

ESSENTIAL edition

Phoenix Contact New Zealand

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Redundancy modules



Redundancy modules

A redundancy module is used to decouple two power supplies and ensures the high availability and productivity of your system. A redundant power supply is particularly necessary in applications with stringent demands regarding operational safety. A redundant system ensures that the failure of one power supply unit does not result in system downtime.

Product range overview

Redundancy modules ESSENTIAL edition

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Safe decoupling



When the ESSENTIAL edition redundancy modules are used, two power supplies can be decoupled from each other for 100% redundancy. This enables a high degree of operational safety.



Increased performance

The redundancy modules are the ideal choice for an easy and reliable increase in performance of power supplies of the same type that are connected in parallel.



Comprehensive signaling

The redundancy modules offer comprehensive status signaling. DC-OK LEDs and floating switching contacts enable consistent state monitoring.

Your advantages:

- ✓ Worldwide use with international approval package
- ✓ High flexibility with a wide range input from 10 V DC ... 60 V DC
- ✓ Extensive monitoring with channel-specific status LEDs and floating switching contacts
- ✓ Extremely attractive costs

Redundancy modules ESSENTIAL edition



When the ESSENTIAL edition redundancy modules are used, two power supplies can be decoupled from each other for 100% redundancy. This enables a high degree of operational safety.

ESSENTIAL DIODE, Screw connection, 12 V DC ... 48 V DC, 2x 10 A DC, 1x 20 A DC



| Technical data | |
|---------------------|--|
| Approvals |   CB |
| Input voltage range | 10 V DC ... 60 V DC |
| Output current | 20 A |
| Type of decoupling | passive |
| Width | 40 mm |
| Height | 124 mm |
| Depth | 126 mm |

| Type | Item No. | Pcs./Pkt. |
|--------------------------------|----------|-----------|
| PS-EE-2G-DIODE/12-48DC/2X10/SC | 1584245 | 1 |

ESSENTIAL DIODE, Screw connection, 12 V DC ... 48 V DC, 2x 20 A DC, 1x 40 A DC



| Technical data | |
|---------------------|--|
| Approvals |   CB |
| Input voltage range | 10 V DC ... 60 V DC |
| Output current | 40 A |
| Type of decoupling | passive |
| Width | 40 mm |
| Height | 124 mm |
| Depth | 126 mm |

| Type | Item No. | Pcs./Pkt. |
|--------------------------------|----------|-----------|
| PS-EE-2G-DIODE/12-48DC/2X20/SC | 1584246 | 1 |

Power supplies



Power supplies

Phoenix Contact offers a broad portfolio of power supplies for various applications. With a wide range of performance classes and functions to choose from, you will find the ideal industrial solution for machine building, the semiconductor industry, or control cabinet building, for example.

Product range overview

Power supplies ESSENTIAL edition

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Reliable supply



The power supplies in the ESSENTIAL edition family are the ideal choice for supplying your system reliably using basic functions. They meet essential industry standards and also offer additional features at an attractive price. These include an international approval package, wide temperature range, and flexible wide range input. ESSENTIAL edition is therefore ideally suited for worldwide use.



Vibration and shock resistance

The robust design of the mechanical and electrical components tolerates sustained vibrations of up to 2.3g in resonance and shocks of up to 15g for 15 ms.



Self-protecting

Various protective mechanisms ensure comprehensive device protection at all times. Internal protective circuits take effect in the event of an overvoltage, overcurrent, or excessively high temperature. The device protects itself from any harm.

Your advantages:

- ✓ Worldwide application, thanks to the wide range input and international approval package
- ✓ Immunity to voltage dips at the output with the SEMI-F47 standard
- ✓ Greater availability, thanks to fan-free convection cooling



For universal use

Thanks to the international approval package and wide range input, the power supplies can be used worldwide.



Fanless convection cooling

The ESSENTIAL edition power supplies feature a fanless convection cooling system. This provides greater availability for your application.



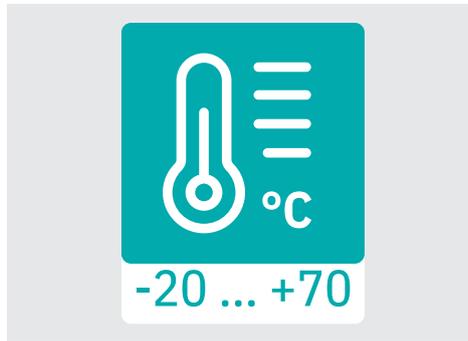
Fast installation

The preinstalled DIN rail adapter enables quick and easy installation of the device on the DIN rail.



Optimally coordinated

The ESSENTIAL edition power supplies harmonize perfectly with the surge protection from the same family. Their combination further increases device protection, service life, and system availability.



Wide temperature range

The ESSENTIAL edition power supplies have a wide temperature range from 20°C to +70°C. Combined with built-in temperature monitoring, this ensures reliable use even in adverse temperature conditions.



Transformer standard

The installed transformers conform to the safety standard of the IEC 61558-2-16 transformer standard, which eliminates the need for an additional safety transformer.

Power supplies ESSENTIAL edition



The power supplies in the ESSENTIAL edition family are the ideal choice for supplying your system reliably. They meet essential industry standards and also offer additional features at an attractive price. These include an international approval package, wide temperature range, and flexible wide range input. ESSENTIAL edition is therefore ideally suited for worldwide use.

ESSENTIAL POWER, 1-phase, Screw connection, 24 V DC, 2,5 A, 60 W



| Technical data | |
|----------------------|---|
| Approvals | BIS Licence Document |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC |
| Output current | max. 2.5 A |
| Nominal power | 60 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 33 mm |
| Height | 90 mm |
| Depth | 100 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PS-EE-2G/1AC/24DC/60W/SC | 1394764 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 24 V DC, 3,125 A, 75 W



| Technical data | |
|--------------------------|---|
| Approvals | BIS Licence Document |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC |
| Output current (IN_PMax) | max. 3.125 A (P _N = 75 W) |
| Nominal power | 75 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 33 mm |
| Height | 90 mm |
| Depth | 100 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PS-EE-2G/1AC/24DC/75W/SC | 1234301 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 12 V DC, 6,25 A, 75 W



| Technical data | |
|--------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 12 V DC ... 15 V DC (> 12 V DC, constant capacity restricted) |
| Output voltage | 12 V DC |
| Output current (IN_PMax) | max. 6.25 A (P _N = 75 W) |
| Nominal power | 75 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 33 mm |
| Height | 90 mm |
| Depth | 100 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PS-EE-2G/1AC/12DC/75W/SC | 1585280 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 48 V DC, 2,5 A, 120 W



| Technical data | |
|--------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 48 V DC ... 57 V DC (> 48 V DC, constant capacity restricted) |
| Output voltage | 48 V DC |
| Output current (IN_PMax) | max. 2.5 A (PN = 120 W) |
| Nominal power | 120 W (240 V AC) |
| Connection method | Screw connection |
| Degree of protection | IP20 |
| Width | 40 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|---------------------------|-------------------------|-----------|
| PS-EE-2G/1AC/48DC/120W/SC | 1585285 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 24 V DC, 5 A, 120 W



| Technical data | |
|--------------------------|---|
| Approvals | BIS Licence Document |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC |
| Output current (IN_PMax) | max. 5 A (PN = 120 W) |
| Nominal power | 120 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 40 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|---------------------------|-------------------------|-----------|
| PS-EE-2G/1AC/24DC/120W/SC | 1234302 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 12 V DC, 10 A, 120 W



| Technical data | |
|--------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 12 V DC ... 15 V DC (> 12 V DC, constant capacity restricted) |
| Output voltage | 12 V DC |
| Output current (IN_PMax) | max. 10 A (PN = 120 W) |
| Nominal power | 120 W (240 V AC) |
| Connection method | Screw connection |
| Degree of protection | IP20 |
| Width | 40 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|---------------------------|-------------------------|-----------|
| PS-EE-2G/1AC/12DC/120W/SC | 1585283 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 48 V DC, 5 A, 240 W



| Technical data | |
|--------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 48 V DC ... 57 V DC (> 48 V DC, constant capacity restricted) |
| Output voltage | 48 V DC |
| Output current (IN_PMax) | max. 5 A (PN = 240 W) |
| Nominal power | 240 W (240 V AC) |
| Connection method | Screw connection |
| Degree of protection | IP20 |
| Width | 60 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |

| Type | Item No. | Pcs./Pkt. |
|---------------------------|-------------------------|-----------|
| PS-EE-2G/1AC/48DC/240W/SC | 1585286 | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 24 V DC, 10 A, 240 W



| Technical data | |
|---------------------------|---|
| Approvals | BIS Licence Document |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC |
| Output current (IN_PMax) | max. 10 A (PN = 240 W) |
| Nominal power | 240 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 60 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |
| Type | Item No. |
| PS-EE-2G/1AC/24DC/240W/SC | 1234304 |
| | Pcs./Pkt. |
| | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 12 V DC, 20 A, 240 W



| Technical data | |
|---------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 12 V DC ... 15 V DC (> 12 V DC, constant capacity restricted) |
| Output voltage | 12 V DC |
| Output current (IN_PMax) | max. 20 A (PN = 240 W) |
| Nominal power | 240 W (240 V AC) |
| Connection method | Screw connection |
| Degree of protection | IP20 |
| Width | 60 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |
| Type | Item No. |
| PS-EE-2G/1AC/12DC/240W/SC | 1585284 |
| | Pcs./Pkt. |
| | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 48 V DC, 10 A, 480 W



| Technical data | |
|---------------------------|---|
| Approvals | |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 48 V DC ... 57 V DC (> 48 V DC, constant capacity restricted) |
| Output voltage | 48 V DC |
| Output current (IN_PMax) | max. 10 A (PN = 480 W) |
| Nominal power | 480 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 86 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |
| Type | Item No. |
| PS-EE-2G/1AC/48DC/480W/SC | 1585287 |
| | Pcs./Pkt. |
| | 1 |

ESSENTIAL POWER, 1-phase, Screw connection, 24 V DC, 20 A, 480 W



| Technical data | |
|---------------------------|---|
| Approvals | BIS Licence Document |
| Input voltage range | 85 V AC ... 264 V AC |
| Output voltage range | 24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC |
| Output current (IN_PMax) | max. 20 A (PN = 480 W) |
| Nominal power | 480 W (240 V AC) |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 86 mm |
| Height | 124 mm |
| Depth | 125 mm |
| Number of phases | 1 |
| Type | Item No. |
| PS-EE-2G/1AC/24DC/480W/SC | 1234308 |
| | Pcs./Pkt. |
| | 1 |

ESSENTIAL POWER, 3-phase, Screw connection, 24 V DC, 10 A, 240 W



| Technical data | |
|---------------------------------|---|
| Approvals | CB |
| Input voltage range | 3x 320 V AC ... 575 V AC |
| Output voltage range | 22.5 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC ±1 % |
| Output current | 10 A (U _{OUT} = 24 V DC) |
| Nominal power (P _N) | 240 W |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 60 mm |
| Height | 130 mm |
| Depth | 152.5 mm |
| Number of phases | 3 |

| Type | Item No. | Pcs./Pkt. |
|-------------------------------|----------|-----------|
| ESSENTIAL-PS/3AC/24DC/240W/EE | 1018291 | 1 |

ESSENTIAL POWER, 3-phase, Screw connection, 24 V DC, 20 A, 480 W



| Technical data | |
|---------------------------------|---|
| Approvals | CB |
| Input voltage range | 3x 320 V AC ... 575 V AC |
| Output voltage range | 22.5 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC ±1 % |
| Output current | 20 A (U _{OUT} = 24 V DC) |
| Nominal power (P _N) | 480 W |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 115 mm |
| Height | 130 mm |
| Depth | 152.5 mm |
| Number of phases | 3 |

| Type | Item No. | Pcs./Pkt. |
|-------------------------------|----------|-----------|
| ESSENTIAL-PS/3AC/24DC/480W/EE | 1018299 | 1 |

ESSENTIAL POWER, 3-phase, Screw connection, 24 V DC, 40 A, 960 W



| Technical data | |
|---------------------------------|---|
| Approvals | CB |
| Input voltage range | 3x 320 V AC ... 575 V AC |
| Output voltage range | 22.5 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted) |
| Output voltage | 24 V DC ±1 % |
| Output current | 40 A (U _{OUT} = 24 V DC) |
| Nominal power (P _N) | 960 W |
| Connection method | Screw connection |
| Protective coating | no |
| Degree of protection | IP20 |
| Width | 139 mm |
| Height | 130 mm |
| Depth | 190 mm |
| Number of phases | 3 |

| Type | Item No. | Pcs./Pkt. |
|-------------------------------|----------|-----------|
| ESSENTIAL-PS/3AC/24DC/960W/EE | 1018294 | 1 |

Surge protection and lightning protection



Surge protection and lightning protection

Lightning currents and surge voltages can cause damage to devices and components. In the worst case, the entire system may even fail. Downtimes and repairs further lead to high costs. Businesses in every industry require a high degree of system availability. With individualized solutions for requirements in a wide variety of applications, reliable surge protection by Phoenix Contact makes a significant contribution.

Product range overview

Surge protection for power supply ESSENTIAL edition **19**

Powerful and durable



The surge protective devices are subjected to a large number of tests and examinations during their development phase in the in-house, certified pulse and high-current laboratory.

A special feature of this laboratory is a powerful power supply system that can be coupled with a surge current generator. Thus, an environment is created in which surge protective devices can be tested intensively under challenging conditions.



Basic research

The foundation for a high-quality product is basic research and technological development. New technologies and materials for surge protection are developed and made usable with specific targets in mind.



Development and production

In a dialog between development and production, components and materials are harmonized to create a robust, reliable and powerful product. It is ensured that the high requirements on a reliable and effective protective device are satisfied at all times.



Quality tests

Standardized quality tests are performed throughout production and thus guarantee products of the highest levels of quality and safety.



Combined protective devices, type 1+2

SP-EE-FLT is suitable for universal use in TN and TT networks and meets the requirements of lightning protection levels III and IV. The encapsulated spark gap, which is free of leakage current and line follow current, limits lightning-related voltage peaks and switching overvoltages to the level of overvoltage category II. It can therefore be used in the unmetred area.



Surge protective devices, type 2

The devices are usually installed in sub-distributions or control cabinets. These devices must be able to discharge induced surge voltages from direct lightning strikes or switching operations, but do not have to handle direct lightning currents. In any case, induced surge voltages caused by switching operations are very dynamic and fast response behavior is required.



Device protection, type 3

The surge protective devices are generally installed immediately upstream of the end devices to be protected. PLT-EE provides optimal protection for single-phase industrial power supplies in various nominal voltage ranges.



Availability

Surge protection by Phoenix Contact plays a major role in assuring a high level of system availability in the widest range of applications.



Signal protection for MCR technology

Surge protection for measurement and control technology includes versions that can be used for many fields of application. The benefits of these devices include their proven and cost-optimized functionality as well as their compact and therefore space-saving design with a pitch of just 6 mm.

Surge protection for the power supply ESSENTIAL edition



From feed-in to the end device, we offer you the right surge protection for a multi-level protection concept. The ESSENTIAL edition product family includes combined type 1+2 surge protective devices, type 2 surge protective devices, and type 3 device protection.

Lightning/surge arrester type 1/2, TN-C, 12,5 kA, 3L-PEN



| Technical data | |
|---|-----------------|
| Fault warning | optical |
| Nominal discharge current I_n | 12.5 kA |
| Nominal voltage | 240 V AC (TN-C) |
| Supply system configuration | TN-C |
| Lightning impulse current (without reference direction) | 12.5 kA |

| Type | Item No. | Pcs./Pkt. |
|-------------------------|----------|-----------|
| VAL-MS-EE-T1/T2-3+0-335 | 2910555 | 1 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------------|----------|-----------|
| Replacement plug, L-N, L-PEN, 335 V AC | VAL-MS-EE-T1/T2-335-P | 2910556 | 10 |

Lightning/surge arrester type 1/2, TT, TN-S, 12,5 kA, 1L-N & N-PE, Remote indication contact



| Common technical data | |
|----------------------------------|----------------------------------|
| Nominal discharge current I_n | 12.5 kA |
| Nominal voltage | 240 V AC (TN-S) 240 V AC (TT) |
| Supply system configuration | TT TN-S |
| Lightning impulse current (L-N) | 12.5 kA |
| Lightning impulse current (L-PE) | 12.5 kA |
| Lightning impulse current (N-PE) | 50 kA |

| Fault warning | Type | Item No. | Pcs./Pkt. |
|-----------------------------------|----------------------------|----------|-----------|
| Optical, remote indicator contact | VAL-MS-EE-T1/T2-1+1-335-FM | 2910552 | 1 |
| optical | VAL-MS-EE-T1/T2-1+1-335 | 2910553 | 1 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------------|----------|-----------|
| Replacement plug, L-N, L-PEN, 335 V AC | VAL-MS-EE-T1/T2-335-P | 2910556 | 10 |
| Replacement plug, N-PE, 264 V AC | F-MS-EE-T1/T2-50-P | 2910557 | 10 |

Lightning/surge arrester type 1/2, TT, TN-S, 12,5 kA, 3L-N & N-PE, Remote indication contact



| Common technical data | |
|----------------------------------|----------------------------------|
| Nominal discharge current I_n | 12.5 kA |
| Nominal voltage | 240 V AC (TN-S) 240 V AC (TT) |
| Supply system configuration | TT TN-S |
| Lightning impulse current (L-N) | 12.5 kA |
| Lightning impulse current (L-PE) | 12.5 kA |
| Lightning impulse current (N-PE) | 50 kA |

| Fault warning | Type | Item No. | Pcs./Pkt. |
|-----------------------------------|----------------------------|----------|-----------|
| Optical, remote indicator contact | VAL-MS-EE-T1/T2-3+1-335-FM | 2910550 | 1 |
| optical | VAL-MS-EE-T1/T2-3+1-335 | 2910551 | 1 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------------|----------|-----------|
| Replacement plug, L-N, L-PEN, 335 V AC | VAL-MS-EE-T1/T2-335-P | 2910556 | 10 |
| Replacement plug, N-PE, 264 V AC | F-MS-EE-T1/T2-50-P | 2910557 | 10 |

Type 2 surge arrester, TN-S, TT, 3L-N & N-PE



| Common technical data | |
|------------------------------------|----------------------------------|
| Supply system configuration | TN-S TT |
| Nominal voltage | 240 V AC (TN-S) 240 V AC (TT) |
| Nominal discharge current I_n | 20 kA |
| Maximum continuous voltage (L - N) | 385 V AC |
| Maximum continuous voltage (N-PE) | 260 V AC |
| Voltage protection level (L - N) | ≤ 1.8 kV |
| Voltage protection level (N-PE) | ≤ 1.5 kV |
| Max. backup fuse | 125 A (gG) 80 A (gG) |

| Fault warning | Number of positions | Type | Item No. | Pcs./Pkt. |
|-----------------------------------|---------------------|-------------------------|----------|-----------|
| Optical, remote indicator contact | 4 | VAL-MS-EE-T2-3+1-385-FM | 2910558 | 1 |

Type 2 surge arrester, TN-S, TT, 3L-N & N-PE



| Common technical data | |
|------------------------------------|----------------------------------|
| Supply system configuration | TN-S TT |
| Nominal voltage | 240 V AC (TN-S) 240 V AC (TT) |
| Nominal discharge current I_n | 20 kA |
| Maximum continuous voltage (L - N) | 335 V AC |
| Maximum continuous voltage (N-PE) | 260 V AC |
| Voltage protection level (N-PE) | ≤ 1.5 kV |
| Max. backup fuse | 125 A (gG) 80 A (gG) |

| Fault warning | Voltage protection level (L - N) | Number of positions | Type | Item No. | Pcs./Pkt. |
|-----------------------------------|----------------------------------|---------------------|-------------------------|----------|-----------|
| Optical, remote indicator contact | ≤ 1.6 kV | 4 | VAL-MS-EE-T2-3+1-320-FM | 2910574 | 1 |
| optical | ≤ 1.6 kV | 4 | VAL-MS-EE-T2-3+1-320 | 2910575 | 1 |
| Optical, remote indicator contact | ≤ 1.5 kV | 2 | VAL-MS-EE-T2-1+1-320-FM | 1185339 | 1 |
| optical | ≤ 1.5 kV | 2 | VAL-MS-EE-T2-1+1-320 | 1185337 | 1 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|--------------------|----------|-----------|
| Replacement plug, L-PEN, L-N, 335 V AC | VAL-MS-EE-T2-320-P | 2910579 | 10 |

Type 3 surge protection device, TN-S, V, Remote indication contact



| Technical data | |
|--|-----------------------------------|
| Supply system configuration | TN-S |
| Nominal voltage | 24 V AC |
| Fault warning | Optical, remote indicator contact |
| Nominal discharge current I_n | 1 kA |
| Combined surge (without reference direction) | 2 kV |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| PLT-EE-T3-24DC-R | 1249054 | 5 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|------------------|------------------|----------|-----------|
| Replacement plug | PLT-EE-T3-24DC-P | 1249053 | 10 |
| Base element | PLT-EE-T3-BE-R | 1249061 | 10 |

Type 3 surge protection device, TN-S, V, Remote indication contact



| Technical data | |
|--|-----------------------------------|
| Supply system configuration | TN-S |
| Nominal voltage | 60 V AC |
| Fault warning | Optical, remote indicator contact |
| Nominal discharge current I_n | 2 kA |
| Combined surge (without reference direction) | 4 kV |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| PLT-EE-T3-60AC-R | 1249056 | 5 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|------------------|--|------------------|----------|-----------|
| Replacement plug | | PLT-EE-T3-60AC-P | 1249055 | 10 |
| Base element | | PLT-EE-T3-BE-R | 1249061 | 10 |

Type 3 surge protection device, TN-S, TT, V, Remote indication contact



| Technical data | |
|--|-----------------------------------|
| Supply system configuration | TN-S TT |
| Nominal voltage | 120 V AC 120 V AC |
| Fault warning | Optical, remote indicator contact |
| Nominal discharge current I_n | 3 kA |
| Combined surge (without reference direction) | 6 kV |

| Type | Item No. | Pcs./Pkt. |
|-------------------|----------|-----------|
| PLT-EE-T3-120AC-R | 1249058 | 5 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|------------------|--|-------------------|----------|-----------|
| Replacement plug | | PLT-EE-T3-120AC-P | 1249057 | 10 |
| Base element | | PLT-EE-T3-BE-R | 1249061 | 10 |

Type 3 surge protection device, TN-S, TT, V, Remote indication contact

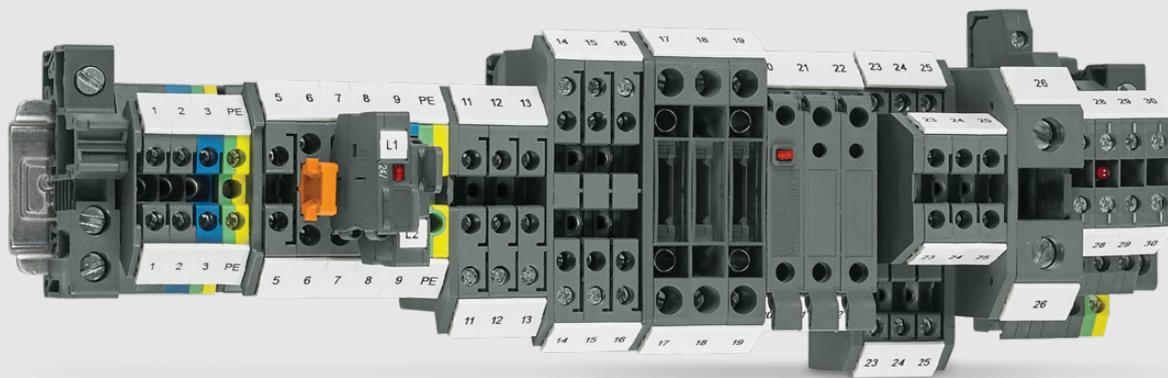


| Technical data | |
|--|-----------------------------------|
| Supply system configuration | TN-S TT |
| Nominal voltage | 240 V AC 240 V AC |
| Fault warning | Optical, remote indicator contact |
| Nominal discharge current I_n | 3 kA |
| Combined surge (without reference direction) | 6 kV |

| Type | Item No. | Pcs./Pkt. |
|-------------------|----------|-----------|
| PLT-EE-T3-230AC-R | 1249060 | 5 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|------------------|--|-------------------|----------|-----------|
| Replacement plug | | PLT-EE-T3-230AC-P | 1249059 | 10 |
| Base element | | PLT-EE-T3-BE-R | 1249061 | 10 |

Terminal blocks



Terminal blocks

Screw connections are still the dominant method in industrial connection technology. No other connection technology can achieve such high contact forces in the tightest of spaces. With the modular structure and comprehensive range of accessories, tailor-made solutions can be configured for every application.

Product range overview

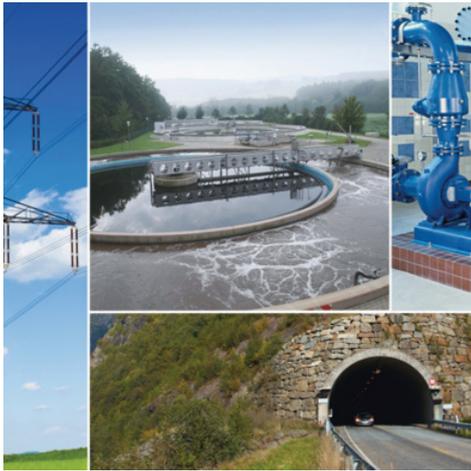
| | |
|--|-----------|
| Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks | 38 |
| Sensor terminal blocks and actuator terminal blocks | 50 |
| Fuse terminal blocks, component terminal blocks, and diode terminal blocks | 52 |
| Plug-in terminal blocks | 54 |
| Disconnect and knife-disconnect terminal blocks | 55 |

Quality in every application



With the comprehensive product range, the terminal blocks are ideal components for applications in a wide range of industrial fields. Numerous quality tests have proven that even under harsh conditions, the TB terminal blocks transmit signals and distribute energy reliably and safely.

Infrastructure



Measuring devices can be looped in quickly and easily with knife disconnect terminal blocks to check the system during startup and maintenance. The terminal blocks with disconnect zone, which are the same shape, also allow component connectors or fuse plugs to be used to protect the signals.
Corrosion test:
DIN 50018

Power engineering



The TB series is ideal for the energy supply sector with its individual and easily configurable measuring transducer sets for all current transformer and voltage transducer applications.
Touch protection:
IEC 60529 /DIN EN 50274

Wind power



When it comes to the modular structure of wind turbine generators, the TB terminal blocks with connector help prevent wiring errors and save time.
Vibration test:
IEC 60068-2-6

Machine building



The amount of wiring effort and space required when connecting sensors and actuators can be reduced considerably with the TBIO. Temporary high currents, e.g., when starting up electric motors, present no problem for the TB terminal blocks.
Short-time withstand current:
IEC 60947-7-1/-2

Signal technology



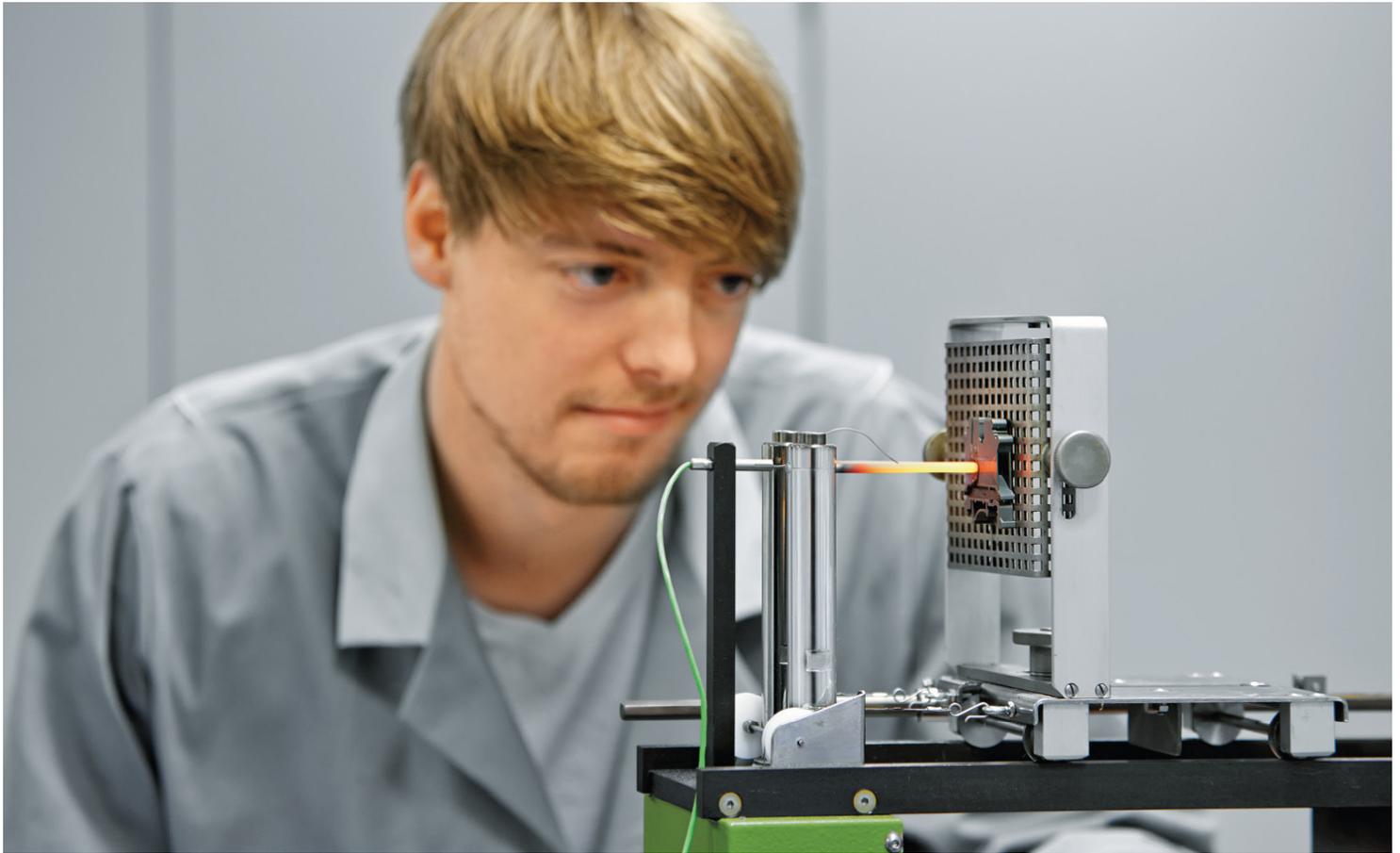
Signals can be transmitted safely in a confined space with the compact double-level terminal blocks. Thanks to the use of modern materials, the TB terminal blocks are also ideal for use in challenging environments, such as atmospheres containing salt or at temperatures as low as -60°C.
Salt spray:
IEC 60068-2-11/-52

Photovoltaics



Conductors with a larger cross section are used for the connection between SCBs and inverters due to the higher currents and longer cable lengths. TB terminal blocks can accommodate conductors up to a cross section of 240 mm².
Conductor pull-out test:
IEC 60947-7-1/-2

Quality tests



Reliable connections - that is our everyday motto. The quality of our products is the key. This is not tested subsequently on finished products, but is ensured responsibly during every step of production. TB terminal blocks represent compact, high-performance electrical connections. High-quality physical properties and advanced industrial standards are evidenced by connections with long-term stability. This high quality is demonstrated by recognized tests which are documented in national and international standards.

Test sequence for terminal blocks in accordance with IEC 60947-7-1/2

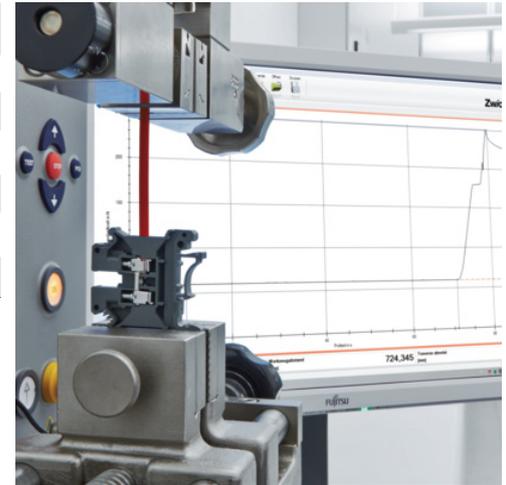
- Connection capacity
- Mechanical strength
- Bending test – flexion test
- Conductor pull-out test
- Modular terminal block fixed securely
- Air clearances and creepage distances
- Impulse withstand voltage test
- Voltage drop test
- Temperature-rise test
- Short-time current resistance
- Dielectric test
- Aging test
- Needle flame test

Conductor pull-out test

IEC 60947-7-1/-2

In practice, tensile forces can affect the terminal point during wiring or operation. Correctly wired terminal blocks must therefore offer a high degree of mechanical safety. To test the tensile load capacity of a terminal point, the terminal point must withstand a given tensile force based on the cross section for over 60 seconds. This test is performed after the flexion test. Performing these two tests directly one after the other intensifies the requirements. The tensile force exerts stress on the conductor at the terminal point. The conductor must be held without causing damage. The TB screw terminal blocks withstand tensile forces up to 100% above the required minimum values.

| Conductor cross-section | | Tractive force |
|-------------------------|-------------|----------------|
| [mm ²] | AWG / kcmil | [N] |
| 0.2 | 24 | 10 |
| | ... | |
| 4 | 12 | 60 |
| | ... | |
| 240 | 500 | 578 |



Absorption of tensile force at a 6 mm² screw terminal block

Short-time current resistance

IEC 60947-7-1/-2

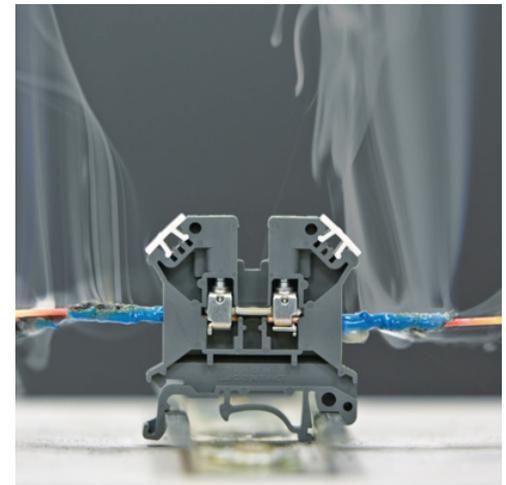
Terminal blocks must, in practice, also be capable of resisting short-circuit currents until the relevant safety equipment cuts off the current without sustaining any damage. This can take up to several tenths of a second.

For testing purposes, a terminal block is mounted on the support and wired to a conductor with the rated cross section. Protective conductor terminal blocks are subjected in three stages of one second each to a current density of 120 A/mm² with the rated cross section.

The requirements are met if, after the test, the individual parts are undamaged and they can still be used.

Before and after the test, the terminal block must pass the voltage drop test. The voltage drop before and after the test must not exceed 3.2 mV per terminal block and also must not exceed 1.5 times the value measured before the test.

In the case of the TB 240 I high-current terminal block, a test current of 28,800 A is passed through the terminal block for one second without loss of quality.



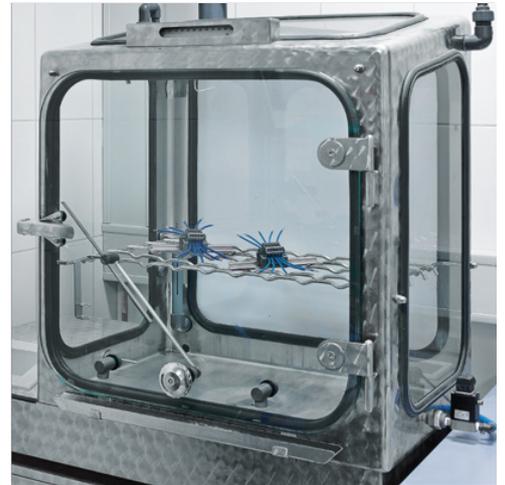
Maximum contact reliability, even under extreme overload.

Corrosion test

DIN 50018

The key role of the metal parts of electrical connections becomes particularly apparent in aggressive environments. Corrosion-free contact areas are a prerequisite for low-resistance and therefore high-performance connections. This test method describes a corrosion test in condensation climates with an atmosphere that contains sulfur dioxide. Acidic compounds $< \text{pH } 7$ form during the test and attack the metal surfaces. Two liters of distilled water and one liter of SO_2 gas are introduced into the test chamber. Sulfurous acid forms at a testing temperature of 40°C during the course of the test.

After eight hours of testing, the test objects are left to dry for 16 hours with the door open. At the end of the test, the test objects are visually inspected, and the contact resistance is measured in order to show the influence of this corrosion test on the contact point in more detail. The TB series from Phoenix Contact creates high-quality, gas-tight connections that cannot be impaired even by corrosive substances.



Aging test IEC

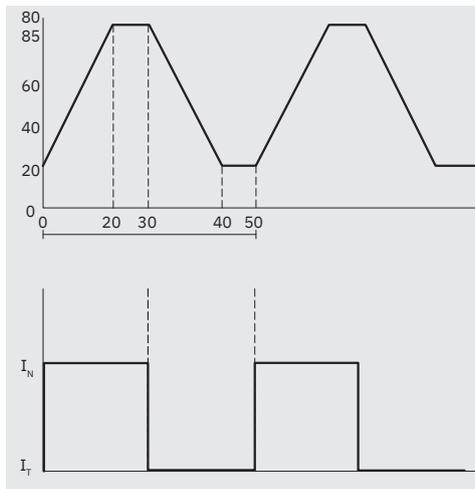
60947-7-1/-2

From the point of view of long lifecycles of the terminal blocks, the aging behavior also plays an important role.

In this test, the contact quality is verified by means of simulated aging.

To simulate several years of use, five terminal blocks are mounted horizontally on a rail and connected in series using conductors with the rated cross section. Conductors with a minimum length of 300 mm are connected and the voltage drop is measured at every terminal block. The minimum temperature in the climate cabinet is set to 20°C and the maximum temperature to 85°C. During the heating phase and the 10-minute pause phase with maximum temperature, the rated current flows. As a result, the maximum permissible operating temperature of the test object (max. 130°C) is reached. The cooling down phase follows. The voltage drop is always measured after 24 cycles in the cooled down state (approximately 20°C). The test consists of a total of 192 cycles. The voltage drop must not exceed 3.2 mV initially. During or after testing, it must not exceed 4.8 mV or 1.5 times the value measured after the 24th cycle.

TB terminal blocks are designed for extreme durability even under difficult temperature conditions. Plastic as well as metal parts provide sufficient safety reserves.



Current and temperature in relation to time t_T



Salt spray

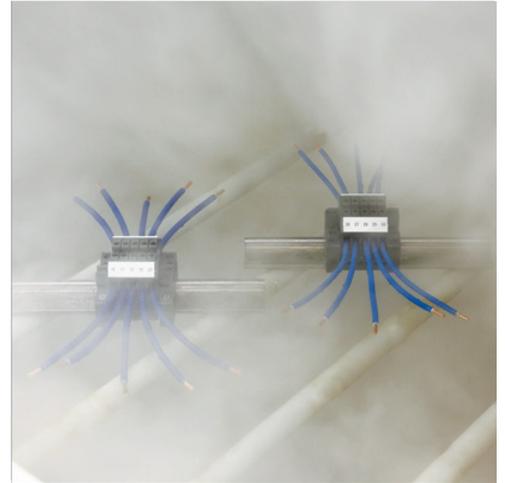
IEC 60068-2-11/-52

Particularly in shipbuilding, technical components have to function continuously in corrosive atmospheres. The salt content of the air combined with the increased humidity places high demands on the metal parts used. The impact of the climate at sea can be simulated on the basis of the above standard.

The resistance of the materials is tested with salt spray in a corrosive atmosphere. The test objects are placed in the test chamber and subjected to a finely dosed spray of 5% sodium chloride solution (NaCl; pH value 6.5 - 7.2) at a temperature of 35°C for a period of 96 hours.

At the end of the test, the test objects are visually inspected and an electrical test is performed to show the influence of this corrosion test on the contact point in more detail.

The TB terminal blocks create a gas-tight connection to the connected conductors. This means that the contact point is protected against corrosion even under extreme climatic conditions.



Voltage drop test

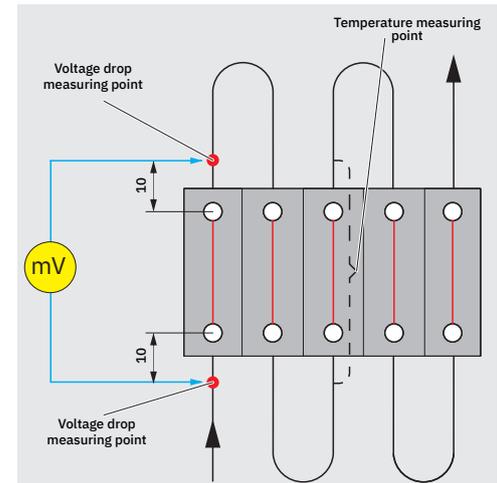
IEC 60947-7-1/-2

In every terminal point of a terminal block, one or more conductors are connected - depending on the connection technology. Current transfer is strongly affected by the electrical resistance between the conductor and the current bar. High-quality contacts create a gas-tight connection. This is the only way to ensure a permanently reliable connection. This electrical test therefore determines the voltage drop on a terminal block (two terminal points). Conclusions regarding the contact resistance and the contact quality can therefore be made.

The terminal blocks are wired with the rated cross section. For measuring purposes, the terminal blocks are charged with a direct test current corresponding to 0.1 times the current carrying capacity of the rated cross section. The voltage drop is measured at a distance ≤ 10 mm from the center of the terminal point (see diagram).

At a room temperature of $\sim 20^{\circ}\text{C}$, the voltage drop must not exceed 3.2 mV per terminal block before or after the test, nor must it exceed 1.5 times the value measured at the start of the test.

TB terminal blocks are up to 60% below the limit values required by standards.



| Rated cross section [mm ²] | Current carrying capacity [A] | Rated cross section AWG | Current carrying capacity [A] |
|--|-------------------------------|-------------------------|-------------------------------|
| 0.2 | 4 | 24 | 4 |
| 0.5 | 6 | 20 | 8 |
| 0.75 | 9 | 18 | 10 |
| 1 | 13:5 | | |
| 1.5 | 17:5 | 16 | 16 |
| 2.5 | 24 | 14 | 22 |
| 4 | 32 | 12 | 29 |
| 6 | 41 | 10 | 38 |
| 10 | 57 | 8 | 50 |
| 16 | 76 | 6 | 67 |
| 35 | 125 | 2 | 121 |
| 50 | 150 | 0 | 162 |
| 95 | 232 | 0000 | 217 |
| 150 | 309 | 00000 | 309 |
| 240 | 415 | 500 MCM | 415 |

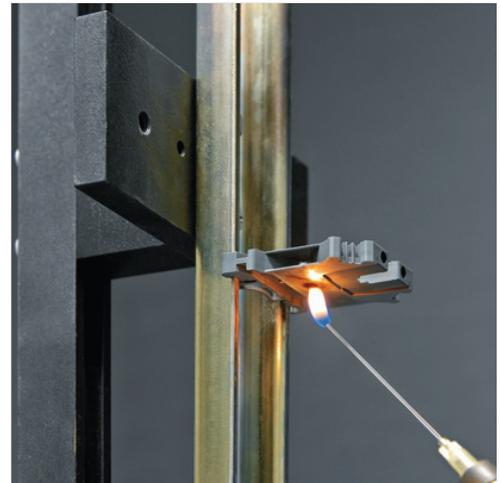
Needle flame test

IEC 60947-7-1/-2

As far as the use of terminal blocks is concerned, behavior in fire when in direct contact with a source of ignition is a major criterion. Such sources of ignition could be electric arcs along a creepage distance, for example. Terminal blocks must not aid or accelerate fires and the plastics must have self-extinguishing properties.

This fire test simulates the behavior of the components with an external source of ignition acting on them directly from outside. In the test, a naked flame fed with butane gas is held at an edge or surface of the test object at an angle of 45° for 10 seconds (see figure). The behavior of the test object without a source of ignition is then observed.

The test is deemed to be passed when the flames or glowing processes are extinguished within 30 seconds of the flame being removed and when the tracing paper beneath the test object is not ignited by falling drops of burning substances. All TB terminal blocks pass the needle flame test, thanks to the high-grade plastics used and their structural design.



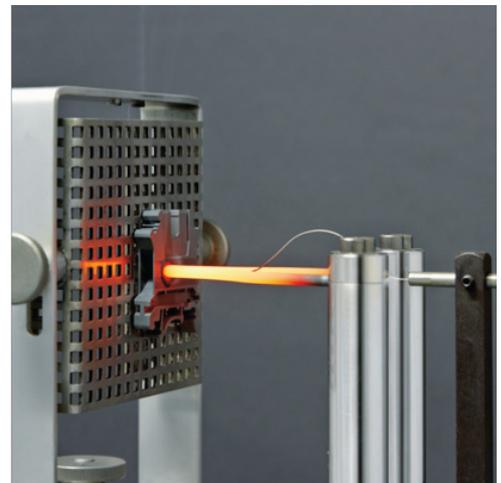
Glow-wire test

IEC 60695-2-11

In the event of overload, conductive metal parts of the terminal block or connected conductors can heat up considerably. This additional heat affects the plastic housing. To simulate this source of danger for electrotechnical components, a glow wire is heated to a specific temperature (550°C, 650°C, 750°C, 850°C or 960°C) in a glowwire test and is then pushed onto the thinnest part of the housing of the test object at a right angle with a force of 1 N, as shown in the figure. The test is deemed to be passed:

– When the tracing paper beneath the glow wire does not ignite due to any drops of burning substances falling down. The polyamides used for the TB terminal blocks as housing materials all meet the requirements of the glow-wire test at 960°C (highest level).

- When no flame or glowing process occurs during the test
- When the flames or glowing processes are extinguished within 30 seconds of the glow wire being removed



Inflammability classification

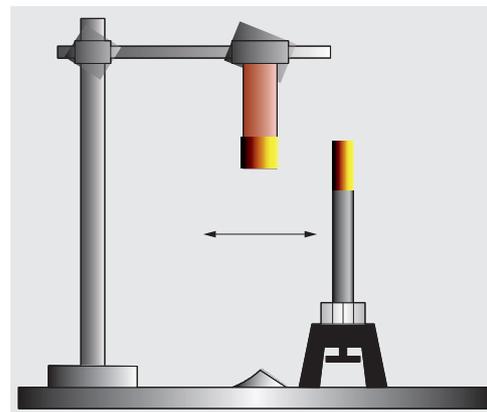
UL 94

UL 94 describes inflammability tests that have gained particular importance in the field of electrical engineering. Behavior in fire is the main focus. Items are classified in accordance with either UL 94 HB (Horizontal Burn) or UL 94 V (Vertical Burn). The test setup is such that the 94 V0/1/2 classifications are stricter than the 94 HB classification.

UL 94 V0/1/2

After conditioning, the test bar is vertically clamped and flame-treated several

times for 10 seconds at a time. Between the flame treatments, the time until the test bar is extinguished is measured. Afterwards, the afterburning times and the drip behavior are evaluated. The plastic used for TB terminal blocks meets the higher-grade criteria for classification as a V0 material.



| Classification | UL 94 V0 | UL 94 V1 | UL 94 V2 |
|---|----------|----------|----------|
| Burning time after each flame treatment | ≤ 10 s | ≤ 30 s | ≤ 30 s |
| Total burning time after 10 flame treatments | ≤ 50 s | ≤ 250 s | ≤ 250 s |
| Glowing time after the 2nd flame treatment | ≤ 30 s | ≤ 60 s | ≤ 60 s |
| Complete burn-off | no | no | no |
| Ignition of the absorbent cotton under the sample | no | no | no |

Behavior in fire

NF F 16-101

NF F 16-101 describes the behavior in fire of plastics on the basis of two indices (I and F). As such, the following tests are performed: glow-wire test, oxygen index, smoke gas opacity, smoke gas toxicology.

1. Determination of index I (0 - 4) Index I is determined from the results of the glow-wire test and the oxygen index, using the following table. Here, I 0 is the best classification and I 4 the worst.

| Index | Oxygen index | Glow wire |
|-------|--------------|-----------------------------------|
| I 0 | 70 % | 960°C, no flame formation |
| I 1 | 45 % | 960°C, no flame formation |
| I 2 | 32 % | 960°C, no flame formation |
| I 3 | 28 % | 850°C, no flame formation |
| I 4 | 20 % | 850°C, flame extinguishes quickly |

2. Determination of smoke index F (0 - 5) This is based on the smoke gas opacity and the smoke gas toxicity. The following concentrations in [ppm] are considered critical:

| | |
|-----------------------------------|-------|
| Carbon monoxide (CO) | 1750 |
| Carbon dioxide (CO ₂) | 90000 |
| Hydrochloric acid (HCl) | 150 |
| Hydrobromic acid (HBr) | 170 |
| Hydrocyanic acid (HCN) | 55 |
| Hydrofluoric acid (HF) | 17 |

Using the test results, a smoke index is documented and can be assigned to classes F 0 – F 5 depending on the value. Here, F 0 is the best classification and F 5 the worst. The TB terminal blocks attain classification I 2/F 2.

Smoke gas toxicity

SMP 800-C

SMP 800-C describes the maximum permissible values of toxic smoke gases when a plastic is burned. In comparison to the BSS 7239 (Boeing standard), this standard specifies more precise measuring methods for the qualitative and quantitative determination of toxic smoke gases that result when a test object is completely burned. The smoke gases of these measurements are taken from the NBS test chamber of the ASTM E 662 test. The same time scheme is valid here as in ASTM E 662.

This fire test simulates the behavior of the components with an external source of ignition acting on them directly from outside. Data is recorded over a full 20 minutes.

SMP 800-C limit values of toxic smoke gases in ppm:

| | |
|------------------------------------|-------|
| Carbon monoxide (CO) | 3500 |
| Carbon dioxide (CO ₂) | 90000 |
| Nitrogen oxides (NO _x) | 100 |
| Sulfur dioxide (SO ₂) | 100 |
| Hydrochloric acid (HCl) | 500 |
| Hydrobromic acid (HBr) | 100 |
| Hydrofluoric acid (HF) | 100 |

The polyamides used for the TB series are many times below the critical concentrations.

Surface inflammability

ASTM E 162

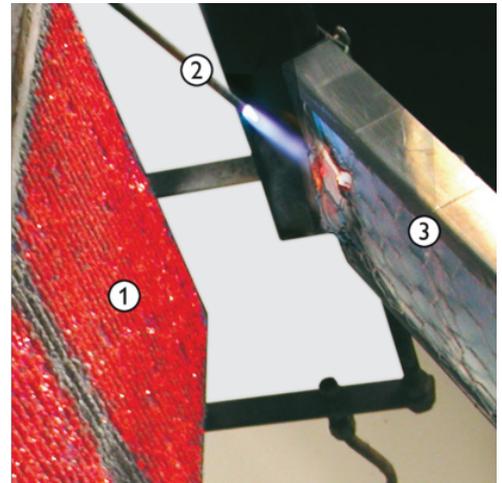
The spread of a fire under the influence of heat is tested and evaluated in the above standard.

To evaluate the surface inflammability of plastics, a “flame spread index” is devised in accordance with ASTM E 162 to provide information on flame propagation under given test conditions.

For this purpose, a sample (152 x 457 x maximum 25.4 mm) is irradiated with a heat source (815°C) at an angle of 30° and ignited with a naked flame at the top end. During the 15-minute duration of the test, the time in which the flame front reaches two measuring points that are 76 mm apart is determined. The product of this flame propagation time and a calculated heat development factor yields the “flame spread index”.

In the American railroad sector, the maximum limit value is 35. In this test, the drip behavior of the plastic is also observed and evaluated.

The TB terminal blocks from Phoenix Contact achieve a flame spread index of 5, drip without burning, and are therefore well below the maximum permitted values of the Federal Railroad Administration (FRA) of the US Department of Transportation.



- ① Radiant heater
- ② Flame
- ③ Plastic sample

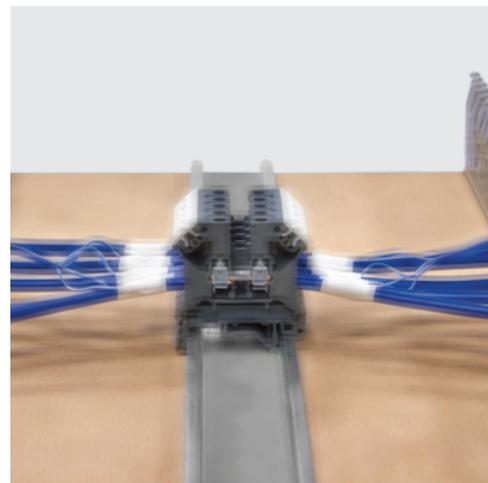
Vibration test

IEC 60068-2-6

This test demonstrates the vibration resistance of a terminal connection subjected to permanent vibrations. Harmonic, sinusoidal vibrations are applied to the test object to simulate rotating, pulsating or oscillating forces. The test is performed on each of the three spatial axes (X, Y, Z). In the test, the objects run through a frequency range of 5 Hz to 150 Hz at a speed of one octave per minute. The r.m.s. value of the acceleration is up to 40 m/s². The test objects are tested for two hours on each of the three axes (x, y, z).

No damage may occur to the terminal blocks that would impair their further use. In addition, no contact interruptions of > 1 µs are permitted during the test. The contact resistance is measured before and after the test.

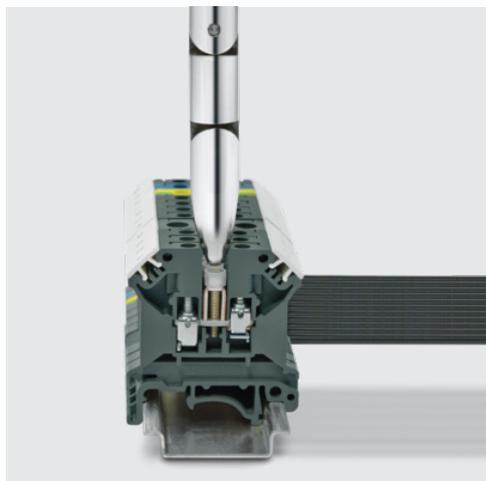
TB terminal blocks meet the requirements of the standard without the electrical contact being interrupted. They are therefore particularly suitable for challenging applications in which the reliable function of the terminal connection must be ensured, even when subjected to vibrations.



Touch proofness

IEC 60529 / DIN EN 50274

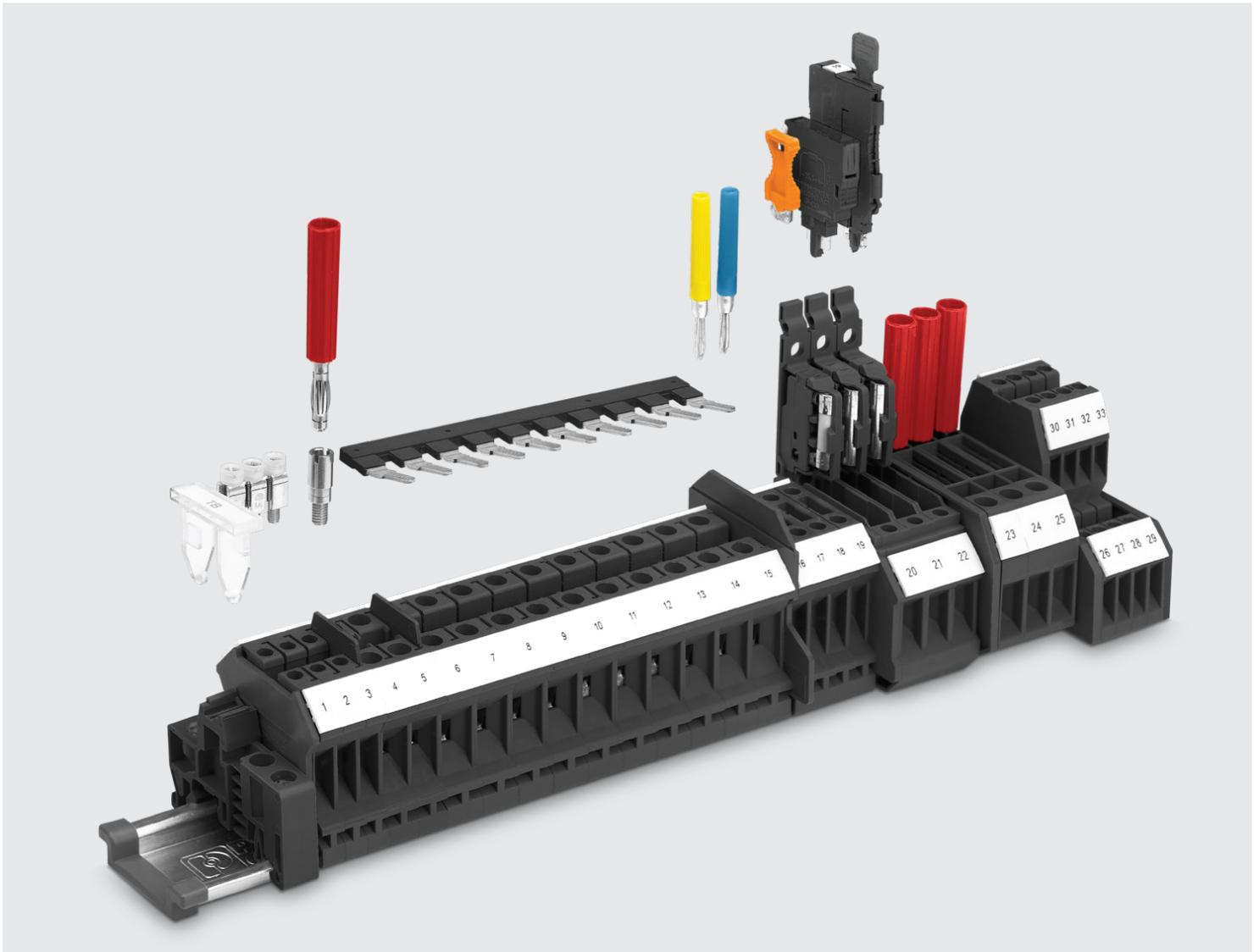
Electrical installations and plants must also afford service technicians a high level of safety when carrying out maintenance involving measuring and testing tasks. BGV A2 specifies safety distances for work, operation, and occasional handling near parts that pose a potential danger in low-voltage plants up to 1000 V AC and 1500 V DC, based on standard IEC 60529. For the purpose of contact safety, a distinction is made between back-of-hand safety and finger safety (touch proofness). The extent to which conductive parts are safe to touch is tested with a test finger and test ball. It must not be possible to touch conductive parts with the test equipment. TB terminal blocks offer finger and contact safety.



Test finger Ø 12,5 mm

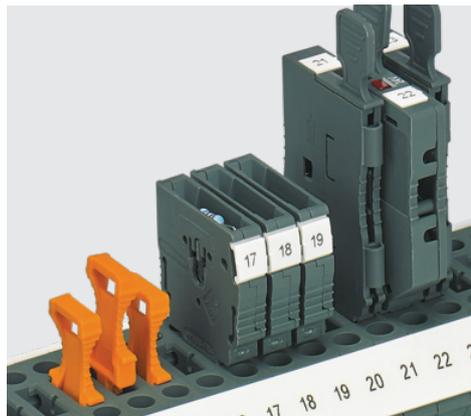


Test ball Ø 50 mm



Compact design

Thanks to the space-saving design, the TB modular terminal blocks are ideal for control systems where limited space is available.



Function zone

The P-DI isolating plug, the CP ... component connector, and the FP ... cartridge fuse plug can be used in the universal plug-in zone of the disconnect terminal block.

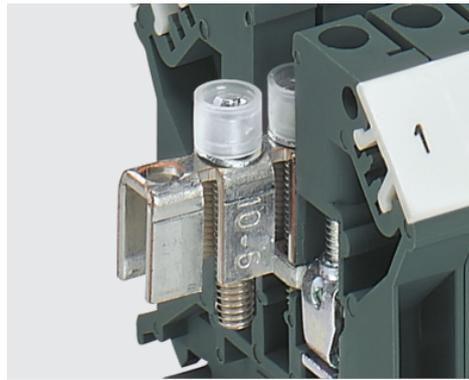


Large-surface labeling

Large-surface and clear marking of the terminal points is essential for reliable and quick installation. Each terminal point in the TB series can be marked separately.



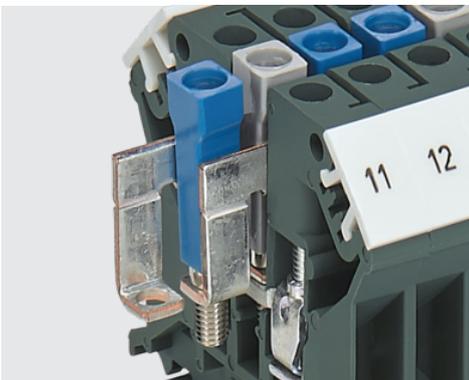
If used with the corresponding fixed bridges, the RB TB... reducing bridges allow terminal blocks with different nominal cross sections to be connected. This means that power blocks can be easily created.



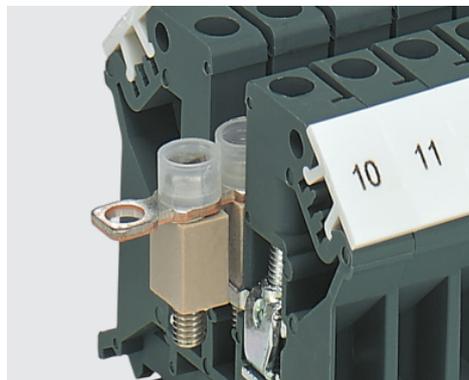
Any number of positions can be easily disconnected from the 10-pos. strip of the SCBI ... fixed bridge with insulating cap, placed in the bridge shaft, and screwed tight.



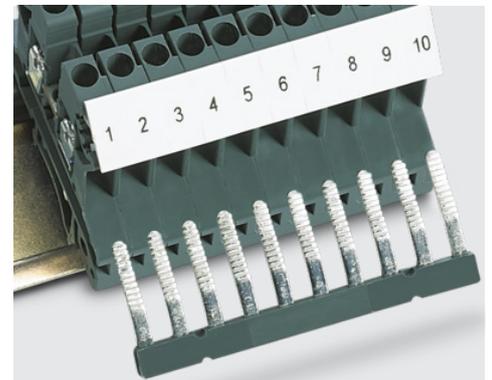
Any number of terminal blocks can be easily bridged according to the application using the MSCB ... modular chain bridges.



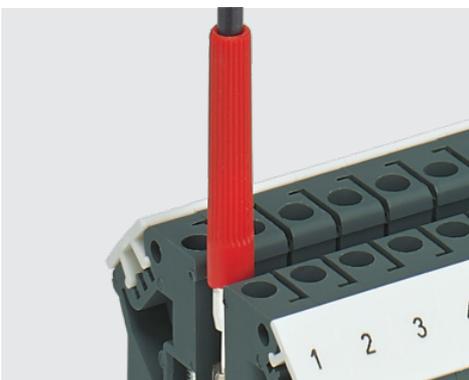
The L bridges can be used to route two different potentials in the bridge shaft. Insulated and color-coded contact screws clearly indicate the relevant potential.



The SCBI ...ISO isolator bridge bars support switchable cross connections. Here the screw has the function of a live contact.



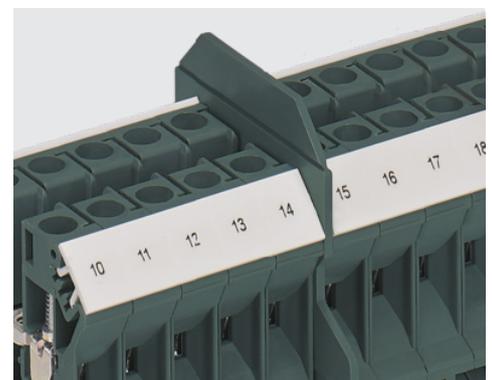
The INB ... isolated insertion bridges are simply clamped down at the connection points, with or without conductors. The bridges can be assembled as required for the number of positions. Individual forks are removed for bridging between non-adjacent terminal blocks.



PSB ... test sockets which can be screwed into the bridge shaft enable reliable test pick-off for 2.3 mm and 4 mm test plugs. The 2.3 mm MPS ... test plug makes direct contact in the bridge shaft when using terminal blocks with an overall width of 5.2 mm and 6.2 mm.



The TS-TB insulation plate is used to electrically isolate and visually separate two neighboring bridges. An insulation plate should be placed on both sides of the bridge in order for the terminal blocks to retain their complete nominal voltage.

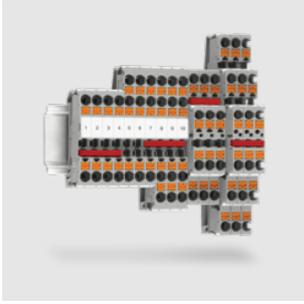


The partition plates protrude beyond the terminal block contours. They provide visual as well as electrical group separation.

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks



Use the feed-through terminal blocks, multi-level terminal blocks, and multi-conductor terminal blocks from Phoenix Contact for space-saving connection of two or more conductors in just one terminal block. The terminal blocks are characterized by their flexible bridgeability and optimum marking options.

ESSENTIAL edition | Feed-through terminal block, Screw connection, 2,5 mm², 24 A, width 5,2 mm



| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Nominal current | Nominal voltage | Color | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------------|-----------------|---------------------------|---------------------------|----------------------|-------------|----------|-----------|
| 24 A | 800 V | traffic grey B (RAL 7043) | No | 1 | TB 2,5 I | 3246311 | 50 |
| 24 A | 800 V | blue (RAL 5015) | No | 1 | TB 2,5 I BU | 3057665 | 50 |
| | | green-yellow | Yes | | TB 2,5-PE I | 3059841 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|--|--|-------------|----------|-----------|
| Cover, 1,5 mm, dark gray | | D-TB 2,5 | 3059919 | 50 |
| Screw bridge, 10-position, silver-colored, with insulating collar | | SCBI 10-5 N | 3246117 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | | INB 10-5 | 3246175 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | | TS-TB-2L | 3062841 | 50 |
| Partition plate, 3 mm, dark gray | | ATP-TB | 3046272 | 50 |

ESSENTIAL edition | Multi-level terminal block, Screw connection, 2,5 mm², 21 A, width 5,2 mm



| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 21 A |
| Nominal voltage | 500 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 2 |

| Color | Type | Item No. | Pcs./Pkt. |
|---------------------------|----------------|----------|-----------|
| traffic grey B (RAL 7043) | TB 2,5-2L I | 3246528 | 50 |
| blue (RAL 5015) | TB 2,5-2L I BU | 3000954 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|---------------|----------|-----------|
| Cover, 2,5 mm, dark gray | | D-TB 2,5/4-2L | 3059964 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | | INB 10-5 | 3246175 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | | TS-TB-2L | 3062841 | 50 |
| Spacer plate, 2,5 mm, dark gray, compensates for the offset at the lower level when standard terminal blocks are mounted side-by-side | | DP-TB-2L | 3059977 | 50 |

ESSENTIAL edition | Multi-level terminal block, Screw connection, 2,5 mm², 20 A, width 6,2 mm

| Technical data | |
|-----------------------------------|---|
| Approvals | UL, ENEC |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal current | 20 A |
| Nominal voltage | 250 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 |

| Type | Item No. | Pcs./Pkt. |
|-------------|----------|-----------|
| TB 2,5-3L I | 3246784 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|----------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, blue, Bridging in the terminal point, latching in the terminal housing | INB IO 10-6 BU | 3246910 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point, latching in the terminal housing | INB IO 10-6 GY | 3246917 | 10 |
| Insertion bridge, 80-position, blue, Bridging in the terminal point, latching in the terminal housing | INB IO 80-6 BU | 3246931 | 10 |
| Insertion bridge, 80-position, red, Bridging in the terminal point, latching in the terminal housing | INB IO 80-6 RD | 3246938 | 10 |
| Partition plate, 2 mm, dark gray | ATP-TB/3 | 3246959 | 50 |

ESSENTIAL edition | Multi-level terminal block, Screw connection, 2,5 mm², 21 A, width 5,2 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | UL, ENEC |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 21 A |
| Nominal voltage | 500 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Color | Type | Item No. | Pcs./Pkt. |
|---------------------------|------------------|----------|-----------|
| traffic grey B (RAL 7043) | TB 2,5-L/LB I | 3000904 | 50 |
| blue (RAL 5015) | TB 2,5-L/LB I BU | 3000960 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------|----------|-----------|
| Cover, 2,5 mm, dark gray | D-TB 2,5/4-L/LB | 3000906 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-5 | 3246175 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal

ESSENTIAL edition | Multi-level terminal block, Screw connection, 2,5 mm², 21 A, width 5,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | UL, IEC |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 21 A |
| Nominal voltage | 500 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| TB 2,5-L/LB-PV I | 3000901 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------|----------|-----------|
| Cover, 2,5 mm, dark gray | D-TB 2,5/4-L/LB | 3000906 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-5 | 3246175 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

ESSENTIAL edition | Motor connection terminal block, Screw connection, 2,5 mm², 19 A, width 6,2 mm



| Technical data | |
|-----------------------------------|---|
| Approval | EAC cULus Recognized |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal current | 19 A (with a 2.5 mm ² conductor cross-section) |
| Nominal voltage | 400 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 14 |
| Mounting type | NS 35/7,5 NS 35/15 |

| Type | Item No. | Pcs./Pkt. |
|----------------|----------|-----------|
| TB 2,5-PE/3L I | 3246826 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|----------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, blue, Bridging in the terminal point, latching in the terminal housing | INB IO 10-6 BU | 3246910 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point, latching in the terminal housing | INB IO 10-6 GY | 3246917 | 10 |
| Insertion bridge, 80-position, blue, Bridging in the terminal point, latching in the terminal housing | INB IO 80-6 BU | 3246931 | 10 |
| Insertion bridge, 80-position, red, Bridging in the terminal point, latching in the terminal housing | INB IO 80-6 RD | 3246938 | 10 |
| Partition plate, 2 mm, dark gray | ATP-TB/3 | 3246959 | 50 |

ESSENTIAL edition | Multi-conductor terminal block, Screw connection, 2,5 mm², 24 A, width 5,2 mm

| Technical data | |
|-----------------------------------|---|
| Approvals | UL, IEC |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 4 |
| Number of rows | 1 |
| Nominal current | 24 A |
| Nominal voltage | 500 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| | Type | Item No. | Pcs./Pkt. |
|--|--------------------|-----------------|------------------|
| | TB 2,5-QUATTRO I | 3246492 | 50 |
| Accessories | Type | Item No. | Pcs./Pkt. |
| Cover, 1,5 mm, dark gray | D-TB 2,5/4-QUATTRO | 3059838 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-5 | 3246175 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

ESSENTIAL edition | Multi-conductor terminal block, Screw connection, 2,5 mm², 24 A, width 5,2 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | UL, IEC |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Nominal current | 24 A |
| Nominal voltage | 400 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 14 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| | Type | Item No. | Pcs./Pkt. |
|--|------------------|-----------------|------------------|
| Color | | | |
| traffic grey B (RAL 7043) | TB 2,5-TWIN I | 3246489 | 50 |
| blue (RAL 5015) | TB 2,5-TWIN I BU | 3000950 | 50 |
| Accessories | Type | Item No. | Pcs./Pkt. |
| Cover, 2 mm, dark gray | D-TB 2,5/4-TWIN | 3059825 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-5 | 3246175 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks

ESSENTIAL edition | Feed-through terminal block, Screw connection, 2,5 mm², 24 A, width 5,2 mm



| Common technical data | |
|-----------------------------------|---|
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Approvals | Nominal current | Nominal voltage | Color | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------|-----------------|-----------------|---------------------------|---------------------------|----------------------|-----------|----------|-----------|
| | 24 A | 800 V | traffic grey B (RAL 7043) | No | 1 | TB 3 I | 3059786 | 50 |
| | 24 A | 800 V | blue (RAL 5015) | No | 1 | TB 3 I BU | 3057733 | 50 |
| | | | green-yellow | Yes | | TB 3-PE I | 3059867 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|---------------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-5 N W | 3000833 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-5 | 3246175 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |

ESSENTIAL edition | Protective conductor terminal block, Screw connection, 2,5 mm², width 5,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Color | green-yellow |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | Yes |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|-----------|----------|-----------|
| TB 3-PE I | 3059867 | 50 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 4 mm², 32 A, width 6,2 mm



| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Nominal current | Nominal voltage | Color | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------------|-----------------|---------------------------|---------------------------|----------------------|-----------|----------|-----------|
| 32 A | 800 V | traffic grey B (RAL 7043) | No | 1 | TB 4 I | 3246324 | 50 |
| 32 A | 800 V | blue (RAL 5015) | No | 1 | TB 4 I BU | 3057678 | 50 |
| | | green-yellow | Yes | | TB 4-PE I | 3059980 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Fixed bridge, 10-position, silver-colored | SCBI 10-6 | 3246120 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |
| Partition plate, 3 mm, dark gray | ATP-TB | 3046272 | 50 |

ESSENTIAL edition | Multi-level terminal block, Screw connection, 4 mm², width 6,2 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal voltage | 500 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 2 |

| Nominal current | Color | Type | Item No. | Pcs./Pkt. |
|-----------------|---------------------------|--------------|----------|-----------|
| 29 A | traffic grey B (RAL 7043) | TB 4-2L I | 3246544 | 50 |
| | blue (RAL 5015) | TB 4-2L I BU | 3000957 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|---------------|----------|-----------|
| Cover, 2,5 mm, dark gray | D-TB 2,5/4-2L | 3059964 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |
| Spacer plate, 2,5 mm, dark gray, compensates for the offset at the lower level when standard terminal blocks are mounted side-by-side | DP-TB-2L | 3059977 | 50 |

ESSENTIAL edition | Multi-level terminal block, Screw connection, 4 mm², width 6,2 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal voltage | 500 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Color | Type | Item No. | Pcs./Pkt. |
|---------------------------|-------------|----------|-----------|
| traffic grey B (RAL 7043) | TB 4-L/LB I | 3000905 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------|----------|-----------|
| Cover, 2,5 mm, dark gray | D-TB 2,5/4-L/LB | 3000906 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks

ESSENTIAL edition | Multi-level terminal block, Screw connection, 4 mm², 32 A, width 6,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | EAC, UL |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 32 A |
| Nominal voltage | 500 V traffic grey B (RAL) |
| Color | 7043 |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|----------------|----------|-----------|
| TB 4-L/LB-PV I | 3000890 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------|----------|-----------|
| Cover, 2,5 mm, dark gray | D-TB 2,5/4-L/LB | 3000906 | 50 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

ESSENTIAL edition | Motor connection terminal block, Screw connection, 4 mm², 25 A, width 6,2 mm



| Technical data | |
|-----------------------------------|---|
| Approval | EAC cULus Recognized |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal current | 25 A |
| Nominal voltage | 400 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|--------------|----------|-----------|
| TB 4-PE/3L I | 3246833 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|-------------|----------|-----------|
| Fixed bridge, 10-position, silver-colored | SCBI 10-6 | 3246120 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |

ESSENTIAL edition | Multi-conductor terminal block, Screw connection, 4 mm², 32 A, width 6,2 mm

| Common technical data | |
|-----------------------------------|---|
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 4 |
| Number of rows | 1 |
| Nominal current | 32 A |
| Nominal voltage | 630 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Approvals | Color | Type | Item No. | Pcs./Pkt. |
|--|---------------------------|-------------------|----------|-----------|
|  | traffic grey B (RAL 7043) | TB 4-QUATTRO I | 3246515 | 50 |
|  | blue (RAL 5015) | TB 4-QUATTRO I BU | 3000947 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|--------------------|----------|-----------|
| Cover, 1,5 mm, dark gray | D-TB 2,5/4-QUATTRO | 3059838 | 50 |
| Fixed bridge, 10-position, silver-colored | SCBI 10-6 | 3246120 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, width 0,5 mm, for electrical isolation of neighboring bridges in the terminal center | TS-TB-2L | 3062841 | 50 |

ESSENTIAL edition | Multi-conductor terminal block, Screw connection, 4 mm², 32 A, width 6,2 mm

| Common technical data | |
|-----------------------------------|--|
| Approvals |   |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Nominal current | 32 A |
| Nominal voltage | 500 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Color | Type | Item No. | Pcs./Pkt. |
|---------------------------|----------------|----------|-----------|
| traffic grey B (RAL 7043) | TB 4-TWIN I | 3246502 | 50 |
| blue (RAL 5015) | TB 4-TWIN I BU | 3000952 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------------|----------|-----------|
| Cover, 2 mm, dark gray | D-TB 2,5/4-TWIN | 3059825 | 50 |
| Fixed bridge, 10-position, silver-colored | SCBI 10-6 | 3246120 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks

ESSENTIAL edition | Feed-through terminal block, Screw connection, 6 mm², 41 A, width 8,2 mm



Common technical data

| | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 6 mm ² |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 1.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 1.5 mm ² ... 6 mm ² |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Nominal current | Nominal voltage | Color | Conductor cross-section, AWG | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------------|-----------------|---------------------------|------------------------------|---------------------------|----------------------|-----------|----------|-----------|
| 41 A | 800 V | traffic grey B (RAL 7043) | 14 ... 10 | No | 1 | TB 6 I | 3000486 | 50 |
| 41 A | 800 V | blue (RAL 5015) | 14 ... 10 | No | 1 | TB 6 I BU | 3057681 | 50 |
| | | green-yellow | 24 ... 10 | Yes | | TB 6-PE I | 3059870 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Fixed bridge, 10-position, silver-colored | SCBI 10-8 | 3246133 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-8 W | 3000835 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-8 | 3246191 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |
| Partition plate, 3 mm, dark gray | ATP-TB | 3046272 | 50 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 10 mm², 57 A, width 10,2 mm

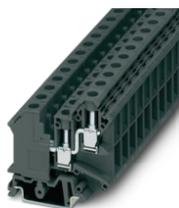


Common technical data

| | |
|-----------------------------------|--|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 10 mm ² |
| Width | 10.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 1.5 mm ² ... 16 mm ² |
| Conductor cross-section, flexible | 1.5 mm ² ... 10 mm ² |
| Conductor cross-section, AWG | 14 ... 6 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Nominal current | Nominal voltage | Color | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------------|-----------------|---------------------------|---------------------------|----------------------|------------|----------|-----------|
| 57 A | 800 V | traffic grey B (RAL 7043) | No | 1 | TB 10 I | 3246340 | 50 |
| 57 A | 800 V | blue (RAL 5015) | No | 1 | TB 10 I BU | 3057694 | 50 |
| - | - | green-yellow | Yes | | TB 10-PE I | 3059883 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|--------------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Fixed bridge, 10-position, silver-colored | SCBI 10-10 | 3246146 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-10 W | 3000836 | 10 |
| Insulation plate, for electrical isolation of neighboring bridges in the terminal center | TS-TB | 3062838 | 50 |
| Partition plate, 3 mm, dark gray | ATP-TB | 3046272 | 50 |
| Insertion bridge, 10-position, gray | INB 10-10 | 3246201 | 10 |

ESSENTIAL edition | Multi-conductor terminal block, Screw connection, 10 mm², 57 A, width 10,2 mm

| Technical data | |
|-----------------------------------|--|
| Approvals | UL |
| Connection method | Screw connection |
| Connection cross-section | 10 mm ² |
| Width | 10,2 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Nominal current | 57 A |
| Nominal voltage | 800 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 1.5 mm ² ... 16 mm ² |
| Conductor cross-section, flexible | 1.5 mm ² ... 10 mm ² |
| Conductor cross-section, AWG | 14 ... 6 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Type | Item No. | Pcs./Pkt. |
|--------------|----------|-----------|
| TB 10-TWIN I | 3062812 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|--------------|----------|-----------|
| Fixed bridge, 10-position, silver-colored | SCBI 10-10 | 3246146 | 10 |
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-10 W | 3000836 | 10 |
| Insertion bridge, 10-position, gray | INB 10-10 | 3246201 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 16 mm², 76 A, width 12,2 mm

| Common technical data | |
|-----------------------------------|--|
| Connection method | Screw connection |
| Connection cross-section | 16 mm ² |
| Width | 12,2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 6 mm ² ... 16 mm ² |
| Conductor cross-section, flexible | 6 mm ² ... 16 mm ² |
| Conductor cross-section, AWG | 8 ... 6 |

| Approvals | Nominal current | Nominal voltage | Color | Protective conductor foot | Mounting type | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------|-----------------|-----------------|---------------------------|---------------------------|--------------------------------|----------------------|------------|----------|-----------|
| UL | 76 A | 1000 V | traffic grey B (RAL 7043) | No | NS 35/7,5 NS 35/15 NS 32 | 1 | TB 16 I | 3246353 | 50 |
| UL | 76 A | 1000 V | blue (RAL 5015) | No | NS 35/7,5 NS 35/15 NS 32 | 1 | TB 16 I BU | 3076659 | 50 |
| UL | - | - | green-yellow | Yes | NS 35/7,5 NS 35/15 | - | TB 16-PE I | 3059896 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|------------|----------|-----------|
| Cover, 2,2 mm, dark gray | D-TB 16 | 3059922 | 50 |
| Screw bridge, 10-position, silver-colored, with insulating collar | SCBI 10-12 | 3246159 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-12 | 3246214 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 35 mm², 125 A, width 15,2 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | UL |
| Connection method | Screw connection |
| Connection cross-section | 35 mm ² |
| Width | 15,2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 10 mm ² ... 35 mm ² |
| Conductor cross-section, flexible | 10 mm ² ... 35 mm ² |
| Conductor cross-section, AWG | 6 ... 2 |
| Mounting type | NS 35/7,5 NS 35/15 |

| Nominal current | Nominal voltage | Color | Protective conductor foot | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------------|-----------------|---------------------------|---------------------------|----------------------|------------|----------|-----------|
| 125 A | 1000 V | traffic grey B (RAL 7043) | No | 1 | TB 35 I | 3246366 | 50 |
| 125 A | 1000 V | blue (RAL 5015) | No | 1 | TB 35 I BU | 3076662 | 50 |
| - | - | green-yellow | Yes | - | TB 35-PE I | 3059906 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-----------|----------|-----------|
| End cover, 2,2 mm, dark gray | D-TB 35 | 3059935 | 50 |
| Fixed bridge, 2-position, silver-colored, with insulating collar | SCBI 2-15 | 3246162 | 10 |
| Fixed bridge, 3-position, silver-colored, with insulating collar | SCBI 3-15 | 3246573 | 10 |
| Fixed bridge, 5-position, silver-colored, with insulating collar | SCBI 5-15 | 3246612 | 10 |

Terminal blocks

Feed-through terminal blocks, multi-conductor terminal blocks, and multi-level terminal blocks

ESSENTIAL edition | Feed-through terminal block, Screw connection, 50 mm², 150 A, width 20 mm



| Common technical data | |
|------------------------------|--------------------|
| Connection method | Screw connection |
| Connection cross-section | 50 mm ² |
| Width | 20 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, AWG | 4 ... 2/0 |

| Approvals | Nominal current | Nominal voltage | Color | Conductor cross-section, rigid | Conductor cross-section, flexible | Protective conductor foot | Mounting type | Type | Item No. | Pcs./Pkt. |
|-----------|-----------------|-----------------|---------------------------|---|---|---------------------------|--------------------------------|------------|-------------------------|-----------|
| | 150 A | 1000 V | traffic grey B (RAL 7043) | 16 mm ² ... 70 mm ² | 25 mm ² ... 70 mm ² | No | NS 35/7,5 NS 35/15 | TB 50 I | 3247180 | 10 |
| | 150 A | 1000 V | blue (RAL 5015) | 16 mm ² ... 70 mm ² | 25 mm ² ... 70 mm ² | No | NS 35/7,5 NS 35/15 | TB 50 I BU | 3247187 | 10 |
| | - | - | green-yellow | 16 mm ² ... 50 mm ² | 25 mm ² ... 50 mm ² | Yes | NS 35/7,5 NS 35/15 NS 32 | TB 50-PE I | 3251206 | 10 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|-------------------------|-----------|
| Screw bridge, 2-position, silver-colored, with insulating collar | SCBI 2-20 N | 3247222 | 10 |
| Screw bridge, 3-position, silver-colored, with insulating collar | SCBI 3-20 N | 3247229 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 70 mm², 192 A, width 20,3 mm



| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Width | 20.3 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 192 A |
| Nominal voltage | 1000 V |
| Conductor cross-section, rigid | 16 mm ² ... 95 mm ² |
| Conductor cross-section, flexible | 25 mm ² ... 70 mm ² |
| Conductor cross-section, AWG | 4 ... 3/0 |

| Connection cross-section | Color | Protective conductor foot | Mounting type | Type | Item No. | Pcs./Pkt. |
|--------------------------|---------------------------|---------------------------|--------------------------------|------------|-------------------------|-----------|
| 70 mm ² | traffic grey B (RAL 7043) | No | NS 35/7,5 NS 35/15 | TB 70 I | 3247194 | 10 |
| 70 mm ² | blue (RAL 5015) | No | NS 35/7,5 NS 35/15 | TB 70 I BU | 3247201 | 10 |
| 95 mm ² | green-yellow | Yes | NS 35/7,5 NS 35/15 NS 32 | TB 70-PE I | 3251207 | 10 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|-------------------------|-----------|
| Screw bridge, 2-position, silver-colored, with insulating collar | SCBI 2-20 N | 3247222 | 10 |
| Screw bridge, 3-position, silver-colored, with insulating collar | SCBI 3-20 N | 3247229 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 95 mm², 232 A, width 25 mm



| Common technical data | |
|-----------------------------------|---|
| Connection method | Screw connection |
| Connection cross-section | 95 mm ² |
| Width | 25 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Conductor cross-section, rigid | 25 mm ² ... 95 mm ² |
| Conductor cross-section, flexible | 35 mm ² ... 95 mm ² |
| Conductor cross-section, AWG | 2 ... 3/0 |

| Approvals | Nominal current | Nominal voltage | Color | Protective conductor foot | Mounting type | Number of potentials | Type | Item No. | Pcs./Pkt. |
|-----------|-----------------|-----------------|---------------------------|---------------------------|--------------------------------|----------------------|------------|-------------------------|-----------|
| | 232 A | 1000 V | traffic grey B (RAL 7043) | No | NS 35/15 NS 32 | 1 | TB 95 I | 3251200 | 3 |
| | 232 A | 1000 V | blue (RAL 5015) | No | NS 35/15 NS 32 | 1 | TB 95 I BU | 3251203 | 3 |
| | - | - | green-yellow | Yes | NS 35/7,5 NS 35/15 NS 32 | - | TB 95-PE I | 3251208 | 10 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|----------|-------------------------|-----------|
| Insertion bridge, 2-position, gray, Bridging in the terminal point | INB 2-25 | 3251212 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 150 mm², 309 A, width 31 mm

| Common technical data | |
|-----------------------------------|--|
| Connection method | Screw connection |
| Connection cross-section | 150 mm ² |
| Width | 31 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 309 A |
| Nominal voltage | 1000 V |
| Conductor cross-section, rigid | 35 mm ² ... 150 mm ² |
| Conductor cross-section, flexible | 50 mm ² ... 150 mm ² |
| Conductor cross-section, AWG | 1/0 ... 250 kcmil |
| Protective conductor foot | No |
| Mounting type | NS 35/15 NS 32 |
| Number of potentials | 1 |

| Approvals | Color | Type | Item No. | Pcs./Pkt. |
|-----------|---------------------------|----------|----------|-----------|
| UL, ENEC | traffic grey B (RAL 7043) | TB 150 I | 3251201 | 3 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|----------|----------|-----------|
| Insertion bridge, 2-position, gray, Bridging in the terminal point | INB 2-31 | 3251214 | 10 |
| Insertion bridge, 3-position, gray, Bridging in the terminal point | INB 3-31 | 3251215 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 240 mm², 415 A, width 36 mm

| Common technical data | |
|-----------------------------------|--|
| Connection method | Screw connection |
| Connection cross-section | 240 mm ² |
| Width | 36 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 415 A |
| Nominal voltage | 1000 V |
| Conductor cross-section, rigid | 70 mm ² ... 240 mm ² |
| Conductor cross-section, flexible | 70 mm ² ... 240 mm ² |
| Conductor cross-section, AWG | 3/0 ... 250 kcmil |
| Protective conductor foot | No |
| Mounting type | NS 35/15 NS 32 |
| Number of potentials | 1 |

| Approvals | Color | Type | Item No. | Pcs./Pkt. |
|-----------|---------------------------|----------|----------|-----------|
| UL, ENEC | traffic grey B (RAL 7043) | TB 240 I | 3251202 | 3 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|----------|----------|-----------|
| Insertion bridge, 2-position, gray, Bridging in the terminal point | INB 2-36 | 3251216 | 10 |

Sensor terminal blocks and actuator terminal blocks for clear signal wiring



Thanks to their compact design, the PTIO sensor/actuator terminal blocks are tailored to the wiring of modern machine control systems. The sensor/actuator terminal blocks enable you to wire bipolar initiators and actuators with a terminal width of just 3.5 mm. In addition, you are able to wire the terminal blocks with 3- or 4-conductor sensors and actuators.

ESSENTIAL edition | Sensor/actuator terminal block, Screw connection, 2,5 mm², 20 A, width 6,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | UL |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal voltage | 250 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 14 |
| Mounting type | NS 35/7,5 NS 35/15 |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| TBIO 2,5 I | 3246749 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|----------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 BU | 3246910 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 GY | 3246917 | 10 |
| Insertion bridge, 80-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 BU | 3246931 | 10 |
| Insertion bridge, 80-position, red, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 RD | 3246938 | 10 |
| Partition plate, 2 mm, dark gray | | ATP-TB/3 | 3246959 | 50 |

ESSENTIAL edition | Sensor/actuator terminal block, Screw connection, 2,5 mm², 20 A, width 6,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | UL |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal voltage | 250 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 14 |
| Protective conductor foot | Yes |
| Mounting type | NS 35/7,5 NS 35/15 |

| Type | Item No. | Pcs./Pkt. |
|-------------------|----------|-----------|
| TBIO 2,5-PE/L/L I | 3246889 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|----------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | | SCBI 10-6 W | 3000834 | 10 |
| Insertion bridge, 10-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 BU | 3246910 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 GY | 3246917 | 10 |
| Insertion bridge, 80-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 BU | 3246931 | 10 |
| Insertion bridge, 80-position, red, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 RD | 3246938 | 10 |
| Partition plate, 2 mm, dark gray | | ATP-TB/3 | 3246959 | 50 |

ESSENTIAL edition | Sensor/actuator disconnect terminal block, Screw connection, 2,5 mm², 15 A, width 6,2 mm

| Technical data | |
|-----------------------------------|---|
| Approvals | UL, CE |
| Connection method | Screw connection |
| Connection cross-section | 2.5 mm ² |
| Width | 6.2 mm |
| Number of connections | 3 |
| Number of rows | 3 |
| Nominal voltage | 250 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 14 |
| Protective conductor foot | Yes |
| Mounting type | NS 35/7,5 NS 35/15 |

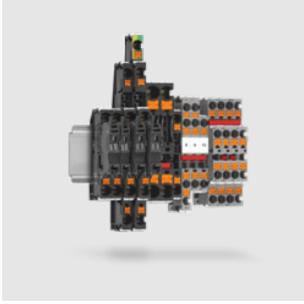
| Type | Item No. | Pcs./Pkt. |
|--------------------|----------|-----------|
| TBIO 2,5-PE/L/TG I | 3246903 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|---------------------|----------|-----------|
| Fuse plug, G / 5 x 20, width 6,1 mm | | FP IO (5X20) | 3246980 | 50 |
| Fuse plug, G / 5 x 20, width 6,1 mm, with LED display for 15-30 V AC/DC | | FP IO (5X20) LED 24 | 3246994 | 50 |
| Insertion bridge, 10-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 BU | 3246910 | 10 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point, latching in the terminal housing | | INB IO 10-6 GY | 3246917 | 10 |
| Insertion bridge, 80-position, blue, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 BU | 3246931 | 10 |
| Insertion bridge, 80-position, red, Bridging in the terminal point, latching in the terminal housing | | INB IO 80-6 RD | 3246938 | 10 |
| Partition plate, 2 mm, dark gray | | ATP-TB/3 | 3246959 | 50 |

Terminal blocks

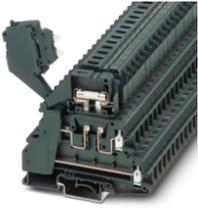
Fuse terminal blocks, component terminal blocks, and diode terminal blocks

Fuse terminal blocks, component terminal blocks, and diode terminal blocks



With fuse terminal blocks, you can accommodate fuses in different designs and with different nominal currents. Using multi-level versions, you can route a protected potential and an unprotected potential through just one terminal block. Versions for use in potentially explosive areas with Ex nA type of protection extend the field of application. Together with the component terminal blocks and diode terminal blocks, terminal blocks with LEDs, blocking diodes, or resistors are also available.

ESSENTIAL edition | Multi-level fuse terminal block, Screw connection, 4 mm², 30 A, width 8,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | UL, ENEC |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 30 A |
| Nominal voltage | 400 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Fuse type | G / 5 x 20 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|-----------------------|----------|-----------|
| TB 4-2L-HESI (5X20) I | 3246847 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|-------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-8 W | 3000835 | 10 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | INBS 10-8 | 3247159 | 10 |

ESSENTIAL edition | Multi-level fuse terminal block, Screw connection, 4 mm², 30 A, width 8,2 mm



| Common technical data | |
|-----------------------------------|---|
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 4 |
| Number of rows | 2 |
| Nominal current | 30 A |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Fuse type | G / 5 x 20 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Approvals | Nominal voltage | Type | Item No. | Pcs./Pkt. |
|-----------|---|-----------------------------|----------|-----------|
| UL | 24 V (the voltage is determined by the light indicator.) | TB 4-2L-HESILED 24 (5X20) I | 3246854 | 50 |
| ENEC | 250 V (the voltage is determined by the light indicator.) | TB 4-2L-HESILA 250 (5X20) I | 3246819 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|-------------|----------|-----------|
| Screw bridge, 10-position, silver-colored, with spring washer and insulating collar | SCBI 10-8 W | 3000835 | 10 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | INBS 10-8 | 3247159 | 10 |

ESSENTIAL edition | Lever-type disconnect terminal block, Screw connection, 4 mm², 16 A, width 8,2 mm

| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 16 A |
| Nominal voltage | 500 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Fuse type | Bridge |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Type | Item No. | Pcs./Pkt. |
|-------------|----------|-----------|
| TB 4-HEDI I | 3246421 | 50 |

Accessories

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|----------|-----------|
| Cover, 2,2 mm, dark gray | D-TB 4-HESI | 3059812 | 50 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | INBS 10-8 | 3247159 | 10 |

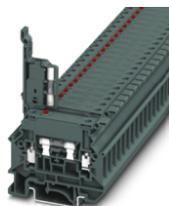
ESSENTIAL edition | Fuse terminal block, Screw connection, 4 mm², 6,3 A, width 8,2 mm

| Common technical data | |
|-----------------------------------|--|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal voltage | 500 V (the voltage is determined by the fuse used) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Fuse type | G / 5 x 20 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Nominal current | Color | Type | Item No. | Pcs./Pkt. |
|-----------------|---------------------------|--------------------|----------|-----------|
| 6.3 A | traffic grey B (RAL 7043) | TB 4-HESI (5X20) I | 3246418 | 50 |

Accessories

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|----------|-----------|
| Cover, 2,2 mm, dark gray | D-TB 4-HESI | 3059812 | 50 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | INBS 10-8 | 3247159 | 10 |

ESSENTIAL edition | Fuse terminal block, Screw connection, 4 mm², 6,3 A, width 8,2 mm

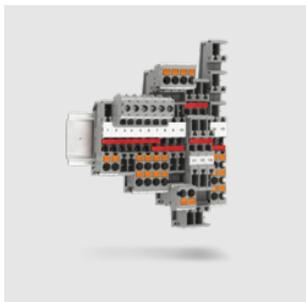
| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 6.3 A |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 12 |
| Fuse type | G / 5 x 20 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Nominal voltage | Type | Item No. | Pcs./Pkt. |
|---|--------------------------|----------|-----------|
| 24 V (the voltage is determined by the light indicator.) | TB 4-HESILED 24 (5X20) I | 3246434 | 50 |
| 60 V (the voltage is determined by the light indicator.) | TB 4-HESILED 60 (5X20) I | 3246447 | 50 |
| 250 V (the voltage is determined by the light indicator.) | TB 4-HESILA 250 (5X20) I | 3246450 | 50 |

Accessories

| Accessories | Type | Item No. | Pcs./Pkt. |
|--|-------------|----------|-----------|
| Cover, 2,2 mm, dark gray | D-TB 4-HESI | 3059812 | 50 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | INBS 10-8 | 3247159 | 10 |

Plug-in terminal blocks



The plug-in COMBI terminal blocks are a special form of hybrid terminal blocks. The terminal blocks have a standardized plug-in zone on one side and Push-in, screw, spring-cage or fast-connection technology on the other side. Due to the contact system, they can withstand extreme vibration levels. The plug-in terminal blocks save you a lot of time when carrying out signal and power wiring.

ESSENTIAL edition | Pluggable feed-through terminal block, Screw/plug-in connection, 2,5 mm², 12 A, width 5,08 mm

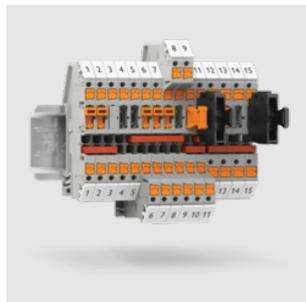


| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw/plug-in connection |
| Connection cross-section | 2.5 mm ² |
| Width | 5.08 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 12 A |
| Nominal voltage | 250 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, AWG | 24 ... 12 |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|------------------|-------------------------|-----------|
| TB 2,5-BCVP/1P I | 3247075 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|--------------------------|------------------|-------------------------|-----------|
| Cover, 2,4 mm, dark gray | D-TB 2,5-BCVP/1P | 3247117 | 50 |

Disconnect and knife-disconnect terminal blocks



Particularly in testing and measurement technology, various terminal blocks are used which enable the easy manual disconnection of circuits. The knife-disconnect terminal blocks from Phoenix Contact have an easy-to-operate lever disconnect knife. The basic disconnect terminal blocks have a standardized disconnect zone for accommodating component connectors, fuse plugs, isolating plugs or feed-through connectors.

ESSENTIAL edition | Disconnect terminal block, Screw connection, 4 mm², 16 A, width 6,15 mm

| Common technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.15 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 16 A |
| Nominal voltage | 800 V |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Color | Type | Item No. | Pcs./Pkt. |
|---------------------------|-----------|----------|-----------|
| traffic grey B (RAL 7043) | TB 4-MT I | 3246379 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|-----------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |

ESSENTIAL edition | Knife-disconnect terminal block, Screw connection, 4 mm², 16 A, width 6,2 mm

| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 16 A |
| Nominal voltage | 500 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| TB 4-MT NI | 3000607 | 50 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|-----------|----------|-----------|
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |

Terminal blocks

Disconnect and knife-disconnect terminal blocks

ESSENTIAL edition | Disconnect terminal block, Screw connection, 4 mm², 16 A, width 6,15 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.15 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 16 A |
| Nominal voltage | 800 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Type | Item No. | Pcs./Pkt. |
|---------------|----------|-----------|
| TB 4-MT-P/P I | 3246405 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|-----------|----------|-----------|
| Cover, 1,8 mm, dark gray | | D-TB 4/10 | 3059809 | 50 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | | INB 10-6 | 3246188 | 10 |

ESSENTIAL edition | Feed-through terminal block, Screw connection, 4 mm², 32 A, width 8,2 mm



| Technical data | |
|-----------------------------------|---|
| Approvals | |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 32 A |
| Nominal voltage | 800 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| TB 4-MTD I | 3000605 | 50 |

| Accessories | | Type | Item No. | Pcs./Pkt. |
|--|--|-------------|----------|-----------|
| Cover, 2,2 mm, dark gray | | D-TB 4-HESI | 3059812 | 50 |
| Insertion bridge, 10-position, dark gray, Bridging in the terminal point | | INBS 10-8 | 3247159 | 10 |

ESSENTIAL edition | Disconnect terminal block, Screw connection, 4 mm², 16 A, width 6,2 mm

Technical data

| | |
|-----------------------------------|---|
| Approvals | UL, CE, RoHS |
| Connection method | Screw connection |
| Connection cross-section | 4 mm ² |
| Width | 6.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 16 A |
| Nominal voltage | 800 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 0.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 0.5 mm ² ... 4 mm ² |
| Conductor cross-section, AWG | 20 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Type | Item No. | Pcs./Pkt. |
|-----------|----------|-----------|
| TB 4-TG I | 3246382 | 50 |

Accessories

| Type | Item No. | Pcs./Pkt. | |
|---|--------------|-----------|----|
| Fuse plug, G / 5 x 20, width 6,2 mm, alternating arrangement on 5.2 mm disconnect terminal blocks | FP (5X20) | 3214039 | 50 |
| Fuse plug, G / 5 x 20, width 6,2 mm, with LED display for 15-30 V AC/DC, alternating arrangement on 5.2 mm disconnect terminal blocks | FP (5X20) 24 | 3214042 | 50 |
| Component connector, dark gray, for receiving diodes or resistors | CP | 3214071 | 10 |
| Cover, 1,8 mm, dark gray | D-TB 4/10 | 3059809 | 50 |
| Insertion bridge, 10-position, gray, Bridging in the terminal point | INB 10-6 | 3246188 | 10 |

ESSENTIAL edition | Test disconnect terminal block, Screw connection, 41 A, width 8,2 mm



Technical data

| | |
|-----------------------------------|---|
| Approvals | UL, CE, RoHS |
| Connection method | Screw connection |
| Width | 8.2 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Nominal current | 41 A |
| Nominal voltage | 800 V |
| Color | traffic grey B (RAL 7043) |
| Conductor cross-section, rigid | 1.5 mm ² ... 6 mm ² |
| Conductor cross-section, flexible | 1.5 mm ² ... 6 mm ² |
| Conductor cross-section, AWG | 14 ... 10 |
| Protective conductor foot | No |
| Mounting type | NS 35/7,5 NS 35/15 NS 32 |
| Number of potentials | 1 |

| Type | Item No. | Pcs./Pkt. |
|----------|----------|-----------|
| TB 6-T I | 3246463 | 50 |

Accessories

| Type | Item No. | Pcs./Pkt. | |
|--|------------------|-----------|----|
| Cover, 2,2 mm, dark gray | D-TB 6-T | 3059951 | 50 |
| Screw bridge, 10-position, silver-colored, with insulating collar | SCBI 10-8,15 | 3245134 | 10 |
| Isolator bridge bar, 10-position, silver-colored, for switchable cross bridges, with insulating collar | SCBI 10-8,15 ISO | 3000417 | 10 |

Industrial communication



Industrial communication

Industrial communication modules feature precision connection functions for the use of serial cables. Whether the application requires wireless data transmission over distances of up to 5 km or a global Ethernet connection, the ESSENTIAL edition communication modules feature the right components for you.

Product range overview

| | |
|---|-----------|
| Industrial Wireless ESSENTIAL edition | 62 |
| Device servers and gateways ESSENTIAL edition | 63 |

Wireless modules for serial cable replacement



Industrial communication modules feature precision connectivity functions for the use of serial cables. Whether the application requires wireless data transmission over distances of 5 km or global Ethernet connectivity, the ESSENTIAL edition communication modules feature the right components for you.

The ESSENTIAL edition wireless modules with essential functions reliably transmit your serial data. They ensure a higher availability than comparable wireless technologies thanks to a high number of narrowband wireless channels, along with an automatic and manual coexistence mechanism. Convenient and clear software assistants ensure quick and easy installation. Moreover, their international approvals package allows you to use them anywhere in the world. The ESSENTIAL edition wireless module is ideal for use in environments with electromagnetic interference because the wireless communication in the 2.4 GHz band is immune to external EMI, and is therefore perfect for use in photovoltaic systems.

The ESSENTIAL edition device server features flexible options for transmitting serial data via Ethernet. With the switchboard component housing and the standard operating environments, this device server is perfectly suited for commercial and IT applications. Numerous serial interface profiles simplify the configuration process for the Modbus gateway functionality. This enables seamless communication between Modbus/ASCII, Modbus/RTU, and Modbus/TCP devices.



With Trusted Wireless modules, you obtain reliable, interference-free communication, particularly in environments with electromagnetic disturbance.



Commission the wireless connection intuitively. The convenient Software Wizard will assist you.



You can use the wireless modules everywhere in your applications. Thanks to the license-free 2.4 GHz frequency band and an international approval package, the devices can be used worldwide.



Numerous serial interface profiles simplify the configuration process for the Modbus gateway functionality. The profiles support the simultaneous connection with several hosts, including up to 1,024 incoming bases and up to 49 outgoing bases.

Your advantages:

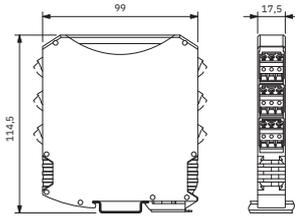
- ✓ For worldwide use, thanks to the license-free 2.4 GHz ISM band
- ✓ Intuitive commissioning of the wireless connection using the convenient Software Wizard
- ✓ Reliable, interference-free communication even over long distances, thanks to Trusted Wireless technology
- ✓ Simplified configuration with individual profiles
- ✓ Simultaneous connection to several hosts

Industrial Wireless ESSENTIAL edition



The ESSENTIAL edition wireless module with essential functions reliably transmits your serial data. With Trusted Wireless technology, you obtain reliable, interference-free communication, particularly in environments with electromagnetic disturbance. With the license-free 2.4 GHz frequency band and the international approval package, the wireless module can be used worldwide.

Wireless module, Trusted Wireless



| Technical data | |
|---------------------------------|---|
| Application | RS-485 |
| Function | Bidirectional Wireless transceiver MESH |
| Frequency band | 2.4 GHz |
| Wireless standard | Trusted Wireless |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30.5 V DC |
| Connection method | Screw connection |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -20 °C ... 70 °C -4 °F ... 158 °F |
| Wireless approval | Europe, USA, Canada, additional countries in the e-shop |

| Type | Item No. | Pcs./Pkt. |
|-------------------|-------------------------|-----------|
| RAD-EE-2400-RS485 | 1081818 | 1 |

Device servers and gateways ESSENTIAL edition



The ESSENTIAL edition device server features flexible options for transmitting serial data via Ethernet. Numerous serial interface profiles simplify the configuration process for the Modbus gateway functionality.

Interface converter



| Technical data | |
|---------------------------------|---|
| Communication protocol | Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3 |
| Interface | Ethernet RS-232 RS-422 RS-485 |
| Connection method | RJ45 jack, shielded |
| Connection method | D-SUB 9 plug |
| Connection method (RS-422) | D-SUB 9 plug |
| Connection method (RS-485) | D-SUB 9 plug |
| Number of channels | 1 |
| Transmission speed | 10/100 Mbps, auto negotiation |
| Transmission length | ≤ 100 m (shielded twisted pair) |
| Transmission length | 15 m |
| Transmission length (RS-422) | ≤ 1200 m |
| Degree of protection | IP40 |
| Ambient temperature (operation) | 0 °C ... 55 °C |

Signal conditioners and measuring transducers



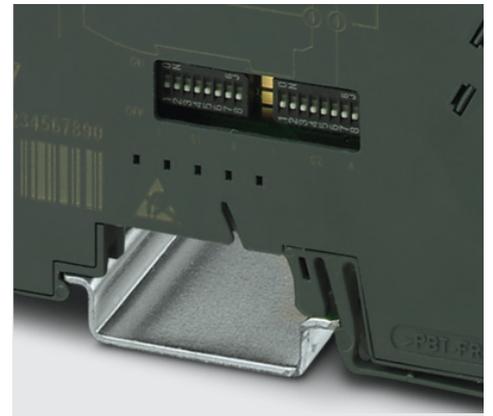
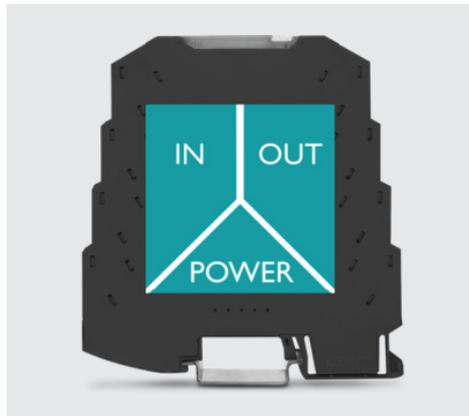
Signal conditioners and measuring transducers

With our signal conditioners and measuring transducers, process signals can be galvanically isolated, converted, filtered and amplified to get an application without interference and faults. Signal conditioners and measuring transducers from the ESSENTIAL edition product family offer you signal conditioning in the most common areas. The focus is on basic functionality that covers 90% of applications.

Product range overview

Signal conditioners and measuring transducers for standard applications ESSENTIAL edition **67**

MINI Analog



Highly compact and focused

The highly compact signal conditioners MINI Analog ESSENTIAL edition offer basic functionality focused on the main signals used in the market. The modules save space in your cabinet.

Easy and Safe

Easy in use without software. Focused on DIP-Switches. Safe and correct signals because of consistent galvanic isolation of Inputs, Outputs and Power.

Your advantages:

- ✓ Space saving with only 6,2 mm width
- ✓ Easy in use with DIP switch configuration
- ✓ Correct signals with consistent galvanic isolation
- ✓ High temperature range with low power loss

Signal conditioners and measuring transducers for standard applications ESSENTIAL edition



The highly compact MINI Analog signal conditioners from the ESSENTIAL Edition product family offer basic functionality focused on the main signals used in the market. The modules save space in your control cabinet.

ESSENTIAL edition, Input signal conditioner, Input signal Current, Output signal Current



| Technical data | |
|---------------------------------|-----------------------|
| Number of channels | 1 |
| Connection method | Screw connection |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current input signal | 4 mA ... 20 mA |
| Output signal current | 2x 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| MINI MCR-BL-I-2I | 2810829 | 1 |

ESSENTIAL edition, Repeater power supply, Input signal Current, Output signal Current



| Technical data | |
|---------------------------------|---|
| Number of channels | 1 |
| Connection method | Screw connection |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current input signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Transmitter supply voltage | U _B - max. 4.5 V for load 0 mA ... 20 mA |
| Output signal current | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|---------------------|----------|-----------|
| MINI MCR-BL-RPS-I-I | 2810476 | 1 |

ESSENTIAL edition, Temperature transmitter, Input loop-powered



| Technical data | |
|---------------------------------|---|
| Number of channels | 1 |
| Connection method | Screw connection |
| Delivery state | Not configured |
| Available input sources | Resistance thermometer: Pt 100 (IEC 60751/EN 60751) |
| Supply voltage range | 12 V DC ... 30 V DC |
| Feed-in | Input loop-powered |
| Output signal current | 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|---------------------------|----------|-----------|
| MINI MCR-BL-PT100-I-LP-NC | 2810609 | 1 |

ESSENTIAL edition, Temperature transmitter



| Technical data | |
|---------------------------------|---|
| Number of channels | 1 |
| Connection method | Screw connection |
| Delivery state | Not configured |
| Available input sources | Resistance thermometer: Pt 100 (IEC 60751/EN 60751) |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Output signal current | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|------------------------|----------|-----------|
| MINI MCR-BL-PT100-I-NC | 2810489 | 1 |

ESSENTIAL edition, Signal conditioner, Input signal Current and Voltage, Output signal Current and Voltage



| Technical data | |
|---------------------------------|---|
| Number of channels | 1 |
| Connection method | Screw connection |
| Delivery state | Standard configuration |
| Supply voltage range | 19.2 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/ |
| Current input signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Voltage input signal | 0 V ... 10 V / 0 V ... 5 V |
| Output signal current | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Output signal voltage | 0 V ... 10 V / 0 V ... 5 V |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|-------------------|----------|-----------|
| MINI MCR-BL-UI-UI | 1070346 | 1 |

ESSENTIAL edition, Signal conditioner, Input signal Current, Output signal Current



| Technical data | |
|---------------------------------|---------------------------------|
| Number of channels | 1 |
| Connection method | Screw connection |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current input signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Output signal current | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|-----------------|----------|-----------|
| MINI MCR-BL-I-I | 2810463 | 1 |

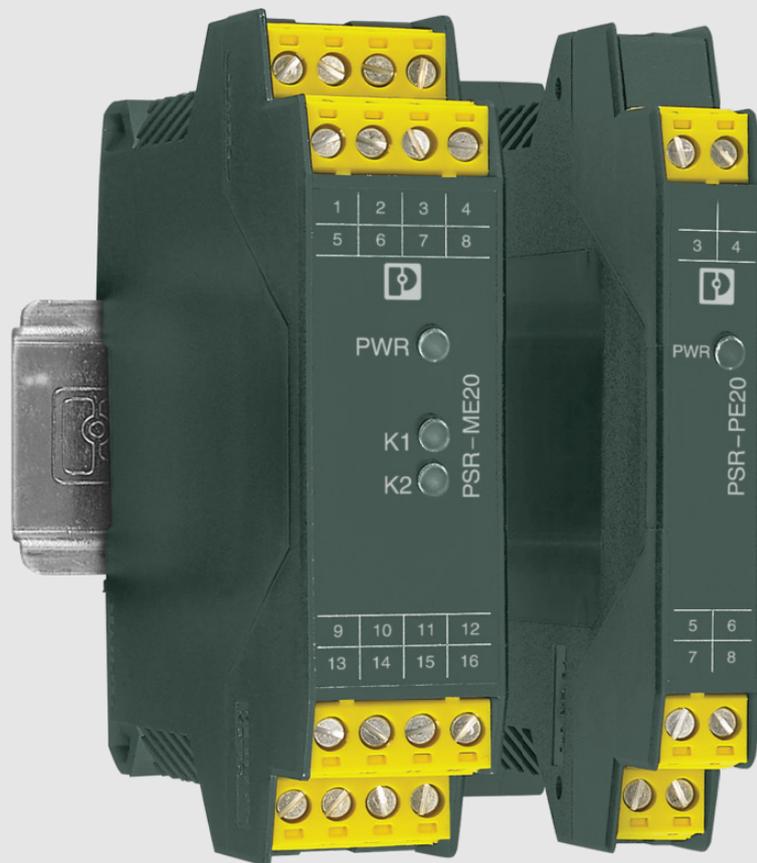
ESSENTIAL edition, Signal conditioner, Input signal Voltage, Output signal Current



| Technical data | |
|---------------------------------|-----------------------|
| Number of channels | 1 |
| Connection method | Screw connection |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Voltage input signal | 0 V ... 10 V |
| Output signal current | 4 mA ... 20 mA |
| Ambient temperature (operation) | -10 °C ... 60 °C |
| Width | 6.2 mm |

| Type | Item No. | Pcs./Pkt. |
|-------------------|----------|-----------|
| MINI MCR-BL-U-I-4 | 2810492 | 1 |

Safety relay modules and sensors



Safety relay modules and sensors

You can use our safety relays to realize reliable safety functions in machines and systems. You can monitor signals from emergency switching off buttons, light grids, and safety door switches, and initiate a safe state when necessary. The ESSENTIAL edition product range includes safety relays for machine building and safe coupling relays for the process industry.

Product range overview

| | |
|--|-----------|
| Safety relays ESSENTIAL edition | 73 |
| Safe coupling relays ESSENTIAL edition | 74 |

Certified safety technology



You can protect your machines and systems reliably with our ESSENTIAL edition safety relays. The ESSENTIAL edition safety relays cover all safety-related basic functions for use in machine building and in the process industry.

The PSR-ME20 safety relay is suitable for monitoring various safety functions, such as emergency switching off functions, light grids, and safety doors. In addition, the PSR-ME30 and PSR-ME40 contact extensions are available with instantaneous or delayed enabling paths. Use our safe coupling relays PSR-PE20 and PSR-PE60 for emergency-shutdown applications as well as for electrical isolation and power adjustment in the processing environment.

All ESSENTIAL edition safety relays are TÜV-certified and safeguard your machines and systems in accordance with applicable safety regulations up to SIL 2/SIL 3.



Several functions in just one device

Our PSR-ME20 safety relay for machine building is multifunctional in use. The device can reliably monitor signals from emergency switching off buttons, light grids, and safety door switches, and can initiate a safe state when necessary. The safety relay is ideally suited for flexible applications with just a few safety functions.



For universal use

The ESSENTIAL edition safety relays are TÜV-certified and have all necessary international approvals for use anywhere in the world.



Space saving with a compact design

With a small housing width of just 12.5 mm, our safe coupling relays PSR-PE20 and PSRPE60 are particularly space-saving. The device is suitable for low-demand applications in the processing environment. It has an internal 1oo3 structure and can implement emergency shutdowns up to SIL 3.

Your advantages:

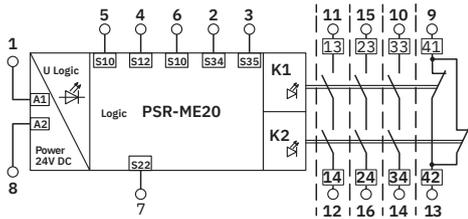
- ✓ Approvals for all global markets
- ✓ Safe use in machine building up to PL d in accordance with EN ISO 13849-1 and SIL 2 in accordance with IEC 62061
- ✓ Safe use in the processing environment up to SIL 3 in accordance with IEC 61508, IEC 61511, and IEC 50156

Safety relays ESSENTIAL edition



Our PSR-ME20 safety relay for machine building is multifunctional in use. The device can reliably monitor signals from emergency switching off buttons, light grids, and safety door switches, and can initiate a safe state when necessary. In addition, the PSR-ME30 and PSR-ME40 contact extensions are available with instantaneous or delayed enabling paths.

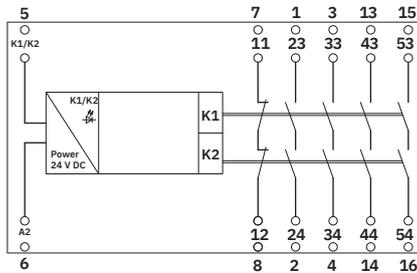
PSRclassic, Safety relays



| Common technical data | |
|---------------------------------|---|
| Approvals | |
| Application | Emergency stop Safety door Light grid |
| Function | Automatic start manual, monitored start |
| Connection method | Screw connection |
| Contact switching type | 3 enabling current paths 2 NC parallel |
| Category | EN ISO 13849, Category 3 EN ISO 13849, Performance Level d IEC 61508 - High demand, SIL 2 |
| Input voltage range | 20.4 V ... 26.4 V |
| Rated control supply voltage | 24 V DC |
| Rated control supply current | 70 mA |
| Ambient temperature (operation) | -20 °C ... 55 °C (observe derating) |
| Width | 22.5 mm |

| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PSR-ME20-3NO-1NC-24DC-SC | 1301402 | 1 |

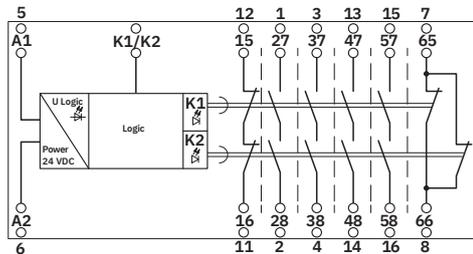
PSRclassic, Safety relays



| Common technical data | |
|---------------------------------|---|
| Approvals | |
| Application | Extension module |
| Connection method | Screw connection |
| Contact switching type | 4 enabling current paths 2 N/C contacts in series |
| Category | EN ISO 13849, Category 3 EN ISO 13849, Performance Level d IEC 61508 - High demand, SIL 2 |
| Input voltage range | 20.4 V ... 26.4 V |
| Ambient temperature (operation) | -20 °C ... 55 °C (observe derating) |
| Width | 22.5 mm |

| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PSR-ME30-4NO-1NC-24DC-SC | 1397656 | 1 |

PSRclassic, Safety relays



| Common technical data | |
|---------------------------------|---|
| Approvals | |
| Application | Extension module |
| Function | With time function |
| Connection method | Screw connection |
| Contact switching type | 4 enabling current paths 2 N/C contacts in series |
| Category | EN ISO 13849, Category 3 EN ISO 13849, Performance Level d IEC 61508 - High demand, SIL 2 |
| Input voltage range | 20.4 V ... 26.4 V |
| Rated control supply voltage | 24 V DC |
| Rated control supply current | 77 mA |
| Ambient temperature (operation) | -20 °C ... 55 °C (observe derating) |
| Width | 22.5 mm |

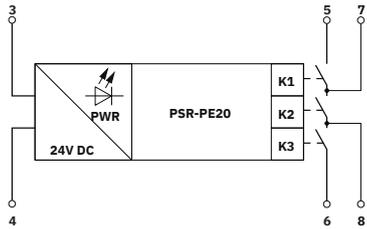
| Type | Item No. | Pcs./Pkt. |
|--------------------------|----------|-----------|
| PSR-ME40-4NO-2NC-24DC-SC | 1397654 | 1 |

Safe coupling relays ESSENTIAL edition



With a small housing width of just 12.5 mm, our safe coupling relays PSR-PE20 and PSR-PE60 are particularly space-saving. The device is suitable for low-demand applications in the processing environment. It has an internal 1oo3 structure and can implement emergency shutdowns up to SIL 3.

PSRclassic, Coupling relay

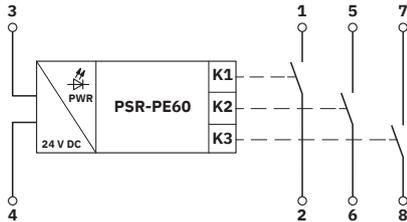


Common technical data

| | |
|-----------------------------------|---|
| Application | Safe switch off Low demand |
| Function | Test pulse filter Forcibly guided contacts |
| Connection method | Screw connection |
| Contact switching type | 1 enabling current path |
| Switching voltage | min. 12 V DC max. 250 V AC/DC (Observe the load curve) |
| Input voltage range | 21.6 V DC ... 26.4 V DC |
| Rated control supply voltage (DC) | 24 V DC -10 % ... +10 % |
| Rated control supply current | 40 mA |
| Ambient temperature (operation) | -40 °C ... 70 °C (observe derating) |
| Width | 12.5 mm |

| Type | Item No. | Pcs./Pkt. |
|----------------------|----------|-----------|
| PSR-PE20-1NO-24DC-SC | 1119573 | 1 |

PSRclassic, Coupling relay

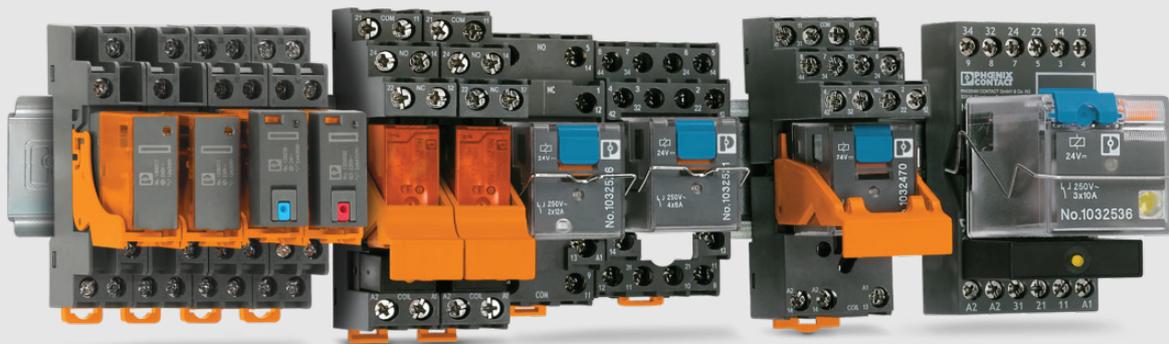


Common technical data

| | |
|-----------------------------------|--|
| Application | Safe switch off Safe switch on High demand Low demand |
| Function | Test pulse filter |
| Connection method | Screw connection |
| Contact switching type | 3 enabling current paths |
| Switching voltage | min. 12 V DC max. 250 V AC/DC |
| Rated control supply voltage (DC) | 24 V DC -10 % ... +10 % ("1" signal) |
| Rated control supply current | typ. 31 mA |
| Ambient temperature (operation) | -40 °C ... 70 °C (observe derating) |
| Width | 12.5 mm |

| Type | Item No. | Pcs./Pkt. |
|----------------------|----------|-----------|
| PSR-PE60-3NO-24DC-SC | 1436353 | 1 |

Relays and optocouplers



Relays and optocouplers

In industrial applications, electromechanical and solid-state relays perform the important tasks of switching, isolating, amplifying, measuring, and monitoring between the control system and devices in the field.

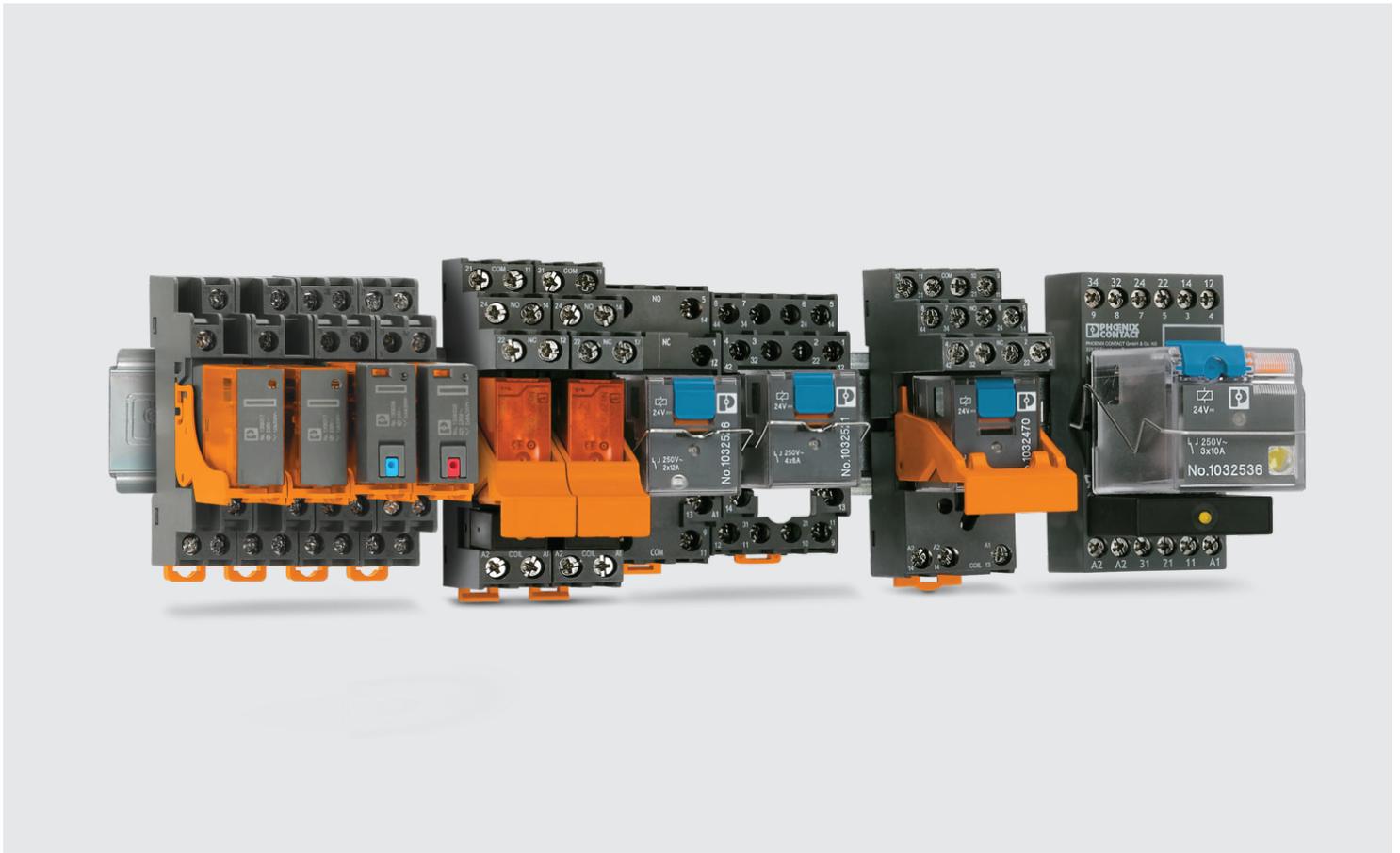
The ESSENTIAL edition product family from Phoenix Contact includes control relays, timer relays, and monitoring relays for the diagnosis of various electrical variables. This allows you to flexibly construct different relay solutions according to on-site needs.

Product range overview

Coupling relays

| | |
|---|-----------|
| Industrial relay system with basic functionality ESSENTIAL edition | 81 |
|---|-----------|

| | |
|--------------------------------|-----------|
| Timer relays ESSENTIAL edition | 93 |
|--------------------------------|-----------|



ESSENTIAL edition is an efficient, modular industrial relay system with basic functions, consisting of relays, relay bases, retaining brackets, and plug-in function modules. Take advantage of a flexible range with one to four changeover contacts and input voltages of 12 V DC to 230 V AC.

From product development to series production – the high quality of Phoenix Contact products is ensured through consistent testing in accordance with uniform directives and company standards.



ECOR-1

The 16 mm narrow ECOR-1 base series with screw connection is suitable for miniature power relays and miniature switching relays with one or two changeover contacts. Currents up to 12 A can be switched. Relay bases are available with a bolt connection.



ECOR-2

The ECOR-2 base series is suitable for industrial relays with two or four changeover contacts. Currents up to 12 A are no problem for these bases. Relay bases are available either with screw connection or bolt connection. In addition, a width-optimized ECOR-2 base with plugging capabilities for input / interference suppression modules is available for industrial relays with two changeover contacts.



ECOR-4

The 44 mm wide ECOR-4 base series is ideal for power relays with four FASTON contacts. Switching currents up to 10 A can be implemented here. The relay bases are available as a bolt connection with screw connection input/interference suppression modules.



100 % tested

Securing high product quality with 100 % testing of isolation and function.

Additional type tests:

- Dielectric test
- Function test

The following type tests are also performed:

- Conductor pull-out test
- Dielectric test
- Temperature increase test



Reliable system for high machine and system availability

Plastic relay retaining bracket with eject function and metal relay retaining bracket



Plug-in modules

Function plug-in modules for coil suppression and status display.



ECOR-1 FASTON relay

With the ECOR-1 FASTON relay in 1CO & 2CO contact switching type available with or without manual actuation in various voltage versions, Phoenix Contact offers solutions for industrial areas that require robustness and a space-saving design.



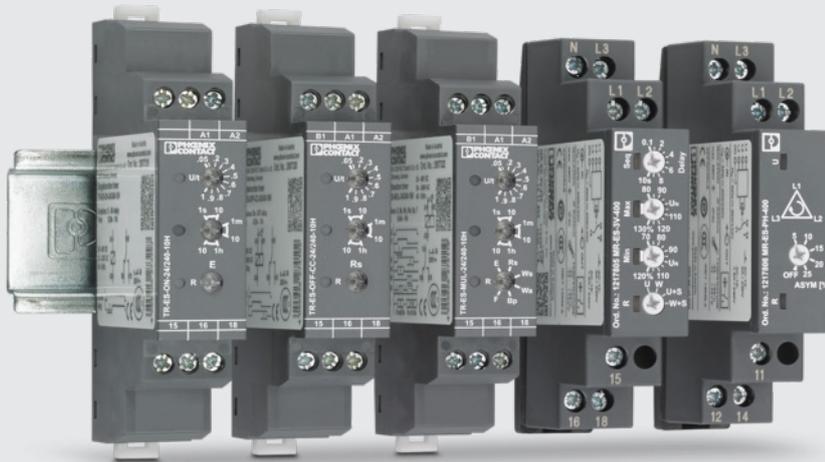
Easy wiring

Easy wiring with screw connection. Also with ferrules or bold connection available.

Your advantages:

- ✓ High cost efficiency
- ✓ Relays from 1 to 4 changeover contacts
- ✓ Robust bolt connection technology
- ✓ UL and CSA approval

Time and monitoring relays



Compact timer relays in a 17.5 mm wide housing for controlling time sequences. Single-function timer relays, multi-functional timer relays, and monitoring relays are suitable for most universal requirements. The ESSENTIAL edition timer relays can be used as an efficient application for many time delay tasks. The ESSENTIAL edition monitoring relays quickly recognize deviations from key system parameters. They report these deviations or shut system parts down selectively.

Your advantages:

- ✓ Easy to select, thanks to just 3 articles which can satisfy most universal time delay tasks
- ✓ Optimum time control with setting range from milliseconds to 10 hours
- ✓ Monitoring relay ideally suited for simple monitoring tasks
- ✓ Easy handling, as time parameters can be adjusted conveniently on the front of the housing
- ✓ Space saving, thanks to a compact housing
- ✓ CCC approval



Find the right product quickly

With switch-on delay, switch-off delay or multifunctional: available in just three versions, they cover all applications associated with conventional time control.



Space-saving

Thanks to the compact installation housing, they are ideally suited for building installation. As reasonably priced solutions with numerous functions, the products are just as ideally suited for series production.



Simple operation

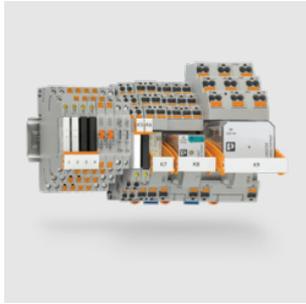
Parameters can be set conveniently via the rotary switch on the front of the housing. The timer relays feature a precise setting range of milliseconds to up to 10 hours.



Three-phase voltage monitoring relays

The ESSENTIAL edition MR-ES series voltage monitoring relays can detect grid and voltage failures early enough to safeguard the reliable operation of devices and systems. You can select between two device types: Voltage or phase monitoring.

Coupling relays



Coupling relays are an indispensable part of industrial automation, where reliability, safety, and efficiency are of great importance. Rely on our wide range of solid-state relays and electromechanical relays, available as plug-in versions or as complete modules. Coupling relays, force-guided coupling relays, highly compact relay modules, and relays for the Ex area also help achieve high system availability in your application.



Industrial relay system with basic functionality ESSENTIAL edition

With ESSENTIAL edition industrial relays from Phoenix Contact, various relay solutions can be constructed flexibly according to on-site needs.

ESSENTIAL edition, Relay base, ECOR-1



| Technical data | |
|---------------------------------|--------------------|
| Input voltage | 250 V AC/DC |
| Nominal current | 12 A |
| Connection method | Screw connection |
| Ambient temperature (operation) | -25 °C ... 70 °C |
| Width | 15.7 mm |
| Height | 79.2 mm |
| Depth | 69 mm (ECOR-RH-1L) |

| | Type | Item No. | Pcs./Pkt. |
|---|--------------------|----------|-----------|
| | ECOR-1-BSC3/2X21 | 2907518 | 10 |
| Accessories | | | |
| ESSENTIAL edition, Relay retaining bracket, Plastic | ECOR-RH-1L | 2907524 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode, LED | LDP- 12- 24DC | 2833657 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode, LED | LDP- 12- 24DC | 2833657 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode | DP-12-220 DC | 2907517 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor, LED | LV-120-230AC/110DC | 2833738 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor | V-120-230UC | 2833880 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit RC element | RC-120-230UC | 2833767 | 10 |

ESSENTIAL edition, Relay base, ECOR-1



| Technical data | |
|---------------------------------|----------------------------------|
| Input voltage | ≤ 230 V AC/DC |
| Nominal current | 10 A |
| Connection method | Bolt connection |
| Ambient temperature (operation) | -25 °C ... 55 °C |
| Width | 15.8 mm |
| Height | 71.5 mm |
| Depth | 58.1 mm (with retaining bracket) |

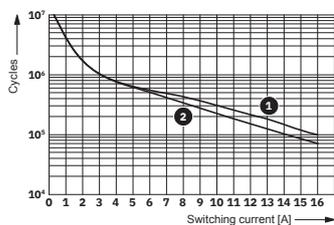
| | Type | Item No. | Pcs./Pkt. |
|---|---------------------|----------|-----------|
| | ECOR-1-BSC2-RT/2X21 | 1027546 | 10 |
| Accessories | | | |
| ESSENTIAL edition, Relay retaining bracket, Plastic | ECOR-RH-1L | 2907524 | 10 |

Single relay, Miniature relay, 1 changeover contact, 12 V DC



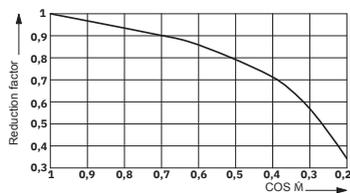
| Common technical data | |
|---------------------------------|-------------------------|
| Response time | 8 ms |
| Release time | 6 ms |
| Contact switching type | 1 changeover contact |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 5 V (At 24 mA) |
| Limiting continuous current | 16 A |
| Switching current | ≥ 10 mA (at 12 V) |
| Inrush current | ≤ 30 A (300 ms) |
| Standards/regulations | IEC 60664 EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Width | 12.7 mm |
| Height | 29 mm |
| Depth | 15.7 mm |

| Input voltage | Type | Item No. | Pcs./Pkt. |
|---------------|----------------------|----------|-----------|
| 12 V DC | REL-MR-BL- 12DC/21HC | 1109537 | 20 |
| 24 V DC | REL-MR-BL- 24DC/21HC | 2906285 | 20 |

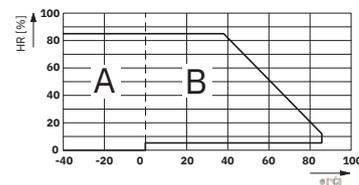


- 1 12 250 V AC, ohmic load (DC coils)
- 2 250 V AC, ohmic load (AC coils)

Electrical service life



Service life reduction factor with various cos phi



Permissible humidity for operation and storage. The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures ≤ 0°C must be prevented Area B: Condensation at ambient temperatures > 0°C must be prevented

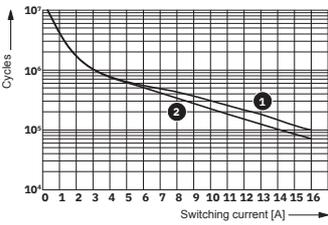
On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature ≤ 25°C.

Single relay, Miniature relay, 1 changeover contact, 24 V AC



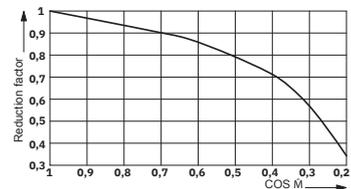
| Common technical data | |
|---------------------------------|--|
| Response time range | 3 ms ... 12 ms (depending on phase relation) |
| Release time range | 2 ms ... 9 ms (depending on phase relation) |
| Contact switching type | 1 changeover contact |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 5 V (At 24 mA) |
| Limiting continuous current | 16 A |
| Switching current | ≥ 10 mA (at 12 V) |
| Inrush current | ≤ 30 A (300 ms) |
| Standards/regulations | IEC 60664 EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Width | 12.7 mm |
| Height | 29 mm |
| Depth | 15.7 mm |

| Input voltage | Type | Item No. | Pcs./Pkt. |
|---------------|----------------------|----------|-----------|
| 24 V AC | REL-MR-BL- 24AC/21HC | 1109540 | 20 |
| 115 V AC | REL-MR-BL-115AC/21HC | 1109542 | 20 |
| 230 V AC | REL-MR-BL-230AC/21HC | 2906288 | 20 |

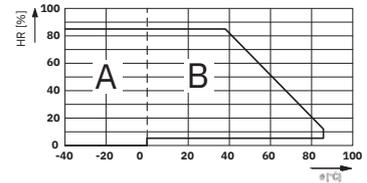


1 12 250 V AC, ohmic load (DC coils)
2 250 V AC, ohmic load (AC coils)

Electrical service life



Service life reduction factor with various cos phi



Permissible humidity for operation and storage. The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures ≤ 0°C must be prevented Area B: Condensation at ambient temperatures > 0°C must be prevented

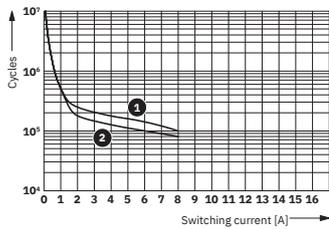
On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature ≤ 25°C.

Single relay, Miniature relay, 2 changeover contacts, 12 V DC



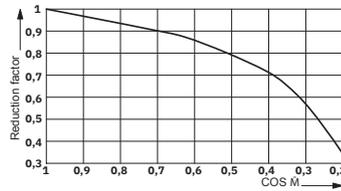
| Common technical data | |
|---------------------------------|-------------------------|
| Response time | 8 ms |
| Release time | 6 ms |
| Contact switching type | 2 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 5 V (at 10 mA) |
| Limiting continuous current | 8 A |
| Switching current | ≥ 10 mA (At 5 V) |
| Inrush current | ≤ 12 A (20 ms) |
| Standards/regulations | IEC 60664 EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Width | 12.7 mm |
| Height | 29 mm |
| Depth | 15.7 mm |

| Input voltage | Type | Item No. | Pcs./Pkt. |
|---------------|-----------------------|----------|-----------|
| 12 V DC | REL-MR-BL- 12DC/21-21 | 1109543 | 20 |
| 24 V DC | REL-MR-BL- 24DC/21-21 | 2906286 | 20 |
| 48 V DC | REL-MR-BL- 48DC/21-21 | 1109544 | 20 |
| 110 V DC | REL-MR-BL-110DC/21-21 | 1109545 | 20 |

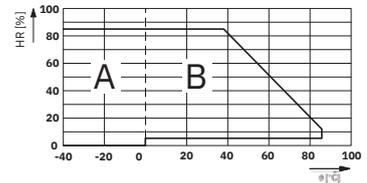


- 1 250 V AC, ohmic load (DC coils)
- 2 250 V AC, ohmic load (AC coils)

Electrical service life



Service life reduction factor with various cos phi



Permissible humidity for operation and storage. The maximum permissible ambient temperature as specified in the data sheet must be observed.

- Area A: Ice buildup at ambient temperatures ≤ 0°C must be prevented
- Area B: Condensation at ambient temperatures > 0°C must be prevented

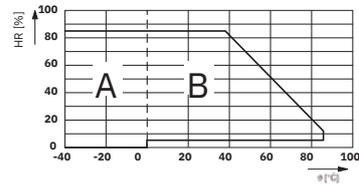
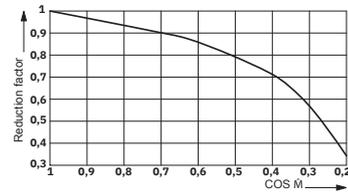
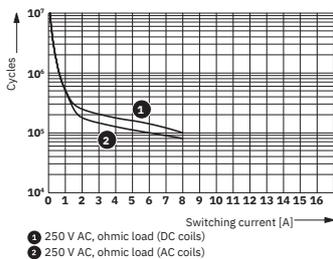
On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature ≤ 25°C.

Single relay, Miniature relay, 2 changeover contacts, 24 V AC



| Common technical data | |
|---------------------------------|--|
| Response time range | 3 ms ... 12 ms (depending on phase relation) |
| Release time range | 2 ms ... 9 ms (depending on phase relation) |
| Contact switching type | 2 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 5 V (at 10 mA) |
| Limiting continuous current | 8 A |
| Switching current | ≥ 10 mA (At 5 V) |
| Inrush current | ≤ 12 A (20 ms) |
| Standards/regulations | IEC 60664 EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Width | 12.7 mm |
| Height | 29 mm |
| Depth | 15.7 mm |

| Input voltage | Type | Item No. | Pcs./Pkt. |
|---------------|-----------------------|----------|-----------|
| 24 V AC | REL-MR-BL- 24AC/21-21 | 1109546 | 20 |
| 115 V AC | REL-MR-BL-115AC/21-21 | 1109569 | 20 |
| 230 V AC | REL-MR-BL-230AC/21-21 | 2906287 | 20 |



Permissible humidity for operation and storage. The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures ≤ 0°C must be prevented
Area B: Condensation at ambient temperatures > 0°C must be prevented

On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature ≤ 25°C.

ESSENTIAL edition, Relay retaining bracket



| Technical data | |
|----------------------------|------------------------|
| Lead content (EU RoHS)_GRP | Lead-free (Pb < 0.1 %) |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| ECOR-RH-1H | 2907523 | 10 |

ESSENTIAL edition, Relay retaining bracket, Plastic



| Technical data | |
|----------------------------|------------------------|
| Lead content (EU RoHS)_GRP | Lead-free (Pb < 0.1 %) |
| Material | Plastic |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| ECOR-RH-1L | 2907524 | 10 |

ESSENTIAL edition, Relay base, ECOR-2



| Technical data | |
|---------------------------------|--------------------|
| Input voltage | 250 V AC/DC |
| Nominal current | 12 A |
| Connection method | Bolt connection |
| Ambient temperature (operation) | -25 °C ... 55 °C |
| Width | 25 mm |
| Height | 68.5 mm |
| Depth | 63 mm (ECOR-RHM-2) |

| Type | Item No. | Pcs./Pkt. |
|---------------------|----------|-----------|
| ECOR-2-BSC2-RT/2X21 | 2908341 | 10 |

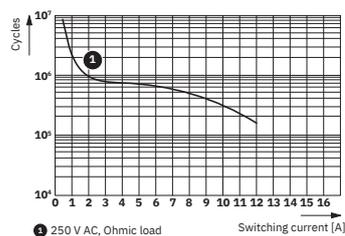
| Accessories | | Type | Item No. | Pcs./Pkt. |
|---|--|------------|----------|-----------|
| ESSENTIAL edition, Relay retaining bracket, Plastic | | ECOR-RH-2L | 1051972 | 10 |

ESSENTIAL edition, Single relay, Industrial relay, compact, 2 changeover contacts, 24 V AC

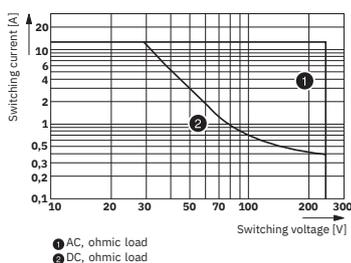


| Common technical data | |
|---------------------------------|------------------------------|
| Response time range | 5 ms ... 15 ms |
| Release time range | 5 ms ... 20 ms |
| Contact switching type | 2 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 12 V (10 mA) |
| Limiting continuous current | 12 A |
| Switching current | ≥ 10 mA (12 V) |
| Inrush current | ≤ 24 A (20 ms, N/O contacts) |
| Standards/regulations | EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |

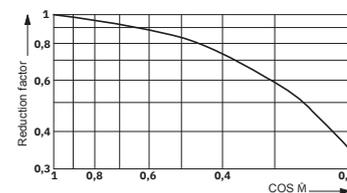
| Input voltage | Width | Height | Depth | Type | Item No. | Pcs./Pkt. |
|---------------|---------|--------|---------|------------------------|----------|-----------|
| 24 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 24AC/2X21 | 1109555 | 10 |
| 115 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-115AC/2X21 | 1109556 | 10 |
| 230 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-230AC/2X21 | 1032530 | 10 |
| 230 V AC | | | | REL-IR-BL-230AC/2X21 | 1032528 | 10 |



Electrical service life



Interrupting rating



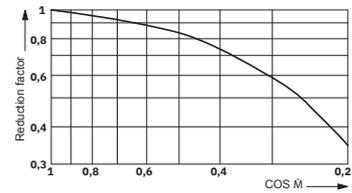
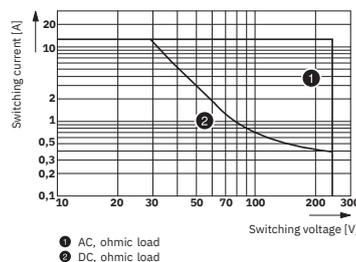
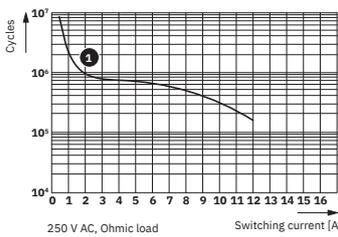
Service life reduction factor

ESSENTIAL edition, Single relay, Industrial relay, compact, 2 changeover contacts, 12 V DC



| Common technical data | |
|---------------------------------|------------------------------|
| Response time | 15 ms |
| Release time | 10 ms |
| Contact switching type | 2 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 12 V (10 mA) |
| Limiting continuous current | 12 A |
| Switching current | ≥ 10 mA (12 V) |
| Inrush current | ≤ 24 A (20 ms, N/O contacts) |
| Standards/regulations | EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |

| Input voltage | Width | Height | Depth | Type | Item No. | Pcs./Pkt. |
|---------------|---------|--------|---------|------------------------|----------|-----------|
| 12 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 12DC/2X21 | 1109547 | 10 |
| 24 V DC | | | | REL-IR-BL- 24DC/2X21 | 1032470 | 10 |
| 24 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 24DC/2X21 | 1032526 | 10 |
| 48 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 48DC/2X21 | 1109548 | 10 |
| 110 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-110DC/2X21 | 1109550 | 10 |
| 125 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-125DC/2X21 | 1109553 | 10 |
| 220 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-220DC/2X21 | 1109554 | 10 |



Electrical service life

ESSENTIAL edition, Relay base, ECOR-2



| Technical data | |
|---------------------------------|------------------|
| Input voltage | 300V AC/DC |
| Nominal current | 12A |
| Connection method | Screw connection |
| Ambient temperature (operation) | -25°C ... 85 °C |
| Width | 27mm |
| Height | 78.5mm |
| Depth | 86mm (ECOR-RH-2) |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| ECOR-2-BSC3/4X21 | 2907521 | 10 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|--------------------|----------|-----------|
| ESSENTIAL edition, Relay retaining bracket, Plastic | ECOR-RH-2L | 1051972 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode, LED | LDP- 12- 24DC | 2833657 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode | DP-12-220 DC | 2907517 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor, LED | LV-120-230AC/110DC | 2833738 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor | V-120-230UC | 2833880 | 10 |
| ESSENTIAL edition, Plug-in module for relay bases, Protective circuit RC element | RC-120-230UC | 2833767 | 10 |

ESSENTIAL edition, Relay base, ECOR-2



| Technical data | |
|---------------------------------|--------------------|
| Input voltage | 250 V AC/DC |
| Nominal current | 5 A |
| Connection method | Bolt connection |
| Ambient temperature (operation) | -25 °C ... 55 °C |
| Width | 29.8 mm |
| Height | 64.9 mm |
| Depth | 63 mm (ECOR-RHM-2) |

| Type | Item No. | Pcs./Pkt. |
|---------------------|----------|-----------|
| ECOR-2-BSC2-RT/4X21 | 2908214 | 10 |

| Accessories | Type | Item No. | Pcs./Pkt. |
|---|------------|----------|-----------|
| ESSENTIAL edition, Relay retaining bracket, Plastic | ECOR-RH-2L | 1051972 | 10 |

ESSENTIAL edition, Relay base, ECOR-2



| Technical data | |
|---------------------------------|--------------------------------|
| Input voltage | ≤ 230 V AC/DC |
| Connection method | Screw connection |
| Ambient temperature (operation) | -25 °C ... 70 °C |
| Width | 27 mm |
| Height | 75 mm |
| Depth | 84 mm (with retaining bracket) |

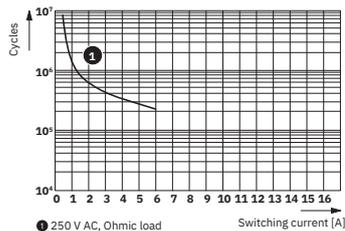
| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| ECOR-2-BSC2/4X21 | 1089994 | 10 |

ESSENTIAL edition, Single relay, Industrial relay, compact, 4 changeover contacts, 12 V DC

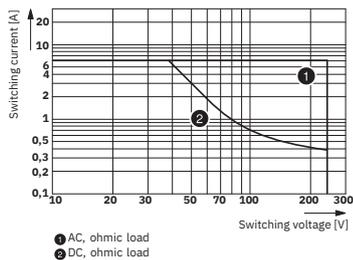


| Common technical data | |
|---------------------------------|------------------------------|
| Response time | 15 ms |
| Release time | 10 ms |
| Contact switching type | 4 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 12 V (10 mA) |
| Limiting continuous current | 6 A |
| Switching current | ≥ 10 mA (12 V) |
| Inrush current | ≤ 12 A (20 ms, N/O contacts) |
| Standards/regulations | EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |

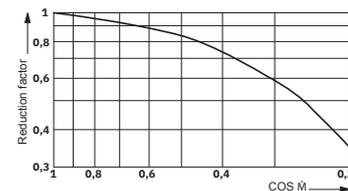
| Input voltage | Width | Height | Depth | Type | Item No. | Pcs./Pkt. |
|---------------|---------|--------|---------|------------------------|----------|-----------|
| 12 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 12DC/4X21 | 1109557 | 10 |
| 24 V DC | | | | REL-IR-BL- 24DC/4X21 | 1032521 | 10 |
| 24 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 24DC/4X21 | 1032527 | 10 |
| 48 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 48DC/4X21 | 1109558 | 10 |
| 110 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-110DC/4X21 | 1109560 | 10 |
| 125 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-125DC/4X21 | 1109561 | 10 |
| 220 V DC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-220DC/4X21 | 1109562 | 10 |



Electrical service life



Interrupting rating



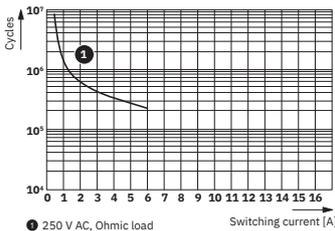
Service life reduction factor

ESSENTIAL edition, Single relay, Industrial relay, compact, 4 changeover contacts, 24 V AC

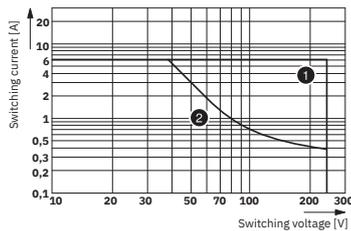


| Common technical data | |
|---------------------------------|------------------------------|
| Response time range | 5 ms ... 15 ms |
| Release time range | 5 ms ... 20 ms |
| Contact switching type | 4 changeover contacts |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 12 V (10 mA) |
| Limiting continuous current | 6 A |
| Switching current | ≥ 10 mA (12 V) |
| Inrush current | ≤ 12 A (20 ms, N/O contacts) |
| Standards/regulations | EN 61810-1 |
| Ambient temperature (operation) | -40 °C ... 70 °C |

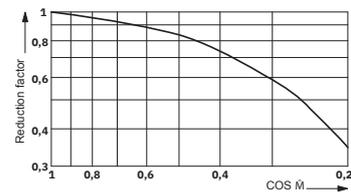
| Input voltage | Width | Height | Depth | Type | Item No. | Pcs./Pkt. |
|---------------|---------|--------|---------|------------------------|----------|-----------|
| 24 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L- 24AC/4X21 | 1109563 | 10 |
| 115 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-115AC/4X21 | 1109564 | 10 |
| 230 V AC | 22.5 mm | 28 mm | 35.5 mm | REL-IR-BL/L-230AC/4X21 | 1032531 | 10 |
| 230 V AC | - | - | - | REL-IR-BL-230AC/4X21 | 1032529 | 10 |



Electrical service life



Interrupting rating



Service life reduction factor

ESSENTIAL edition, Relay retaining bracket



| Technical data | |
|----------------------------|------------------------|
| Lead content (EU RoHS)_GRP | Lead-free (Pb < 0.1 %) |

| Type | Item No. | Pcs./Pkt. |
|-----------|----------|-----------|
| ECOR-RH-2 | 2907526 | 10 |

ESSENTIAL edition, Relay retaining bracket, Metal



| Technical data | |
|----------------------------|------------------------|
| Lead content (EU RoHS)_GRP | Lead-free (Pb < 0.1 %) |
| Material | Metal |

| Type | Item No. | Pcs./Pkt. |
|------------|----------|-----------|
| ECOR-RHM-2 | 2908533 | 10 |

ESSENTIAL edition, Relay base, ECOR-4



| Technical data | |
|---------------------------------|------------------|
| Input voltage | ≤ 230 V AC/DC |
| Connection method | Screw connection |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Width | 44.1 mm |
| Height | 83.3 mm |
| Depth | 30 mm |

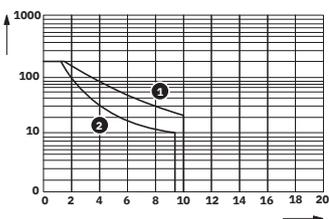
| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| ECOR-4-BSC2/4X21 | 1157947 | 10 |

ESSENTIAL edition, Single relay, Single relay, 4 changeover contacts, 24 V DC



| Common technical data | |
|---------------------------------|-----------------------|
| Contact switching type | 4 changeover contacts |
| Contact material | AgSnO |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 17 V (10 mA) |
| Limiting continuous current | 10 A |
| Switching current | ≥ 10 mA (17 V) |
| Standards/regulations | EN 61810 IEC 60664 |
| Ambient temperature (operation) | -25 °C ... 55 °C |
| Width | 41.5 mm |
| Height | 28 mm |
| Depth | 36.5 mm |

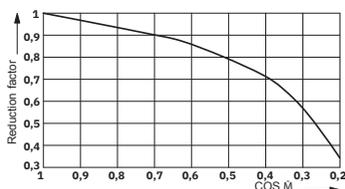
| Input voltage | Response time | Release time | Type | Item No. | Pcs./Pkt. |
|---------------|---------------------------------------|---------------------------------------|-----------------------|----------|-----------|
| 24 V DC | ≤ 20 ms | ≤ 20 ms | REL-PR-BL- 24DC/4X21 | 1157980 | 10 |
| 110 V DC | ≤ 20 ms | ≤ 20 ms | REL-PR-BL-110DC/4X21 | 1157976 | 10 |
| 125 V DC | ≤ 20 ms | ≤ 20 ms | REL-PR-BL-125DC/4X21 | 1157973 | 10 |
| 220 V DC | ≤ 20 ms | ≤ 20 ms | REL-PR-BL-220DC/4X21 | 1157968 | 10 |
| 115 V AC | ≤ 20 ms (depending on phase relation) | ≤ 20 ms (depending on phase relation) | REL-PR-BL-115AC/4X21 | 1157971 | 10 |
| 230 V AC | ≤ 20 ms (depending on phase relation) | ≤ 20 ms (depending on phase relation) | REL-PR-BL-230VAC/4X21 | 1157966 | 10 |



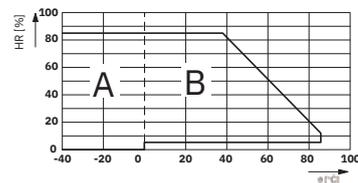
- 1 250 V AC resistive load
- 2 250 V AC Inductive load (COSφ = 0,4)

Electrical service life

0 2 4 6 8 10 12 14 16 18 20



Service life reduction factor



Permissible humidity for operation and storage.

The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures ≤ 0°C must be prevented

Area B: Condensation at ambient temperatures > 0°C must be prevented

On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature ≤ 25°C.

ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode, LED



| Technical data | |
|---------------------|--|
| Input voltage range | 12 V DC ... 24 V DC ±20 % 12 V DC ... 24 V DC |

| Type | Item No. | Pcs./Pkt. |
|---------------|----------|-----------|
| LDP- 12- 24DC | 2833657 | 10 |

ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor, LED



| Technical data | |
|---------------------|--|
| Input voltage | 110 V DC |
| Input voltage range | 120 V AC ... 230 V AC 120 V AC ... 230 V AC |

| Type | Item No. | Pcs./Pkt. |
|--------------------|----------|-----------|
| LV-120-230AC/110DC | 2833738 | 10 |

ESSENTIAL edition, Plug-in module for relay bases, Protective circuit RC element



| Technical data | |
|---------------------|--|
| Input voltage range | 120 V AC/DC ... 230 V AC/DC 120 V AC/DC ... 230 V AC/DC |

| Type | Item No. | Pcs./Pkt. |
|--------------|----------|-----------|
| RC-120-230UC | 2833767 | 10 |

ESSENTIAL edition, Plug-in module for relay bases



| Technical data | |
|---------------------|--|
| Input voltage range | 48 V DC ... 60 V DC 48 V DC ... 60 V DC |

| Type | Item No. | Pcs./Pkt. |
|----------------|----------|-----------|
| LDP3- 48- 60DC | 2833783 | 10 |

ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Varistor



| Technical data | |
|---------------------|--|
| Input voltage range | 120 V AC/DC ... 230 V AC/DC 120 V AC/DC ... 230 V AC/DC |

| Type | Item No. | Pcs./Pkt. |
|-------------|----------|-----------|
| V-120-230UC | 2833880 | 10 |

ESSENTIAL edition, Plug-in module for relay bases, Protective circuit Freewheeling diode



Technical data

| | |
|---------------------|--|
| Input voltage range | 12 V DC ... 220 V DC ±20 % 12 V DC ... 220 V DC |
|---------------------|--|

Type

DP-12-220 DC

Item No.

[2907517](#)

Pcs./Pkt.

10

Timer relays ESSENTIAL edition



The ESSENTIAL edition timer relays can be used as an efficient application for many time delay tasks. With switch-on delay, switch-off delay, or multifunctional: available in just three versions, they cover all applications associated with conventional time control.

Timer relay



| Technical data | |
|---------------------------------|--|
| Nominal input voltage range | 24 V DC ... 48 V DC -10 % ... +10 % 24 V AC ... 240 V AC -15 % ... +10 % |
| Time range | 50 ms ... 10 h (6 time end ranges) |
| Time function | E: With switch-on delay Rs: Delay release Ws: Pulse output (rising edge) and control contact Wa: Pulse output (falling edge) and control contact Bp: Cycle pulse output (initial status is 0) F: Switch Wu: Pulse output (rising edge) and voltage control |
| Contact switching type | 1 floating changeover contact |
| Maximum switching voltage | 250 V AC |
| Standards/regulations | IEC 61812-1 |
| Ambient temperature (operation) | -25 °C ... 50 °C |
| Width | 17.5 mm |
| Height | 98 mm |
| Depth | 57.9 mm |

| Type | Item No. | Pcs./Pkt. |
|------------------|----------|-----------|
| TR-ES-1T-MUL-10H | 2909777 | 10 |

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