                                                                      |                                                                                   |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 340 x 270 x 81                                                                                                                          | 330 x 225 x 81                                                                    | 400 x 329 x 92                                                                     | 410 x 290 x 87                                                                      |
| Weight (in kg)                              | Approx. 2.4                                                                                                                             | Approx. 2.05                                                                      | Approx. 3.9                                                                        | 4.0                                                                                 |
| Power supply                                | 24 V DC ±20 %                                                                                                                           |                                                                                   |                                                                                    |                                                                                     |
| Type of power consumption                   | 26.4 W at 24 V                                                                                                                          | 24 W at 24 V                                                                      | 31.2 W at 24 V                                                                     | 31.2 W at 24 V                                                                      |
| Temperature range                           | Operation: -0°C ... +50°C/storage: -25°C ... +70°C                                                                                      |                                                                                   |                                                                                    |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                                                                          |                                                                                   |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP20                                                                                                                               |                                                                                   |                                                                                    |                                                                                     |
| Approvals                                   | UL, cUL, Class 1 Div 2 (at Intel® Atom™ E3845)                                                                                          |                                                                                   |                                                                                    |                                                                                     |

## Panel PCs with analog resistive touchscreens for low, medium and high performance requirements

|                                                |                                                                                                                                               |                                                                                                            |                                                                                                                                                                             |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                |                                                              |                          |                                                                                          |
| <b>Designation</b>                             | <b>BL PPC 1000</b>                                                                                                                            | <b>VL PPC 2000</b>                                                                                         | <b>BL PPC 3000</b>                                                                                                                                                          |
| <b>Order number</b>                            | <b>2701401</b>                                                                                                                                | <b>2402760</b>                                                                                             | <b>2701397</b>                                                                                                                                                              |
| Touch technology                               | Analog resistive                                                                                                                              |                                                                                                            |                                                                                                                                                                             |
| Display size                                   | 30.7 cm/12.1"/38.1 cm/15"<br>43.2 cm/17"                                                                                                      | 30.7 cm/12.1" to 60.9 cm/24"<br>(optional: Front-USB)                                                      | 38.1 cm/15"<br>43.2 cm/17"                                                                                                                                                  |
| Display type                                   | TFT/LED (white)                                                                                                                               |                                                                                                            |                                                                                                                                                                             |
| Colors                                         | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Resolution (W x H in pixels)                   | 800 x 600 (SVGA)<br>1024 x 768 (XGA)<br>1280 x 1024 (SXGA)                                                                                    | 800 x 600 (SVGA) up to 1920 x 1080<br>(Full HD)                                                            | 1024 x 768 (XGA)<br>1280 x 1024 (SXGA)                                                                                                                                      |
| Brightness (in cd/m²)                          | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Reading angle<br>(vertical/horizontal)         | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Backlight (MTTF in h)                          | > 50,000                                                                                                                                      |                                                                                                            |                                                                                                                                                                             |
| Processor                                      | Intel® Atom™ N455 1.66 GHz                                                                                                                    | Intel® Celeron® N2930 1.83 GHz<br>(quad-core)                                                              | Intel® Celeron® 1020E 2.2 GHz                                                                                                                                               |
| RAM (configurable)                             | Max. 2 GB DDR3                                                                                                                                | Max. 8 GB DDR3                                                                                             | Max. 16 GB DDR3                                                                                                                                                             |
| Data memory (configurable)                     | CFast                                                                                                                                         | CFast, HDD or SSD                                                                                          | CFast                                                                                                                                                                       |
| Number of drives                               | 1                                                                                                                                             | 2                                                                                                          | 1                                                                                                                                                                           |
| RAID support (configurable)                    | –                                                                                                                                             |                                                                                                            |                                                                                                                                                                             |
| USB                                            | 4 x USB 2.0                                                                                                                                   | 3 x USB 2.0, 1 x USB 3.0                                                                                   | 4 x USB 2.0                                                                                                                                                                 |
| Serial interfaces                              | 1 x COM (RS-232/422/485)<br>2 x (RS-232)                                                                                                      | 1 x COM (RS-232/422/485)                                                                                   | 1 x COM (RS-232/422/485)<br>2 x (RS-232)                                                                                                                                    |
| Video out                                      | VGA                                                                                                                                           | 1 x VGA 1 x DisplayPort                                                                                    | VGA                                                                                                                                                                         |
| Graphics processor                             | Integrated                                                                                                                                    | Intel® HD Graphics                                                                                         | Intel® HD Graphics 4000                                                                                                                                                     |
| Ethernet interfaces                            | 2 x (10/100/1000 Mbps), RJ45                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| LAN chipset                                    | Realtek® 8111D                                                                                                                                | Intel® I210                                                                                                | Realtek® 8111F                                                                                                                                                              |
| PCI/PCIe slots (configurable)                  | –                                                                                                                                             | 2 x PCI                                                                                                    | –                                                                                                                                                                           |
| Maximum card size (PCI/PCIe)                   | –                                                                                                                                             | 180.9 x 107.9 mm                                                                                           | –                                                                                                                                                                           |
| Operating systems<br>(configurable)            | Windows® Embedded Standard 2009<br>Windows® Embedded Standard 7<br>Windows® XP Professional<br>Windows® 7 Professional<br>Windows® 7 Ultimate | Windows® Embedded Standard 7<br>Windows® Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise | Windows® Embedded Standard 2009<br>Windows® Embedded Standard 7<br>Windows® XP Professional<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise |
| Cooling                                        | Passive                                                                                                                                       | Passive                                                                                                    | Active                                                                                                                                                                      |
| Mounting type                                  | Front installation                                                                                                                            |                                                                                                            |                                                                                                                                                                             |
| Dimensions (W x H x D in mm)                   | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Weight (in kg)                                 | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Power supply                                   | 24 V DC ±20 %                                                                                                                                 |                                                                                                            |                                                                                                                                                                             |
| Type of power consumption                      | Depends on the configuration                                                                                                                  |                                                                                                            |                                                                                                                                                                             |
| Temperature range                              | Operation: 0°C ... +50°C<br>Storage: -40°C ... +70°C                                                                                          | Operation: -20°C ... +55°C<br>Storage: -40°C ... +70°C                                                     | Operation: 0°C ... +45°C<br>Storage: -40°C ... +70°C                                                                                                                        |
| Relative humidity                              | 5 % ... 95 % (non-condensing)                                                                                                                 |                                                                                                            |                                                                                                                                                                             |
| Degree of protection<br>(front side/rear side) | IP65/IP20                                                                                                                                     |                                                                                                            |                                                                                                                                                                             |
| Approvals                                      | UL, cUL                                                                                                                                       | UL, cUL, Class 1 Div 2                                                                                     | UL, cUL                                                                                                                                                                     |

|                                                |                                                                                                            |                                                                                                                                                                             |  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                |                           |                                                                                           |  |
| <b>Designation</b>                             | <b>VL PPC 3000</b>                                                                                         | <b>BL PPC 7000</b>                                                                                                                                                          |  |
| <b>Order number</b>                            | <b>2400184</b>                                                                                             | <b>2701398</b>                                                                                                                                                              |  |
| Touch technology                               | Analog resistive                                                                                           |                                                                                                                                                                             |  |
| Display size                                   | 30.7 cm/12.1" to 60.9 cm/24"<br>(optional: Front-USB)                                                      | 38.1 cm/15"<br>43.2 cm/17"                                                                                                                                                  |  |
| Display type                                   | TFT/LED (white)                                                                                            |                                                                                                                                                                             |  |
| Colors                                         | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Resolution (W x H in pixels)                   | 800 x 600 (SVGA) to<br>1920 x 1080 (Full HD)                                                               | 1024 x 768 (XGA)<br>1280 x 1024 (SXGA)                                                                                                                                      |  |
| Brightness (in cd/m²)                          | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Reading angle<br>(vertical/horizontal)         | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Backlight (MTTF in h)                          | > 50,000                                                                                                   |                                                                                                                                                                             |  |
| Processor                                      | Intel® Core™ i3-4010U 1.70 GHz<br>(dual-core)                                                              | Intel® Core™ i7-3555LE 25/32 GHz                                                                                                                                            |  |
| RAM (configurable)                             | Max. 16 GB DDR3                                                                                            |                                                                                                                                                                             |  |
| Data memory (configurable)                     | CFast, HDD or SSD                                                                                          | CFast                                                                                                                                                                       |  |
| Number of drives                               | 2                                                                                                          | 1                                                                                                                                                                           |  |
| RAID support (configurable)                    | –                                                                                                          |                                                                                                                                                                             |  |
| USB                                            | 3 x USB 2.0, 1 x USB 3.0                                                                                   | 4 x USB 2.0                                                                                                                                                                 |  |
| Serial interfaces                              | 1 x COM (RS-232/422/485)                                                                                   | 1 x COM (RS-232/422/485)<br>2 x (RS-232)                                                                                                                                    |  |
| Video out                                      | 1 x DVI-D 1 x DisplayPort                                                                                  | VGA                                                                                                                                                                         |  |
| Graphics processor                             | Intel® HD Graphics 4000                                                                                    |                                                                                                                                                                             |  |
| Ethernet interfaces                            | 2 x (10/100/1000 Mbps), RJ45                                                                               |                                                                                                                                                                             |  |
| LAN chipset                                    | Intel® I210                                                                                                | Realtek® 8111F                                                                                                                                                              |  |
| PCI/PCIe slots (configurable)                  | 2 x PCI                                                                                                    | –                                                                                                                                                                           |  |
| Maximum card size (PCI/PCIe)                   | 180.9 x 107.9 mm                                                                                           | –                                                                                                                                                                           |  |
| Operating systems<br>(configurable)            | Windows® Embedded Standard 7<br>Windows® Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise | Windows® Embedded Standard 2009<br>Windows® Embedded Standard 7<br>Windows® XP Professional<br>Windows® 7 Professional<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise |  |
| Cooling                                        | Passive                                                                                                    | Active                                                                                                                                                                      |  |
| Mounting type                                  | Front installation                                                                                         |                                                                                                                                                                             |  |
| Dimensions (W x H x D in mm)                   | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Weight (in kg)                                 | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Power supply                                   | 24 V DC ±20 %                                                                                              |                                                                                                                                                                             |  |
| Type of power consumption                      | Depends on the configuration                                                                               |                                                                                                                                                                             |  |
| Temperature range                              | Operation: -20°C ... +45°C<br>Storage: -40°C ... +70°C                                                     | Operation: 0°C ... +45°C<br>Storage: -40°C ... +70°C                                                                                                                        |  |
| Relative humidity                              | 5 % ... 95 % (non-condensing)                                                                              |                                                                                                                                                                             |  |
| Degree of protection<br>(front side/rear side) | IP65/IP20                                                                                                  |                                                                                                                                                                             |  |
| Approvals                                      | UL, cUL, Class 1 Div 2                                                                                     | UL, cUL                                                                                                                                                                     |  |

## Panel PCs with projective capacitive touchscreens for low performance applications

|                                             |                                                                                                     |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |                    |  |  |
| <b>Designation</b>                          | <b>VL2 PPC7 1000</b>                                                                                | <b>VL2 PPC 9 1000</b>                                                              | <b>VL2 PPC12 1000</b>                                                               |
| <b>Order number</b>                         | <b>2403708</b>                                                                                      | <b>2403709</b>                                                                     | <b>2403710</b>                                                                      |
| Touch technology                            | Projective capacitive, four-touch control                                                           |                                                                                    |                                                                                     |
| Display size                                | 17.8 cm/7"                                                                                          | 22.9 cm/9"                                                                         | 30.7 cm/12.1"                                                                       |
| Display type                                | TFT/LED (white)                                                                                     |                                                                                    |                                                                                     |
| Colors                                      | 16.7 million                                                                                        | 16.7 million                                                                       | 16.7 million                                                                        |
| Resolution (W x H in pixels)                | 800 x 480 (WVGA)                                                                                    | 800 x 480 (WVGA)                                                                   | 1280 x 800 (WXGA)                                                                   |
| Brightness (in cd/m²)                       | 350                                                                                                 | 400                                                                                | 320                                                                                 |
| Reading angle (vertical/horizontal)         | 130°/140°                                                                                           | 170°/170°                                                                          | 176°/176°                                                                           |
| Backlight (MTTF in h)                       | > 40,000                                                                                            | > 70,000                                                                           | > 50,000                                                                            |
| Processor                                   | Intel® Atom™ E3845 4 x 1.91 GHz (quad-core)                                                         |                                                                                    |                                                                                     |
| RAM (configurable)                          | Max. 4 GB DDR3L                                                                                     | Max. 4 GB DDR3L                                                                    | Max. 4 GB DDR3L                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD                                                                                        |                                                                                    |                                                                                     |
| Number of drives                            | 1                                                                                                   |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                                   |                                                                                    |                                                                                     |
| USB                                         | 2 x USB 2.0, 1 x USB 3.0                                                                            |                                                                                    |                                                                                     |
| Serial interfaces                           | 1x COM (RS-232/422/485) options: 1x RS-232 + 1x RS-485 2x CAN                                       |                                                                                    |                                                                                     |
| Video out                                   | 1 x DisplayPort                                                                                     |                                                                                    |                                                                                     |
| Graphics processor                          | Intel® HD Graphics                                                                                  |                                                                                    |                                                                                     |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                        |                                                                                    |                                                                                     |
| LAN chipset                                 | Intel® I210                                                                                         |                                                                                    |                                                                                     |
| PCI/PCIe slots (configurable)               | –                                                                                                   |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                                   |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7/Windows® 7 Professional/Windows® 7 Ultimate/Windows® 10 IoT Enterprise |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                                             |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                                  |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 208 x 149 x 88, with optional interfaces: 208 x 149 x 111                                           | 271 x 179 x 88, with optional interfaces: 271 x 179 x 111                          | 336 x 234 x 88, with optional interfaces: 336 x 234 x 111                           |
| Weight (in kg)                              | 2.3                                                                                                 | 2.6                                                                                | 3.3                                                                                 |
| Power supply                                | 24 V DC ±20 %                                                                                       |                                                                                    |                                                                                     |
| Maximum power consumption                   | 25.56 W at 18 V                                                                                     | 33 W at 30 V                                                                       | 34.5 W at 30 V                                                                      |
| Temperature range                           | Operation with SSD: 0°C ...+50°C<br>Storage: -25°C ... +70°C                                        |                                                                                    |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                                      |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP30                                                                                           |                                                                                    |                                                                                     |
| Approvals                                   | In preparation: UL, cUL, NEMA 4, Class 1 Div 2                                                      |                                                                                    |                                                                                     |

## Panel PCs with projective capacitive touchscreens for low, medium and high performance applications

|                                                                                                     |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                    |              |              |             |            |
| VL2 PPC 1000                                                                                        | VL2 PPC 2000                                                                                  | VL2 PPC 3000                                                                                  | VL2 PPC 7000                                                                                  | VL2 PPC 9000                                                                                  |
| 2403047                                                                                             | 2400334                                                                                       | 2400498                                                                                       | 2400346                                                                                       | 2400500                                                                                       |
| Projective capacitive, ten-touch control                                                            |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| 39.6 cm/15.6"/47 cm/18.5"/54.6 cm/21.5"                                                             |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| TFT/LED (white)                                                                                     |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| 16.7 million                                                                                        | 16.7 million                                                                                  | 16.7 million                                                                                  | 16.7 million                                                                                  | 16.7 million                                                                                  |
| 1366 x 768 (HD)/1366 x 768 (HD)/1920 x 1080 (Full HD)                                               |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| 400/300/300                                                                                         |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| 170°/170°/170°/170°/178°/178°                                                                       |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| > 50,000                                                                                            |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| Intel® Atom™ E3845<br>4 x 1.91 GHz (quad-core)<br>Max. 4 GB DDR3L                                   | Intel® Celeron® N2930<br>1.83 GHz/2.16 GHz<br>Max. 8 GB DDR3 SODIMM                           | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core)<br>Max. 16 GB DDR3                               | Intel® Core™ i5-4300U<br>1.90 GHz (dual-core)<br>Max. 16 GB DDR3                              | Intel® Core™ i7-6822EQ<br>2 GHz (quad-core)<br>Max. 16 GB DDR4                                |
| HDD or SSD                                                                                          | HDD or SSD                                                                                    | HDD or SSD                                                                                    | HDD or SSD                                                                                    | HDD or SSD                                                                                    |
| 1                                                                                                   | 2                                                                                             | 2                                                                                             | 2                                                                                             | 2                                                                                             |
| –                                                                                                   | –                                                                                             | 0/1                                                                                           | 0/1                                                                                           | 0/1                                                                                           |
| 2 x USB 2.0, 1 x USB 3.0                                                                            | 4 x USB 2.0                                                                                   | 2 x USB 2.0, 2 x USB 3.0                                                                      | 2 x USB 2.0, 2 x USB 3.0                                                                      | 2 x USB 2.0, 2 x USB 3.0                                                                      |
| 1 x COM (RS-232/422/485)<br>Optional: 1 x RS232<br>+ 1 x RS485 2 x CAN                              | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)          | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232) +<br>1 x COM (RS-232/422/485)          | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232) +<br>1 x COM (RS-232/422/485)          | 1 x COM (RS-232/422/485)<br>Optional: 2 x COM (RS-232)<br>+ 1 x COM (RS-232/422/485)          |
| 1 x DisplayPort                                                                                     | 2 x DisplayPort                                                                               | 2 x DisplayPort                                                                               | 2 x DisplayPort                                                                               | 2 x DisplayPort                                                                               |
| Intel® HD Graphics                                                                                  | Intel® HD Graphics                                                                            | Intel® HD Graphics 4400                                                                       | Intel® HD Graphics 4400                                                                       | Intel® HD Graphics 530                                                                        |
| 2 x (10/100/1000 Mbps), RJ45                                                                        |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| Intel® I210                                                                                         |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| –                                                                                                   | 1 x PCI or 1 x PCIe                                                                           | 1 x PCI or 1 x PCIe                                                                           | 1 x PCI or 1 x PCIe                                                                           | 1 x PCI or 1 x PCIe                                                                           |
| –                                                                                                   | 175 mm x 100 mm x 15 mm                                                                       | 175 mm x 100 mm x 15 mm                                                                       | 175 mm x 100 mm x 15 mm                                                                       | 175 mm x 100 mm x 15 mm                                                                       |
| Windows® Embedded Standard 7/Windows® 7 Professional/Windows® 7 Ultimate/Windows® 10 IoT Enterprise |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| Passive                                                                                             | Passive                                                                                       | Passive                                                                                       | Passive                                                                                       | Active                                                                                        |
| Front installation                                                                                  |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| 408 x 275 x 100/<br>465 x 313 x 102/532 x 354 x 99<br>6.3/8.1/10.4                                  | 408 x 275 x 121/465 x 313 x 123/532 x 354 x 119<br>8.6/10.4/12.7                              |                                                                                               |                                                                                               |                                                                                               |
| 24 V DC ±20 %                                                                                       |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| Depends on the configuration                                                                        |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| Operation with HDD:<br>0°C ... +45°C<br>With SSD: 0°C ... +50°C<br>Storage: -25°C ... +70°C         | Operation with HDD:<br>0°C ... +45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C | Operation with HDD:<br>0°C ... +45°C<br>With SSD: -10°C ... +50°C<br>Storage: -40°C ... +70°C | Operation with HDD:<br>0°C ... +45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C | Operation with HDD:<br>0°C ... +45°C<br>With SSD: -20°C ... +50°C<br>Storage: -40°C ... +70°C |
| 20 % ... 85 % (non-condensing)                                                                      | 5 % ... 95 % (non-condensing)                                                                 | 5 % ... 95 % (non-condensing)                                                                 | 5 % ... 95 % (non-condensing)                                                                 | 5 % ... 95 % (non-condensing)                                                                 |
| IP65/IP30                                                                                           |                                                                                               |                                                                                               |                                                                                               |                                                                                               |
| UL, cUL, Class 1 Div 2,<br>NEMA 4                                                                   | UL, cUL, Class 1 Div 2,<br>NEMA 4                                                             | UL, cUL, Class 1 Div 2,<br>NEMA 4                                                             | UL, cUL, Class 1 Div 2,<br>NEMA 4                                                             | In preparation: UL, cUL,<br>Class 1 Div 2                                                     |

## Panel PCs in IP65 for low and high performance requirements

|                                             |                                                                                                     |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |                    |  |  |
| <b>Designation</b>                          | <b>DL PPC15 1000</b>                                                                                | <b>DL PPC15M 1000</b>                                                              | <b>DL PPC15M 7000</b>                                                               |
| <b>Order number</b>                         | <b>2701665</b>                                                                                      | <b>2701666</b>                                                                     | <b>2400017</b>                                                                      |
| Touch technology                            | Analog resistive, single-touch control                                                              | Projective capacitive, two-touch control                                           | Projective capacitive, two-touch control                                            |
| Display size                                | 38.1 cm/15"                                                                                         |                                                                                    |                                                                                     |
| Display type                                | TFT/LED (white)                                                                                     |                                                                                    |                                                                                     |
| Colors                                      | 16.2 million                                                                                        |                                                                                    |                                                                                     |
| Resolution (W x H in pixels)                | 1024 x 768 (XGA)                                                                                    |                                                                                    |                                                                                     |
| Brightness (in cd/m²)                       | 400                                                                                                 |                                                                                    |                                                                                     |
| Reading angle (vertical/horizontal)         | 160°/160°                                                                                           |                                                                                    |                                                                                     |
| Backlight (MTTF in h)                       | > 50,000                                                                                            |                                                                                    |                                                                                     |
| Processor                                   | Intel® Atom™ E680T 1.6 GHz                                                                          | Intel® Atom™ E680T 1.6 GHz                                                         | Intel® Core™ i7-4650U 3.30 GHz                                                      |
| RAM (configurable)                          | Max. 2 GB DDR2                                                                                      | Max. 2 GB DDR2                                                                     | Max. 12 GB DDR3                                                                     |
| Data memory (configurable)                  | HDD or SSD                                                                                          |                                                                                    |                                                                                     |
| Number of drives                            | 1                                                                                                   |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                                   |                                                                                    |                                                                                     |
| USB                                         | 5 x USB 2.0                                                                                         | 5 x USB 2.0                                                                        | 4 x USB 2.0, 1 x USB 3.0                                                            |
| Serial interfaces                           | 1 x COM (RS-232/422/485)                                                                            |                                                                                    |                                                                                     |
| Video out                                   | –                                                                                                   |                                                                                    |                                                                                     |
| Graphics processor                          | Integrated                                                                                          | Integrated                                                                         | Intel® HD Graphics 5000                                                             |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                        |                                                                                    |                                                                                     |
| LAN chipset                                 | Intel® 82574IT                                                                                      | Intel® 82574IT                                                                     | Intel® I210                                                                         |
| PCI/PCIe slots (configurable)               | –                                                                                                   |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                                   |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7/Windows® 7 Professional/Windows® 7 Ultimate/Windows® 10 IoT Enterprise |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                                             |                                                                                    |                                                                                     |
| Mounting type                               | VESA MIS-D, 100                                                                                     |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 375 x 315 x 60                                                                                      |                                                                                    |                                                                                     |
| Weight (in kg)                              | 4.4                                                                                                 |                                                                                    |                                                                                     |
| Power supply                                | 24 V DC (9 V DC ... 32 V DC)                                                                        |                                                                                    |                                                                                     |
| Maximum power consumption                   | 31.44 W at 24 V                                                                                     | 31.44 W at 24 V                                                                    | 46.3 W at 19.2 V                                                                    |
| Temperature range                           | Operation with HDD: 0°C ... +45°C / With SSD: -20°C ... +55°C<br>Storage: -40°C ... +70°C           |                                                                                    | SSD -20°C ... +45°C<br>Storage: -40°C ... +70°C                                     |
| Relative humidity                           | 5 % ... 95 % (non-condensing)                                                                       |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65                                                                                                |                                                                                    |                                                                                     |
| Approvals                                   | UL, cUL                                                                                             |                                                                                    |                                                                                     |

|                                             |                                                                                                         |                                                                                    | Tablet PCs                                                                          |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |                        |  |  |
| <b>Designation</b>                          | <b>DL PPC18.5M 7000</b>                                                                                 | <b>DL PP21.5M 7000</b>                                                             | <b>ITC 8113</b>                                                                     |
| <b>Order number</b>                         | <b>2400015</b>                                                                                          | <b>2400016</b>                                                                     | <b>2403738</b>                                                                      |
| Touch technology                            | Projective capacitive, ten-touch control                                                                |                                                                                    | Projective capacitive, ten-touch control                                            |
| Display size                                | 47 cm/18.5"                                                                                             | 54.6 cm / 21.5"                                                                    | 33.8 cm / 13.3"                                                                     |
| Display type                                | TFT/LED (white)                                                                                         |                                                                                    | TFT/LED (white)                                                                     |
| Colors                                      | 16.2 million                                                                                            |                                                                                    | 16.2 million                                                                        |
| Resolution (W x H in pixels)                | 1366 x 768 (WXGA)                                                                                       | 1920 x 1080 (FHD)                                                                  | 1920 x 1080 (FHD)                                                                   |
| Brightness (in cd/m²)                       | 400                                                                                                     |                                                                                    | 400                                                                                 |
| Reading angle (vertical/horizontal)         | 160°/160°                                                                                               |                                                                                    | 160°/160°                                                                           |
| Backlight (MTTF in h)                       | > 50,000                                                                                                |                                                                                    | > 50,000                                                                            |
| Processor                                   | Intel® Core™ i7-4650U 3.30 GHz                                                                          |                                                                                    | Intel® Celeron™ 2980U 1.6 GHz<br>Intel® Core™ i5-4300U 1.9 GHz                      |
| RAM (configurable)                          | Max.12 GB DDR3                                                                                          |                                                                                    | Max. 8 GB DDR3                                                                      |
| Data memory (configurable)                  | HDD or SSD                                                                                              |                                                                                    | SSD                                                                                 |
| Number of drives                            | 1                                                                                                       |                                                                                    | 1                                                                                   |
| RAID support (configurable)                 | –                                                                                                       |                                                                                    | –                                                                                   |
| USB                                         | 4 x USB 2.0, 1 x USB 3.0                                                                                |                                                                                    | 2 x USB 3.0, 1 x USB 3.0 insert                                                     |
| Serial interfaces                           | 1 x COM (RS-232/422/485)                                                                                |                                                                                    | –                                                                                   |
| Video out                                   | –                                                                                                       |                                                                                    | –                                                                                   |
| Graphics processor                          | Intel® HD Graphics 5000                                                                                 |                                                                                    | Intel® HD Graphics                                                                  |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                                            |                                                                                    | 1 x (10/100/1000 Mbps), RJ45                                                        |
| LAN chipset                                 | Intel® I210                                                                                             |                                                                                    | Intel® I218                                                                         |
| PCI/PCIe slots (configurable)               | –                                                                                                       |                                                                                    | –                                                                                   |
| Maximum card size (PCI/PCIe)                | –                                                                                                       |                                                                                    | –                                                                                   |
| Operating systems (configurable)            | Windows® Embedded Standard 7/Windows® 7 Professional/<br>Windows® 7 Ultimate/Windows® 10 IoT Enterprise |                                                                                    | Windows® Embedded Standard 7<br>Windows® 7 Ultimate<br>Windows® 10 IoT Enterprise   |
| Cooling                                     | Passive                                                                                                 |                                                                                    | Active                                                                              |
| Mounting type                               | VESA MIS-D, 100                                                                                         |                                                                                    | –                                                                                   |
| Dimensions (W x H x D in mm)                | 534 x 355 x 60                                                                                          |                                                                                    | 356 x 262 x 42                                                                      |
| Weight (in kg)                              | 5.7                                                                                                     | 7.6                                                                                | 1.8                                                                                 |
| Power supply                                | 24 V DC (9 V DC ... 32 V DC)                                                                            |                                                                                    | 20 V/3,5 A extern                                                                   |
| Maximum power consumption                   | 49.9 W at 19.2 V                                                                                        | 51.8 W at 19.2 V                                                                   | –                                                                                   |
| Temperature range                           | Operation with HDD: 0°C ... +45°C / With SSD: -20°C ... +45°C<br>Storage: -40°C ... +70°C               |                                                                                    | 0°C ... +40°C                                                                       |
| Relative humidity                           | 5 % ... 95 % (non-condensing)                                                                           |                                                                                    | 10 % ... 85 % (non-condensing)                                                      |
| Degree of protection (front side/rear side) | IP65                                                                                                    |                                                                                    | IP65/IP53                                                                           |
| Approvals                                   | UL, cUL                                                                                                 |                                                                                    | UL, cUL                                                                             |

## Monitors with analog resistive touchscreen

|                                             |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |
| <b>Designation</b>                          | <b>VL FPM 12</b>                                                                  | <b>VL FPM 15</b>                                                                   | <b>VL FPM 17</b>                                                                    |
| <b>Order number</b>                         | <b>2913015</b>                                                                    | <b>2913017</b>                                                                     | <b>2913019</b>                                                                      |
| Touch technology                            | Analog resistive                                                                  |                                                                                    |                                                                                     |
| Display size                                | 30.7 cm/12.1"                                                                     | 38.1 cm/15"                                                                        | 43.2 cm/17"                                                                         |
| Display type                                | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| Colors                                      | 16.7 million                                                                      |                                                                                    |                                                                                     |
| Resolution (W x H in pixels)                | 800 x 600 (SVGA)                                                                  | 1024 x 768 (XGA)                                                                   | 1280 x 1024 (SXGA)                                                                  |
| Brightness (in cd/m²)                       | 400                                                                               | 350                                                                                | 350                                                                                 |
| Reading angle (vertical/horizontal)         | 140°/120°                                                                         | 170°/160°                                                                          | 170°/160°                                                                           |
| Backlight (MTTF in h)                       | > 50,000                                                                          |                                                                                    |                                                                                     |
| USB                                         | 1 x USB 1.1, 1 x USB 2.0                                                          |                                                                                    |                                                                                     |
| With front-USB                              | VL FPM 12U<br>2913016                                                             | VL FPM 15U<br>2913018                                                              | VL FPM 17U<br>2913020                                                               |
| Video out                                   | 1 x VGA<br>1 x DVI-D                                                              |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 365 x 282 x 92                                                                    | 452 x 356,5 x 97                                                                   | 452 x 356,5 x 97                                                                    |
| Weight (in kg)                              | 4.47                                                                              | 6.43                                                                               | 6.43                                                                                |
| Power supply                                | 24 V DC ±20 %                                                                     |                                                                                    |                                                                                     |
| Maximum power consumption                   | 25.12 W at 19.2 V                                                                 | 25.12 W at 19.2 V                                                                  | 37.25 W at 19.2 V                                                                   |
| Temperature range                           | Operation 0°C ... +50°C<br>Transport -40°C ... +70°C                              |                                                                                    |                                                                                     |
| Relative humidity                           | 5 % ... 95 % (non-condensing)                                                     |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP20                                                                         |                                                                                    |                                                                                     |
| Approvals                                   | —                                                                                 |                                                                                    |                                                                                     |

| Monitors with projective capacitive touchscreen                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>VL FPM 19U</b>                                                                 | <b>BL FPM 15.6</b>                                                                | <b>BL FPM 18.5</b>                                                                 | <b>BL FPM 21.5</b>                                                                  |
| <b>2913021</b>                                                                    | <b>2402980</b>                                                                    | <b>2402981</b>                                                                     | <b>2400515</b>                                                                      |
| Analog resistive                                                                  | Projective capacitive, ten-touch control                                          |                                                                                    |                                                                                     |
| 48.3 cm/19"                                                                       | 39.6 cm / 15.6"                                                                   | 46.9 cm / 18.5"                                                                    | 54.6 cm / 21.5"                                                                     |
| TFT/LED (white)                                                                   | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| 16.7 million                                                                      | 16.7 million                                                                      |                                                                                    |                                                                                     |
| 1280 × 1024 (SXGA)                                                                | 1366 × 768 (WXGA)                                                                 | 1366 × 768 (WXGA)                                                                  | 1920 × 1080 (Full HD)                                                               |
| 300                                                                               | 300                                                                               |                                                                                    |                                                                                     |
| 178°/178°                                                                         | 170°/160°                                                                         |                                                                                    |                                                                                     |
| > 50,000                                                                          | > 50,000                                                                          |                                                                                    |                                                                                     |
| 1 × USB 1.1, 1 × USB 2.0<br>1 × USB on the front                                  | —                                                                                 |                                                                                    |                                                                                     |
| —                                                                                 | —                                                                                 |                                                                                    |                                                                                     |
| 1 × VGA<br>1 × DVI-D                                                              | 1 × DisplayPort<br>1 × DVI-D<br>1 × VGA                                           |                                                                                    |                                                                                     |
| Front installation                                                                | Front installation / VESA MIS-D, 100                                              |                                                                                    |                                                                                     |
| 489 × 406 × 95                                                                    | 417 × 312 × 52                                                                    | 491 × 321 × 51                                                                     | 562 × 382 × 51                                                                      |
| 9.51                                                                              | 5.48                                                                              | 6.24                                                                               | 7.87                                                                                |
| 24 V DC ±20 %                                                                     | 24 V DC (12 V DC ... 24 V DC)                                                     |                                                                                    |                                                                                     |
| 41.28 W at 19.2 V                                                                 | 14.2 W at 24 V                                                                    | 17.8 W at 24 V                                                                     | 21.6 W at 24 V                                                                      |
| Operation: 0°C ... +50°C<br>Transport -40°C ... +70°C                             | Operation: -10°C ... +60°C<br>Storage: -20°C ... +75°C                            |                                                                                    |                                                                                     |
| 5 % ... 95 % (non-condensing)                                                     | 10 % ... 90 % (non-condensing)                                                    |                                                                                    |                                                                                     |
| IP65/IP20                                                                         | IP65/IP20                                                                         |                                                                                    |                                                                                     |
| —                                                                                 | UL, cUL                                                                           |                                                                                    |                                                                                     |

## HMI for outdoor applications

### Outdoor touch panels with GFG touch technology

The outdoor touch panels with new processor generation and Glass-Film-Glass touchscreens offer power and robustness for demanding applications. Operate and monitor your system in any environment, thanks to the C1D2 certification for extreme application conditions.

Web panels are inexpensive operator panels for basic operation and monitoring tasks. Your advantages:

- Display can be read in direct sunlight
- Resistant to UV and IR radiation
- Expanded temperature range
- Resistant to environmental influences, such as salt spray, termites and chemicals, due to IP67 degree of protection
- Can be operated when wearing work gloves

|                                                         |                                                                                    |                 |                                                         |                    |                    |                    |
|---------------------------------------------------------|------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|--------------------|--------------------|--------------------|
| <b>Model view</b>                                       |  |                 |                                                         |                    |                    |                    |
| <b>Designation</b>                                      | <b>WP 06T/WT</b>                                                                   | <b>WP07T/WT</b> | <b>TP 3043W/WT</b>                                      | <b>TP 3057V/WT</b> | <b>TP 3070W/WT</b> | <b>TP 3121S/WT</b> |
| Display                                                 | 14.48 cm (5.7")                                                                    | 17.78 cm (7")   | 10.92 cm (4.3")                                         | 14.48 (5.7")       | 17.78 cm (7")      | 30.73 (12.1")      |
| Colors                                                  | 65,536                                                                             | 65,536          | 262,144                                                 | 262,144            | 16,77 Mio.         | 262,144            |
| Resolution (W x H in pixels)                            | 320 x 240 QVGA                                                                     | 800 x 480 WVGA  | 480 x 272 WQVGA                                         | 640 x 480 VGA      | 800 x 480 WVGA     | 800x600 SVGA       |
| Brightness (in cd/m²)                                   | 400                                                                                | 350             | 385                                                     | 400                | 350                | 360                |
| Reading angle (vertical/horizontal)                     | 135°/150°                                                                          | 130°/140°       | 138°/150°                                               | 107°/130°          | 120°/140°          | 140°/160°          |
| Backlight (MTTF in h)                                   | 40000                                                                              | 40000           | 40000                                                   | 40000              | 50000              | 50000              |
| Touch technology                                        | GFG, analog resistive, anti-reflective coating                                     |                 | GFG, analog resistive, anti-reflective coating          |                    |                    |                    |
| Processor                                               | ARM9 CPU, 184 MHz                                                                  |                 | ARM® Cortex®-A8, 1000 MHz                               |                    |                    |                    |
| Temperature range                                       | Operation: -20°C ... +70°C<br>Storage: -30°C ... +80°C                             |                 | Operation: -20°C ... +70°C<br>Storage: -30°C ... +80°C  |                    |                    |                    |
| Degree of protection (front/back)                       | IP67/IP20                                                                          |                 | IP67/IP20                                               |                    |                    |                    |
| Front panel dimensions (W x H x D in mm)                | 195 x 153 x 5                                                                      | 234 x 174 x 5   | 131 x 171 x 5                                           | 153 x 195 x 5      | 174 x 234 x 5      | 280 x 359 x 5      |
| Installation depth (in mm) including fieldbus interface | 42<br>—                                                                            | 42<br>—         | 42<br>68                                                | 42<br>68           | 48<br>77           | 58<br>58           |
| Mounting cutout (W x H in mm)                           | 161 x 119                                                                          | 200 x 140       | 95 x 135                                                | 119 x 161          | 140 x 200          | 244 x 323          |
| Weight (in kg)                                          | 0.75                                                                               | 1               | 0.55                                                    | 0.8                | 1.1                | 2.7                |
| Typical power consumption                               | 4.8 W at 24 V                                                                      | 7.2 W at 24 V   | 4.8 W at 24 V                                           | 12 W at 24 V       | 9.6 W at 24 V      | 12 W at 24 V       |
| Approvals                                               | UL/cUL                                                                             |                 | UL/cUL, Class1 Div2                                     |                    |                    |                    |
|                                                         | <b>General technical data</b>                                                      |                 | <b>General technical data</b>                           |                    |                    |                    |
| Display type                                            | TFT/LED (white)                                                                    |                 | TFT/LED (white)                                         |                    |                    |                    |
| Memory                                                  | 32 MB Flash, 64 MB SDRAM, 512 KB SRAM with battery-backup                          |                 | 1 GB NAND flash, 512 MB LPDDR SDRAM, 1 MB SRAM          |                    |                    |                    |
| Interfaces                                              | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0                                         |                 | 1 x Ethernet 10/100 Mbps, 2 x USB Host 2.0              |                    |                    |                    |
| Serial interfaces (optional)                            | —                                                                                  |                 | 1x RS-232, 1x RS422/RS-485 (electrically isolated)      |                    |                    |                    |
| Fieldbus interfaces (optional)                          | —                                                                                  |                 | 2 x CAN (electrically isolated)                         |                    |                    |                    |
| Operating system                                        | MS Windows® CE 5.0                                                                 |                 | MS Windows® Embedded Compact 7                          |                    |                    |                    |
| Relative humidity                                       | For operation and storage: 20 % to 85 %, non-condensing                            |                 | For operation and storage: 20 % to 85 %, non-condensing |                    |                    |                    |
| Installation type                                       | Portrait/landscape                                                                 |                 | Portrait/landscape                                      |                    |                    |                    |
| Mounting type                                           | Installation in front panel                                                        |                 | Installation in front panel                             |                    |                    |                    |
| Power supply                                            | 24 V DC ±20 %                                                                      |                 | 24 V DC ±20 %                                           |                    |                    |                    |

## Touch panels with GFG touch technology

| Designation | Resolution | Visu+                   | Basic model |
|-------------|------------|-------------------------|-------------|
| TP 3043W/WT | 800 x 480  | <a href="#">2404286</a> | TPE043SGB   |
| TP 3057V/WT | 800 x 480  | <a href="#">2403464</a> | TPE057SGV   |
| TP 3070W/WT | 800 x 600  | <a href="#">2403465</a> | TPG070SGW   |
| TP 3121S/WT | 800 x 600  | <a href="#">2403466</a> | TPG121SGS   |

## Touch panels with GFG touch technology

| Designation | Resolution | WebVisit                | Basic model |
|-------------|------------|-------------------------|-------------|
| WVP06t/WT   | 320 x 240  | <a href="#">2400163</a> | TPE057AGQ   |
| WVP07T/WT   | 800 x 480  | <a href="#">2400164</a> | TPE070AGW   |

## Panel PCs for outdoor applications

|                                             |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |
| <b>Designation</b>                          | <b>EL PPC5.7 1000/WT</b>                                                          | <b>EL PPC7 1000/WT</b>                                                             | <b>EL PPC12 1000/WT</b>                                                             |
| <b>Order number</b>                         | <b>2401696</b>                                                                    | <b>2400065</b>                                                                     | <b>2400066</b>                                                                      |
| Touch technology                            | Analog resistive (GFG)                                                            |                                                                                    |                                                                                     |
| Display size                                | 14.5 cm/5.7"                                                                      | 17.8 cm/7"                                                                         | 30.73 cm/12.1"                                                                      |
| Display type                                | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| Colors                                      | 262144                                                                            |                                                                                    |                                                                                     |
| Resolution (W x H in pixels)                | 640 x 480 (VGA)                                                                   | 800 x 400 (WVGA)                                                                   | 800 x 600 (SVGA)                                                                    |
| Brightness (in cd/m²)                       | 400                                                                               | 350                                                                                | 360                                                                                 |
| Reading angle (vertical/horizontal)         | 130°/130°/110°/110°                                                               | 140°/140°/130°/130°                                                                | 160°/160°/130°/150°                                                                 |
| Backlight (MTTF in h)                       | > 40,000                                                                          | > 50,000                                                                           | > 50,000                                                                            |
| Processor                                   | Intel® Atom™ E680T 1.6 GHz                                                        |                                                                                    |                                                                                     |
| RAM (configurable)                          | 2 GB DDR2 800                                                                     |                                                                                    |                                                                                     |
| Data memory (configurable)                  | 64 GB SATA DOM-SSD (MLC)                                                          | SATA DOM-SSD                                                                       | SATA DOM-SSD                                                                        |
| Number of drives                            | –                                                                                 |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                 |                                                                                    |                                                                                     |
| USB                                         | 4 x USB 2.0                                                                       |                                                                                    |                                                                                     |
| Serial interfaces                           | –                                                                                 | Optional: 1 x COM (RS-232),<br>1 x COM (RS-485)                                    | Optional: 1 x COM (RS-232),<br>1 x COM (RS-485)                                     |
| Video out                                   | –                                                                                 |                                                                                    |                                                                                     |
| Graphics processor                          | –                                                                                 |                                                                                    |                                                                                     |
| Ethernet interfaces                         | 1 x (10/100/1000 MBit/s), RJ45                                                    |                                                                                    |                                                                                     |
| LAN chipset                                 | Mikrel® KSZ9021RN                                                                 |                                                                                    |                                                                                     |
| PCI/PCIe slots (configurable)               | –                                                                                 |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                 |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7                                                      |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                           |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 195 x 153 x 64                                                                    | 234 x 174 x 81                                                                     | 359 x 180 x 92                                                                      |
| Weight (in kg)                              | 0.8                                                                               | 1.1                                                                                | 2.4                                                                                 |
| Power supply                                | 24 V DC ±20 %                                                                     |                                                                                    |                                                                                     |
| Type of power consumption                   | 14.4 W at 24 V                                                                    | 12 W at 24 V                                                                       | 24 W at 24 V                                                                        |
| Temperature range                           | Operation: -20°C ... +60°C<br>Storage: -30°C ... +80°C                            |                                                                                    |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                    |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP67/IP20                                                                         |                                                                                    |                                                                                     |
| Approvals                                   | –                                                                                 | UL, cUL, NEMA 4X                                                                   | UL, cUL, NEMA 4X                                                                    |

|                                             |                                                                                   |
|---------------------------------------------|-----------------------------------------------------------------------------------|
|                                             |  |
| <b>Designation</b>                          | <b>EL PPC15 1000/WT</b>                                                           |
| <b>Order number</b>                         | <b>2400067</b>                                                                    |
| Touch technology                            | Analog resistive (GFG)                                                            |
| Display size                                | 38.1 cm/15"                                                                       |
| Display type                                | TFT/LED (white)                                                                   |
| Colors                                      | 262144                                                                            |
| Resolution (W x H in pixels)                | 1024 x 768 (XGA)                                                                  |
| Brightness (in cd/m²)                       | 480                                                                               |
| Reading angle (vertical/horizontal)         | 160°/160°/120°/160°                                                               |
| Backlight (MTTF in h)                       | > 50,000                                                                          |
| Processor                                   | Intel® Atom™ E680T 1.6 GHz                                                        |
| RAM (configurable)                          | 2 GB DDR2 800                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD                                                                      |
| Number of drives                            | –                                                                                 |
| RAID support (configurable)                 | –                                                                                 |
| USB                                         | 4 x USB 2.0                                                                       |
| Serial interfaces                           | Optional: 1 x COM (RS-232), 1 x COM (RS-485)                                      |
| Video out                                   | –                                                                                 |
| Graphics processor                          | –                                                                                 |
| Ethernet interfaces                         | 1 x (10/100/1000 Mbps), RJ45                                                      |
| LAN chipset                                 | Mikrel® KSZ9021RN                                                                 |
| PCI/PCIe slots (configurable)               | –                                                                                 |
| Maximum card size (PCI/PCIe)                | –                                                                                 |
| Operating systems (configurable)            | Windows® Embedded Standard 7                                                      |
| Cooling                                     | Passive                                                                           |
| Mounting type                               | Front installation                                                                |
| Dimensions (W x H x D in mm)                | 416 x 325 x 92                                                                    |
| Weight (in kg)                              | 3.7                                                                               |
| Power supply                                | 24 V DC ±20 %                                                                     |
| Type of power consumption                   | 19.2 W at 24 V                                                                    |
| Temperature range                           | Operation: -20°C ... +60°C<br>Storage: -30°C ... +80°C                            |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                    |
| Degree of protection (front side/rear side) | IP67/IP20                                                                         |
| Approvals                                   | UL, cUL, NEMA 4X                                                                  |

## HMIs for maritime applications

### Maritime touch panels with black front, dimming and polyester touch technology

The powerful HMIs from the TPM 3000 series are designed for demanding applications onboard ships. New display sizes and a wide range of functions provide you with user-friendly and reliable operation, monitoring and alerting while at sea. Your advantages:

- Light-absorbing front panels
- Dimmable backlight

- Certifications in accordance with ABS, BV, DNV-GL, LR, RINA
- Certified compass safe distance in accordance with DIN EN 60945
- Acoustic warning from integrated horn
- All common communication standards supported
- Floating output
- Display formats in 4:3 or 16:9

|                                                            |                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model view                                                 |                                                         |  |  |  |
| Designation                                                | TPM 3043                                                                                                                                 | TPM 3057                                                                          | TPM 3070                                                                            | TPM 3090                                                                            |
| Order number                                               | 2404516                                                                                                                                  | 2404517                                                                           | 2404518                                                                             | 2404519                                                                             |
| Display                                                    | 10.92 cm<br>(4.3")                                                                                                                       | 14.48<br>(5.7")                                                                   | 17.78<br>(7")                                                                       | 22.68<br>(9")                                                                       |
| Colors                                                     | 262,144                                                                                                                                  |                                                                                   |                                                                                     |                                                                                     |
| Resolution<br>(W x H in pixels)                            | 480 x 272 WQVGA                                                                                                                          | 640 x 480 VGA                                                                     | 800 x 480 WVGA                                                                      | 800 x 480 WVGA                                                                      |
| Brightness (in cd/m²)                                      | 385                                                                                                                                      | 400                                                                               | 350                                                                                 | 800                                                                                 |
| Reading angle<br>(vertical/horizontal)                     | 138°/150°                                                                                                                                | 107°/130°                                                                         | 130°/140°                                                                           | 170°/170°                                                                           |
| Backlight (MTTF in h)                                      | 40000                                                                                                                                    | 40000                                                                             | 40000                                                                               | 70000                                                                               |
| Touch technology                                           | Polyester, analog resistive                                                                                                              |                                                                                   |                                                                                     |                                                                                     |
| Processor                                                  | ARM® Cortex® -A8, 1000 MHz, real-time clock (with battery backup)                                                                        |                                                                                   |                                                                                     |                                                                                     |
| Temperature range                                          | Operation: silver: 0°C ... +55°C; storage: black: -20°C ... +60°C<br>Operation: silver: -25°C ... +70°C; storage: black: -30°C ... +80°C |                                                                                   |                                                                                     |                                                                                     |
| Degree of protection<br>(front/back)                       | IP65/IP20                                                                                                                                |                                                                                   |                                                                                     |                                                                                     |
| Front panel dimensions<br>(W x H x D in mm)                | sil: 140 x 100 x 5<br>bl: 140 x 118 x 5                                                                                                  | sil: 168 x 126 x 5<br>bl: 168 x 147 x 5                                           | sil: 203 x 147 x 5<br>bl: 203 x 165 x 5                                             | 260 x 172 x 5                                                                       |
| Installation depth (in mm)<br>including fieldbus interface | sil: 42; bl: 53<br>sil: 71; bl: 79                                                                                                       | sil: 42; bl: 49<br>sil: 71; bl: 75                                                | sil: 42; bl: 42<br>sil: 71; bl: 71                                                  | 54<br>59                                                                            |
| Mounting cutout<br>(W x H in mm)                           | sil: 132 x 92<br>bl: 132 x 110                                                                                                           | sil: 160 x 118<br>bl: 160 x 139                                                   | sil: 195 x 139<br>bl: 195 x 157                                                     | 252 x 164                                                                           |
| Weight (in kg)                                             | 0.55                                                                                                                                     | 0.8                                                                               | 0.8                                                                                 | 1.3                                                                                 |
| Typical power consumption                                  | 7.2 W at 24 V                                                                                                                            | 9.6 W at 24 V                                                                     | 7.2 W at 24 V                                                                       | 19.2 W at 24 V                                                                      |
| Approvals                                                  | UL/cUL, Class1 Div2, ABS, BV, DNV-GL, LR, RINA, EN60945                                                                                  |                                                                                   |                                                                                     |                                                                                     |
|                                                            | General technical data                                                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Display type                                               | TFT/LED (white)                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |
| Memory                                                     | 1 GB Flash, 512 SDRAM, 1 MB SRAM                                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| Interfaces (configurable)                                  | 1 x RS232, 1 x RS485 / 1 x RS232, 1 x RS485, 2 x CAN / 2 x CAN                                                                           |                                                                                   |                                                                                     |                                                                                     |
| Operating system                                           | MS Windows® Embedded Compact 7                                                                                                           |                                                                                   |                                                                                     |                                                                                     |
| Software (configurable)                                    | Microbrowser, Visu+, Movicon                                                                                                             |                                                                                   |                                                                                     |                                                                                     |
| Relative humidity                                          | For operation and storage: 20 % to 85 %, non-condensing                                                                                  |                                                                                   |                                                                                     |                                                                                     |
| Installation type                                          | Portrait/landscape                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| Mounting type                                              | Installation in front panel                                                                                                              |                                                                                   |                                                                                     |                                                                                     |
| Power supply                                               | 24 V DC ±20 %                                                                                                                            |                                                                                   |                                                                                     |                                                                                     |

|                                                                                                                                          |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                         |  |  |  |  |
| <b>TPM 3105</b>                                                                                                                          | <b>TPM 3121</b>                                                                   | <b>TPM 3120</b>                                                                   | <b>TPM 3150</b>                                                                    | <b>TPM 3154</b>                                                                     |
| <b>2404520</b>                                                                                                                           | <b>2404521</b>                                                                    | <b>2404522</b>                                                                    | <b>2404524</b>                                                                     | <b>2404525</b>                                                                      |
| 26.42<br>(10.4")                                                                                                                         | 30.73<br>(12.1")                                                                  | 30.73<br>(12.1")                                                                  | 38.1<br>(15")                                                                      | 39.1<br>(15.4")                                                                     |
| 262,144                                                                                                                                  |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| 800 x 600 SVGA                                                                                                                           | 800 x 600 SVGA                                                                    | 1280 x 800 WXGA                                                                   | 1024 x 768 XGA                                                                     | 1280 x 800 WXGA                                                                     |
| 340                                                                                                                                      | 360                                                                               | 320                                                                               | 480                                                                                | 360                                                                                 |
| 110°/140°                                                                                                                                | 140°/160°                                                                         | 176°/176°                                                                         | 145°/160°                                                                          | 140°/160°                                                                           |
| 50000                                                                                                                                    |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Polyester, analog resistive                                                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| ARM® Cortex® -A8, 1000 MHz, real-time clock (with battery backup)                                                                        |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Operation: silver: 0°C ... +55°C; storage: black: -20°C ... +60°C<br>Operation: silver: -25°C ... +70°C; storage: black: -30°C ... +80°C |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| IP65/IP20                                                                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| sil: 295 x 220 x 5<br>bl: 328 x 265 x 5                                                                                                  | sil: 340 x 270 x 5<br>bl: 340 x 285 x 5                                           | sil: 330 x 225 x 5<br>bl: 336 x 252 x 5                                           | sil: 400 x 329 x 5<br>bl: 400 x 338 x 5                                            | 420 x 297 x 5                                                                       |
| sil: 54; bl: 58<br>sil: 54; bl: 58                                                                                                       | sil: 55; bl: 52<br>sil: 55 bl: 52                                                 | sil: 48; bl: 54<br>sil: 48; bl: 54                                                | sil: 55; bl: 63<br>sil: 55; bl: 63                                                 | 64<br>64                                                                            |
| sil: 287 x 212<br>bl: 302 x 237                                                                                                          | sil: 313 x 243<br>bl: 315 x 259                                                   | sil: 48; bl: 54                                                                   | sil: 372 x 301<br>bl: 373 x 312                                                    | 396 x 273                                                                           |
| 1.9                                                                                                                                      | 2.2                                                                               | 1.7                                                                               | 3                                                                                  | 3.3                                                                                 |
| 14.4 W at 24 V                                                                                                                           | 14.4 W at 24 V                                                                    | 19.2 W at 24 V                                                                    | 19.2 W at 24 V                                                                     | 21.6 W at 24 V                                                                      |
| UL/cUL, Class1 Div2, ABS, BV, DNV-GL, LR, RINA, EN60945                                                                                  |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| General technical data                                                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| TFT/LED (white)                                                                                                                          |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| 1 GB Flash, 512 SDRAM, 1 MB SRAM                                                                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| 1 x RS232, 1 x RS485 / 1 x RS232, 1 x RS485, 2 x CAN / 2 x CAN                                                                           |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| MS Windows® Embedded Compact 7                                                                                                           |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Microbrowser, Visu+, Movicon                                                                                                             |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| For operation and storage: 20 % to 85 %, non-condensing                                                                                  |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Portrait/landscape                                                                                                                       |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| Installation in front panel                                                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| 24 V DC ±20 %                                                                                                                            |                                                                                   |                                                                                   |                                                                                    |                                                                                     |

## Panel PCs for maritime applications

|                                             |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |
| <b>Designation</b>                          | <b>EL PPC7 1000/M</b>                                                             | <b>EL PPC7G 1000/M</b>                                                             | <b>EL PPC12 1000/M</b>                                                              |
| <b>Order number</b>                         | <b>2400068</b>                                                                    | <b>2400282</b>                                                                     | <b>2400069</b>                                                                      |
| Touch technology                            | Analog resistive                                                                  | Analog resistive (GFG)                                                             | Analog resistive                                                                    |
| Display size                                | 17.8 cm/7"                                                                        | 17.8 cm/7"                                                                         | 30.7 cm/12.1"                                                                       |
| Display type                                | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| Colors                                      | 262144                                                                            |                                                                                    |                                                                                     |
| Resolution (W x H in pixels)                | 800 x 480 (WVGA)                                                                  | 800 x 480 (WVGA)                                                                   | 1280 x 800 (SVGA)                                                                   |
| Brightness (in cd/m²)                       | 350                                                                               | 350                                                                                | 320                                                                                 |
| Reading angle (vertical/horizontal)         | 140°/140°/130°/130°                                                               | 140°/140°/130°/130°                                                                | 176°/176°/176°/176°                                                                 |
| Backlight (MTTF in h)                       | > 40,000                                                                          | > 40,000                                                                           | > 50,000                                                                            |
| Processor                                   | Intel® Atom™ E680T 1.6 GHz                                                        |                                                                                    |                                                                                     |
| RAM (configurable)                          | 2 GB DDR2 800                                                                     |                                                                                    |                                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD                                                                      |                                                                                    |                                                                                     |
| Number of drives                            | –                                                                                 |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                 |                                                                                    |                                                                                     |
| USB                                         | 4 x USB 2.0                                                                       |                                                                                    |                                                                                     |
| Serial interfaces                           | Optional: 1 x COM (RS-232), 1 x COM (RS-485)                                      |                                                                                    |                                                                                     |
| Video out                                   | –                                                                                 |                                                                                    |                                                                                     |
| Graphics processor                          | –                                                                                 |                                                                                    |                                                                                     |
| Ethernet interfaces                         | 2 x (10/100/1000 Mbps), RJ45                                                      |                                                                                    |                                                                                     |
| LAN chipset                                 | Realtek® 8111C PCI-E                                                              |                                                                                    |                                                                                     |
| PCI/PCIe slots (configurable)               | –                                                                                 |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                 |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7                                                      |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                           |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 203 x 165 x 87                                                                    | 234 x 189 x 72                                                                     | 336 x 252 x 87                                                                      |
| Weight (in kg)                              | 1.1                                                                               | 1.1                                                                                | 2.3                                                                                 |
| Power supply                                | 24 V DC (18 ... 30 V DC)                                                          |                                                                                    |                                                                                     |
| Type of power consumption                   | 16.8 W at 24 V                                                                    | 16.8 W at 24 V                                                                     | 21.6 W at 24 V                                                                      |
| Temperature range                           | Operation: 0°C ... +55°C<br>Storage: -25°C ... +70°C                              |                                                                                    |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                    |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP20                                                                         |                                                                                    |                                                                                     |
| Approvals                                   | ABS, BV, GL/DNV<br>LR, RINA, UL, cUL                                              |                                                                                    |                                                                                     |

|                                             |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |
| <b>Designation</b>                          | <b>EL PPC12G 1000/M</b>                                                           | <b>EL PPC15 1000/M</b>                                                             | <b>EL PPC15G 1000/M</b>                                                             |
| <b>Order number</b>                         | <b>2400283</b>                                                                    | <b>2400070</b>                                                                     | <b>2400284</b>                                                                      |
| Touch technology                            | Analog resistive (GFG)                                                            | Analog resistive                                                                   | Analog resistive (GFG)                                                              |
| Display size                                | 30.7 cm/12.1"                                                                     | 38.1 cm/15"                                                                        | 38.1 cm/15"                                                                         |
| Display type                                | TFT/LED (white)                                                                   |                                                                                    |                                                                                     |
| Colors                                      | 262144                                                                            |                                                                                    |                                                                                     |
| Resolution (W x H in pixels)                | 1280 x 800 (SVGA)                                                                 | 1024 x 768 (XGA)                                                                   | 1024 x 768 (XGA)                                                                    |
| Brightness (in cd/m²)                       | 320                                                                               | 480                                                                                | 480                                                                                 |
| Reading angle (vertical/horizontal)         | 176°/176°/176°/176°                                                               | 160°/160°/130°/160°                                                                | 160°/160°/130°/160°                                                                 |
| Backlight (MTTF in h)                       | > 50,000                                                                          |                                                                                    |                                                                                     |
| Processor                                   | Intel® Atom™ E680T 1.6 GHz                                                        |                                                                                    |                                                                                     |
| RAM (configurable)                          | 2 GB DDR2 800                                                                     |                                                                                    |                                                                                     |
| Data memory (configurable)                  | SATA DOM-SSD                                                                      |                                                                                    |                                                                                     |
| Number of drives                            | –                                                                                 |                                                                                    |                                                                                     |
| RAID support (configurable)                 | –                                                                                 |                                                                                    |                                                                                     |
| USB                                         | 4 x USB 2.0                                                                       |                                                                                    |                                                                                     |
| Serial interfaces                           | Optional: 1 x COM (RS-232), 1 x COM (RS-485)                                      |                                                                                    |                                                                                     |
| Video out                                   | –                                                                                 |                                                                                    |                                                                                     |
| Graphics processor                          | –                                                                                 |                                                                                    |                                                                                     |
| Ethernet interfaces                         | 2 x (10/100/1000 MBit/s), RJ45                                                    |                                                                                    |                                                                                     |
| LAN chipset                                 | Realtek® 8111C PCI-E                                                              |                                                                                    |                                                                                     |
| PCI/PCIe slots (configurable)               | –                                                                                 |                                                                                    |                                                                                     |
| Maximum card size (PCI/PCIe)                | –                                                                                 |                                                                                    |                                                                                     |
| Operating systems (configurable)            | Windows® Embedded Standard 7                                                      |                                                                                    |                                                                                     |
| Cooling                                     | Passive                                                                           |                                                                                    |                                                                                     |
| Mounting type                               | Front installation                                                                |                                                                                    |                                                                                     |
| Dimensions (W x H x D in mm)                | 344 x 260 x 84                                                                    | 400 x 338 x 92                                                                     | 338 x 400 x 82                                                                      |
| Weight (in kg)                              | 2.3                                                                               | 3.7                                                                                | 3.7                                                                                 |
| Power supply                                | 24 V DC (18 ... 30 V DC)                                                          |                                                                                    |                                                                                     |
| Type of power consumption                   | 24 W at 24 V                                                                      |                                                                                    |                                                                                     |
| Temperature range                           | Operation: 0°C ... +55°C<br>Storage: -25°C ... +70°C                              |                                                                                    |                                                                                     |
| Relative humidity                           | 20 % ... 85 % (non-condensing)                                                    |                                                                                    |                                                                                     |
| Degree of protection (front side/rear side) | IP65/IP20                                                                         |                                                                                    |                                                                                     |
| Approvals                                   | ABS, BV, GL/DNV<br>LR, RINA, UL, cUL                                              |                                                                                    |                                                                                     |

## Device accessories (may be product-specific)

| General          | Order No.               | Designation                  | Description                                                                                                                                                                                                 |
|------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adapter          | <a href="#">2400174</a> | DP TO DVI ADPTR              | DisplayPort to DVI-i video adapter                                                                                                                                                                          |
| Adapter          | <a href="#">2400173</a> | DP TO VGA ADPTR              | DisplayPort to VGA video adapter                                                                                                                                                                            |
| Data cable       | <a href="#">2403720</a> | DisplayPort Cable 1.8m       | 1.8 meter DisplayPort cable                                                                                                                                                                                 |
| Data cable       | <a href="#">2403719</a> | DVI Cable 1.8m               | 1.8 meter DVI cable                                                                                                                                                                                         |
| Data cable       | <a href="#">2320500</a> | IFS-USB-DATACABLE            | Used for communicating between industrial PCs and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS-IQ or TRIO UPS.                                                                 |
| Data cable       | <a href="#">1404514</a> | SI-SES-U1A/0,6               | Service socket with USB (socket/plug), type A with 0.6 m cable                                                                                                                                              |
| Energy storage   | <a href="#">2320351</a> | UPS-BAT/LI-ION/24D-C/120WH   | Energy storage device, LI-ION technology, 24 V DC, 120 Wh, for ambient temperatures of -20°C ... +58°C, automatic detection and communication with QUINT UPS-IQ.                                            |
| Energy storage   | <a href="#">2320296</a> | UPS-BAT/VRLA/24DC/1.3AH      | Energy storage device, lead AGM, VRLA technology, 24 V DC, 1.3 Ah, tool-free battery replacement, automatic detection and communication with QUINT UPS-IQ.                                                  |
| Energy storage   | <a href="#">2320306</a> | UPS-BAT/VRLA/24DC/3.4AH      | Energy storage device, lead AGM, VRLA technology, 24 V DC, 3.4 Ah, tool-free battery replacement, automatic detection and communication with QUINT UPS-IQ.                                                  |
| Assembly adapter | <a href="#">2320089</a> | UTA 107/30                   | Universal DIN rail adapter for Basicline 1000/2000                                                                                                                                                          |
| Buffer module    | <a href="#">2402832</a> | PC-PWR-FLTR-1                | The PC-PWR-FLTR-1 buffers incoming power until operating voltage is reached. For use with 24 V DC power sources with rise times above 100 ms.                                                               |
| Buffer module    | <a href="#">2402941</a> | PC-PWR-FLTR-2                | The PC-PWR-FLTR-2 buffers incoming power until operating voltage is reached. For use with 24 V DC power sources with rise times above 100 ms.                                                               |
| Software         | <a href="#">2701453</a> | VL PORTICO SERVER 1 CLIENT   | Remote network portal software for remote controlling one PC from another.                                                                                                                                  |
| Software         | <a href="#">2701456</a> | VL PORTICO SERVER 16 CLIENT  | Remote network portal software for remote controlling up to 16 client PCs from one single server.                                                                                                           |
| Software         | <a href="#">2701455</a> | VL PORTICO SERVER 4 CLIENT   | Remote network portal software for remote controlling up to four client PCs from one single server.                                                                                                         |
| Software package | <a href="#">2402618</a> | UPGRADE WIN 7 PRO SP1 X64-DE | Kit for upgrading a Windows® XP operating system to Windows® 7 Professional SP1 (64-bit German-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker.  |
| Software package | <a href="#">2400574</a> | UPGRADE WIN 7 PRO SP1 X64-EN | Kit for upgrading a Windows® XP operating system to Windows® 7 Professional SP1 (64-bit English-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker. |
| Software package | <a href="#">2402617</a> | UPGRADE WIN 7 PRO SP1 X86-DE | Kit for upgrading a Windows® XP operating system to Windows® 7 Professional SP1 (32-bit German-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker.  |
| Software package | <a href="#">2400573</a> | UPGRADE WIN 7 PRO SP1 X86-EN | Kit for upgrading a Windows® XP operating system to Windows® 7 Professional SP1 (32-bit English-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker. |
| Software package | <a href="#">2402620</a> | UPGRADE WIN 7 ULT SP1 X64    | Kit for upgrading a Windows® XP operating system to Windows® 7 Ultimate SP1 (64-bit multi-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker.       |

## Device accessories (may be product-specific)

| General                       | Order No. | Designation               | Description                                                                                                                                                                                                                                           |
|-------------------------------|-----------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software package              | 2402619   | UPGRADE WIN 7 ULT SP1 X86 | Kit for upgrading a Windows® XP operating system to Windows® 7 Ultimate SP1 (64-bit multi-language operating system). Kit includes a USB drive and Microsoft® Certificate of Authority (CoA) sticker.                                                 |
| Software package              | 2400303   | WES2009/WES7 RECOVERY USB | Operating system recovery kit for Windows® Embedded 2009 and Windows® Embedded 7 operating systems. The kit includes a USB drive.                                                                                                                     |
| Memory                        | 2701668   | 16 GB CF                  | CompactFlash® card, pluggable, 16 GB                                                                                                                                                                                                                  |
| Memory                        | 2701669   | 32 GB CF                  | CompactFlash® card, pluggable, 32 GB                                                                                                                                                                                                                  |
| Memory                        | 2400170   | IPC 16 GB CFAST KIT       | CFast® card with 16 GB                                                                                                                                                                                                                                |
| Memory                        | 2402978   | IPC 32 GB CFAST KIT       | CFast® card with 32 GB                                                                                                                                                                                                                                |
| Memory                        | 2400168   | IPC 4 GB CFAST KIT        | CFast® card with 4 GB                                                                                                                                                                                                                                 |
| Memory                        | 2400169   | IPC 8 GB CFAST KIT        | CFast® card with 8 GB                                                                                                                                                                                                                                 |
| Memory                        | 2913155   | VL 1 GB CF                | CompactFlash® card, pluggable, 1 GB                                                                                                                                                                                                                   |
| Memory                        | 2913156   | VL 2 GB CF                | CompactFlash® card, pluggable, 2GB                                                                                                                                                                                                                    |
| Memory                        | 2913157   | VL 4 GB CF                | CompactFlash® card, pluggable, 4 GB                                                                                                                                                                                                                   |
| Memory                        | 2913158   | VL 8 GB CF                | CompactFlash® card, pluggable, 8 GB                                                                                                                                                                                                                   |
| Power supply                  | 2866750   | QUINT-PS/1AC/24DC/ 5      | Primary-switched QUINT POWER supply for DIN rail mounting with SFB (selective fuse breaking) Technology, input: 1-phase, output: 24 V DC / 5 A                                                                                                        |
| Power supply, uninterruptible | 2320212   | QUINT-UPS/24DC/24DC/5     | Uninterruptible power supply with IQ Technology for DIN rail mounting, input: 24 V DC, output: 24 V DC / 5 A, including mounted universal DIN rail adapter UTA 107/30                                                                                 |
| Touch pen                     | 2701379   | TOUCH PEN                 | Touch pen for HMIs, silver-coated, delivery includes self-adhesive pen holder                                                                                                                                                                         |
| Embeddedline                  | Order No. | Designation               | Description                                                                                                                                                                                                                                           |
| PCB connector                 | 1751312   | MC 1,5/ 3-STF-3,5 BD:1-3  | Plug for Embeddedline industrial PCs, nominal current: 8 A, number of positions: 3, pitch: 3.5 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin                                                        |
| Basicline                     | Order No. | Designation               | Description                                                                                                                                                                                                                                           |
| Hard drive mounting frame     | 2400026   | BL 3000/7000 SATA TRAY    | 2.5" SATA tray kit for Basicline 3000 and 7000 industrial PCs.                                                                                                                                                                                        |
| Hard drive mounting frame     | 2403331   | BL BPC 2000 2.5" SATA BAY | 2.5" HDD/SSD mounting frame. Compatible with Basicline BPC 2000.                                                                                                                                                                                      |
| Hard drive mounting frame     | 2400423   | BL PPC 1000 SATA TR       | Installation hardware and empty drive tray ready for installation of SSD/HDD. For use with the Basicline PPC 1000.                                                                                                                                    |
| PCB connector                 | 1777992   | MSTB 2,5/ 3-STF-5,08      | Plug for Designline, Basicline and Valueline industrial PCs, nominal current: 12 A, rated voltage (III/2): 320 V, number of positions: 3, pitch: 5.08 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin |
| PCB connector                 | 1786844   | MSTB 2,5/3-STF            | Plug for industrial monitors (FPM), nominal current: 12 A, rated voltage (III/2): 320 V, number of positions: 3, pitch: 5 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin                             |

## Device accessories (may be product-specific)

| Basicline                 | Order No.               | Designation                         | Description                                                                                                                                                                                                                                           |
|---------------------------|-------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Memory                    | <a href="#">2400022</a> | BL 3000/7000 16 GB SSD KIT          | 16 GB, 2.5" SATA SSD kit with tray for Basicline 3000 and 7000 industrial PCs                                                                                                                                                                         |
| Memory                    | <a href="#">2400023</a> | BL 3000/7000 32 GB SSD KIT          | 32 GB, 2.5" SATA SSD kit with tray for Basicline 3000 and 7000 industrial PCs                                                                                                                                                                         |
| Memory                    | <a href="#">2400021</a> | BL 3000/7000 320 GB HDD KIT         | 320 GB, 2.5" SATA HDD kit with tray for Basicline 3000 and 7000 industrial PCs                                                                                                                                                                        |
| Memory                    | <a href="#">2403280</a> | BL BPC 2000 16 GB SSD KIT           | 16 GB, 2.5" SATA SSD kit with tray for Basicline BPC 2000                                                                                                                                                                                             |
| Memory                    | <a href="#">2403281</a> | BL BPC 2000 32 GB SSD KIT           | 32 GB, 2.5" SATA SSD kit with tray for Basicline BPC 2000                                                                                                                                                                                             |
| Memory                    | <a href="#">2403284</a> | BL BPC 2000 320 GB SSD KIT          | 320 GB, 2.5" SATA SSD kit with tray for Basicline BPC 2000                                                                                                                                                                                            |
| Memory                    | <a href="#">2400073</a> | BL PPC 1000 16 GB SSD KIT           | 16 GB, 2.5" SATA solid-state drive kit for Basicline PPC 1000, with mounting frame                                                                                                                                                                    |
| Memory                    | <a href="#">2400074</a> | BL PPC 1000 32 GB SSD KIT           | 32 GB, 2.5" SATA solid-state drive kit for Basicline PPC 1000, with mounting frame                                                                                                                                                                    |
| Memory                    | <a href="#">2400078</a> | BL PPC 1000 320 GB HDD KIT          | 320 GB, 2.5" SATA hard drive kit for Basicline PPC 1000, with mounting frame                                                                                                                                                                          |
| Memory                    | <a href="#">2403286</a> | BL PPC 1000 THERMAL PAD KIT         | Thermal transfer pad replacement, compatible with Basicline PPC 1000                                                                                                                                                                                  |
| Valueline                 | Order No.               | Designation                         | Description                                                                                                                                                                                                                                           |
| Cover                     | <a href="#">2400277</a> | SILICONE USB COVER KIT              | USB end cover replacement for Valueline industrial PCs                                                                                                                                                                                                |
| Cover                     | <a href="#">2403293</a> | VL2 PCI COVER                       | PCI slot cover                                                                                                                                                                                                                                        |
| Hard drive mounting frame | <a href="#">2913185</a> | HDD TRAY KIT                        | Hard drive mounting frame for Valueline industrial PCs                                                                                                                                                                                                |
| PCB connector             | <a href="#">1777992</a> | MSTB 2,5/ 3-STF-5,08                | Plug for Designline, Basicline and Valueline industrial PCs, nominal current: 12 A, rated voltage (III/2): 320 V, number of positions: 3, pitch: 5.08 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin |
| PCB connector             | <a href="#">1786844</a> | MSTB 2,5/3-STF                      | Plug for industrial monitors (FPM), nominal current: 12 A, rated voltage (III/2): 320 V, number of positions: 3, pitch: 5 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin                             |
| Mounting kit              | <a href="#">2913160</a> | VL BOOKSHELF MOUNTING KIT           | Mounting kit, Valueline industrial PC, without PCI expansion slots, for bookshelf mounting                                                                                                                                                            |
| Mounting kit              | <a href="#">2913164</a> | VL BOOKSHELF MOUNTING KIT/EXPANSION | Mounting kit, Valueline industrial PC, with PCI expansion slots for bookshelf mounting                                                                                                                                                                |
| Mounting kit              | <a href="#">2913159</a> | VL PANEL MOUNTING KIT               | Mounting kit, Valueline industrial PC, for installation on a front panel                                                                                                                                                                              |
| Mounting kit              | <a href="#">2701177</a> | VL PANEL+ MOUNTING KIT              | Mounting kit, Valueline industrial PC. For use with 15- and 17-inch displays to accommodate thicker panels, including the required hardware.                                                                                                          |
| Mounting kit              | <a href="#">2913161</a> | VL WALL MOUNTING KIT                | Mounting kit, Valueline industrial PC, for wall mounting                                                                                                                                                                                              |
| Mounting panel            | <a href="#">2701716</a> | VL PPC12 19" RACKMOUNT PLATE        | Mounting panel for the installation of Basicline and Valueline 12" PPC products and 12" FPM products through standard PPC mounting in a 19" rack                                                                                                      |
| Mounting panel            | <a href="#">2701715</a> | VL PPC15 19" RACKMOUNT PLATE        | Mounting panel for the installation of Basicline and Valueline 15" PPC products and 15" FPM products through standard PPC mounting in a 19" rack                                                                                                      |
| Mounting panel            | <a href="#">2701714</a> | VL PPC17 19" RACKMOUNT PLATE        | Mounting panel for the installation of Basicline and Valueline 17" PPC products and 17" FPM products through standard PPC mounting in a 19" rack                                                                                                      |

## Device accessories (may be product-specific)

| Valueline                 | Order No. | Designation                    | Description                                                                                                                                                                                                                                           |
|---------------------------|-----------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective foil           | 2913165   | VL 15" DISPLAY PROTECTIVE FOIL | Protective foils for 15" touchscreen (10-pack)                                                                                                                                                                                                        |
| Memory                    | 2913199   | VL 16 GB SSD (SLC) KIT         | 16 GB, 2.5" SATA solid-state drive (SLC) kit for Valueline industrial PC, with mounting frame                                                                                                                                                         |
| Memory                    | 2913200   | VL 32 GB SSD (SLC) KIT         | 32 GB, 2.5" SATA solid-state drive (SLC) kit for Valueline industrial PC, with mounting frame                                                                                                                                                         |
| Memory                    | 2701111   | VL 320 GB HDD KIT              | 320 GB, 2.5" SATA HDD kit (SLC) for Valueline industrial PC, with mounting frame                                                                                                                                                                      |
| Memory                    | 2400337   | VL2 16 GB SLC SSD SATA KIT     | 16 GB, 2.5" SATA SSD kit with tray for VL2... industrial PPC and BPC products                                                                                                                                                                         |
| Memory                    | 2400338   | VL2 32 GB SLC SSD SATA KIT     | 32 GB, 2.5" SATA SSD kit with tray for VL2... industrial PPC and BPC products                                                                                                                                                                         |
| Memory                    | 2400341   | VL2 320 GB HDD SATA KIT        | 320 GB, 2.5" SATA SSD kit with tray for VL2... industrial PPC and BPC products                                                                                                                                                                        |
| Memory                    | 2400335   | VL2 4 GB SLC SSD SATA KIT      | 4 GB, 2.5" SATA SSD kit with tray for VL2... industrial PPC and BPC products                                                                                                                                                                          |
| Memory                    | 2400336   | VL2 8 GB SLC SSD SATA KIT      | 8 GB, 2.5" SATA SSD kit with tray for VL2... industrial PPC and BPC products                                                                                                                                                                          |
| Designline                | Order No. | Designation                    | Description                                                                                                                                                                                                                                           |
| Hard drive mounting frame | 2400033   | DL HDD/SSD TRAY KIT            | 2.5" SATA kit for Designline industrial PC                                                                                                                                                                                                            |
| Bracket                   | 2400014   | DL ADAPTER PLATE VESA75-100    | Mounting panel for Designline for conversion from VESA 75 to VESA 100. VESA 100 hole size includes keyholes for easy mounting. Color: RAL 7035 (light gray).                                                                                          |
| Bracket                   | 2400013   | DL WALL MOUNT                  | Wall bracket for Designline. Hole size: VESA 100 with keyholes for easy mounting. Color: RAL 7035 (light gray). Length: 218 mm                                                                                                                        |
| PCB connector             | 1777992   | MSTB 2,5/ 3-STF-5,08           | Plug for Designline, Basicline and Valueline industrial PCs, nominal current: 12 A, rated voltage (III/2): 320 V, number of positions: 3, pitch: 5.08 mm, connection method: screw connection with tension sleeve, color: green, contact surface: tin |
| Assembly adapter          | 2402681   | DL 15 RITTAL ADAPTER           | The DL...RITTAL ADAPTER attaches to a Designline industrial PC and enables seamless integration with a Rittal CP40 or CP60 series support arm.                                                                                                        |
| Assembly adapter          | 2402682   | DL 18.5 RITTAL ADAPTER         | The DL...RITTAL ADAPTER attaches to a Designline industrial PC and enables seamless integration with a Rittal CP40 or CP60 series support arm.                                                                                                        |
| Assembly adapter          | 2402683   | DL 21.5 RITTAL ADAPTER         | The DL...RITTAL ADAPTER attaches to a Designline industrial PC and enables seamless integration with a Rittal CP40 or CP60 series support arm.                                                                                                        |
| Mounting kit              | 2403285   | DL CABLE ENTRY GASKET KIT      | Cable gasket set for Designline industrial PC                                                                                                                                                                                                         |
| Mounting kit              | 2403344   | DL PPC15 USB door top          | Replacement USB cover including screws for Designline PPC15 1000                                                                                                                                                                                      |
| Memory                    | 2400029   | DL 16 GB SSD KIT               | 16 GB, 2.5" SATA SSD kit with tray for Designline industrial PC                                                                                                                                                                                       |
| Memory                    | 2400030   | DL 32 GB SSD KIT               | 32 GB, 2.5" SATA SSD kit with tray for Designline industrial PC                                                                                                                                                                                       |
| Memory                    | 2400028   | DL 320 GB HDD KIT              | 320 GB, 2.5" SATA HDD kit with tray for Designline industrial PC                                                                                                                                                                                      |

## Device accessories (may be product-specific)

| Tablet PCs     | Order No. | Designation                   | Description                                                                                                                                                                             |
|----------------|-----------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Energy storage | 2403082   | ITC 8113 RECHARGEABLE BATTERY | Battery for ITC 8113 xxx with 4 cells and charge level indicator                                                                                                                        |
| Bracket        | 2403313   | ITC 8113 PORTREPLICATOR       | Rotatable/tiltable port replicator (without lock) for ITC 8113 xxx with 1x Ethernet (10/100/1000 Mbps), RJ45 and 4x USB 2.0.                                                            |
| Charger        | 2403081   | ITC 8113 CHARGING STATION     | Charging station for simultaneous charging of two batteries. LEDs indicate the charging state of each charging unit; insertion/removal of a battery is indicated by an acoustic signal. |
| Power supply   | 2403083   | ITC 8113 POWER SUPPLY         | Power supply unit for ITC 8113 xxx, charging station, and port replicator                                                                                                               |
| Handle         | 2403314   | ITC 8113 HANDLE               | Handle for the ITC 8113, incl. 2 screws                                                                                                                                                 |
| Strap          | 2404751   | ITC 8113 CARRYING STRAP       |                                                                                                                                                                                         |
| Transport box  | 2404752   | ITC 8113 TRANSPORT CASE       |                                                                                                                                                                                         |

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