

Hazardous location products

CID2-certified product portfolio

PHOENIX CONTACT

CID2 in hazardous location applications

CID2 stands for Class I, Division 2. This classification is part of North America's National Electrical Code (NEC) and is used to designate hazardous locations where flammable gases, vapors, or liquids are present, but not under normal operating conditions. Instead, these substances are confined within closed systems and are only likely to escape in case of accidental rupture or breakdown.

The other lesser-used designation of Zone (rather than Division) under UL guidance is approved for reciprocal use.

Phoenix Contact is the market leader for CID2-approved products in the industrial market.

Common automation sectors known for CID2 areas

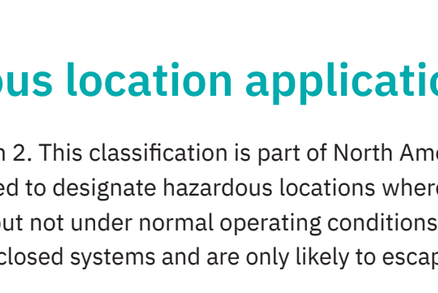


Oil and gas | Energy supply | Pharmaceutical | Food and beverage | Water management | Mining

Common requirements:

Hazardous locations – Classes/divisions

The NEC approval consists of 3 parts:



Class Rating

Class 1 = Gases: Acetylene, hydrogen, ethylene, methane, natural gas

Class 2 = Dusts: Metal dusts, carbon dusts, grain and other dusts

Class 3 = Filings and fibers

Division Rating (or Zones)

Division I
(Hazardous under normal conditions)

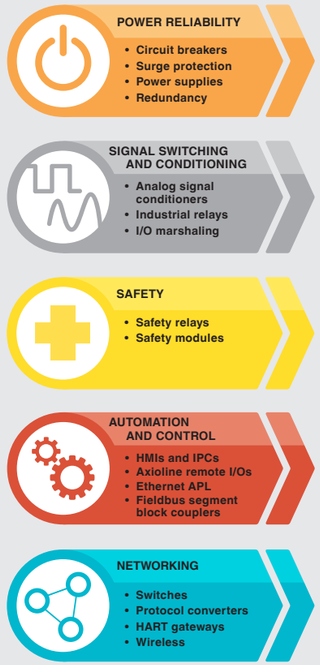
Division II
(Hazardous under abnormal conditions)

Group Rating

Gas sub-groupings: A, B, C, D

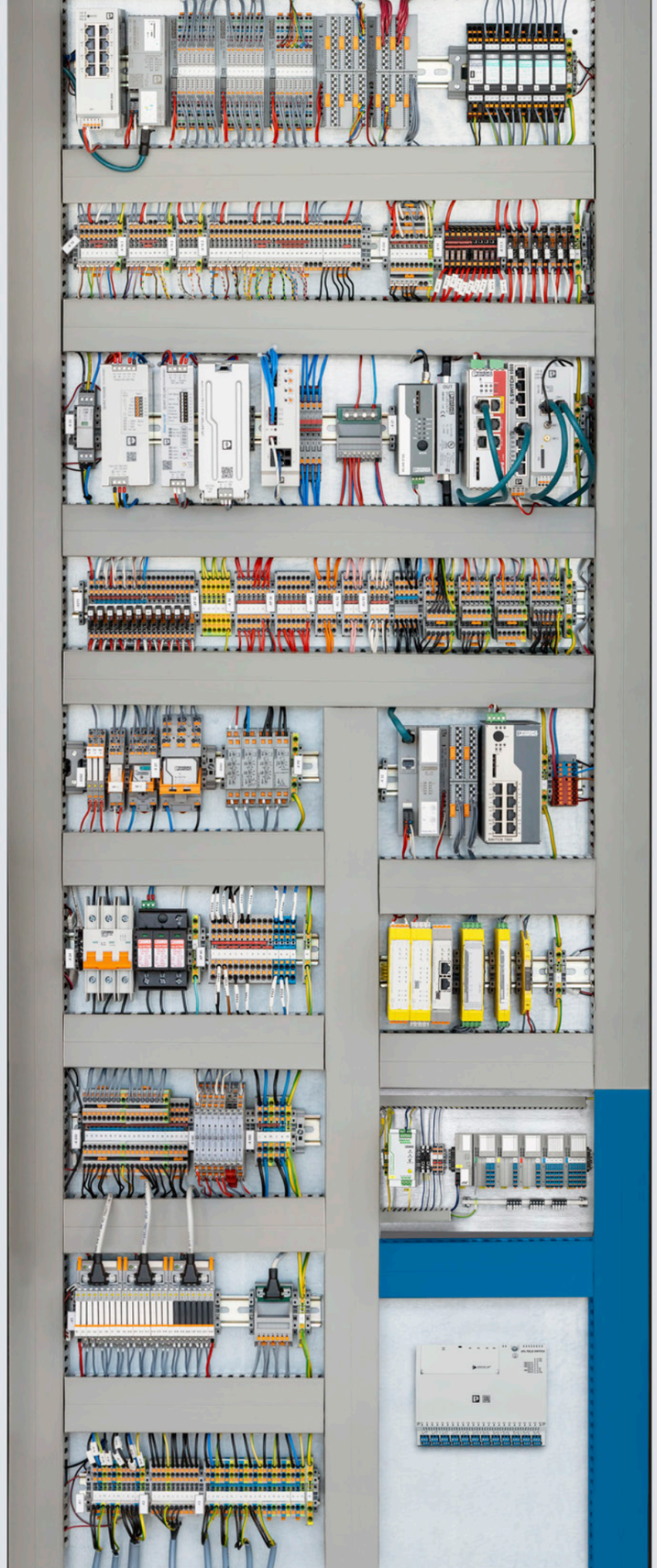
Dust sub-groupings: E, F, G

Example: Class I Division 2, Groups A, B, C, D



Why standardize on CID2-approved products?

- They cover safe area requirements, thus reducing the number of line-item purchases
- This lowers the overhead of stocked materials
- Prevents mishap of accidentally installing a non-approved product into a potentially hazardous location



Contents

Power reliability	4
Circuit breakers	6
Surge protection	7
Power supplies	8
DC/DC converter modules	9
Redundancy modules	10
DC/AC-powered UPS systems	10
UPS systems with capacitor and buffer modules	11
UPS battery modules	11
Signal switching and conditioning	12
Analog signal conditioners	14
Industrial relays	16
I/O marshaling	17
Safety	18
Safety relays	19
Safety I/O	19
Automation and control	20
HMIs and IPCs	22
Axioline remote I/Os	23
Ethernet APL	25
Fieldbus segment block couplers	25
Solutions	25
Networking	26
Switches	28
Wireless	28
Protocol converters	30
Modular HART gateways	30
Combinations	31
Connectivity	32
Shop floor productivity	33

Phoenix Contact customers often encounter CIID2 (dust hazards) locations in their projects. We do not produce products for Class II areas unless they are contained within an enclosure rated for Class II Division 2.

We also recognize the need for ATEX and IECEx-equivalent approvals. Visit our website for more information.

Power reliability

Don’t overlook the basics. No matter how sophisticated your control system, a “line down” situation is only a power disturbance away. True power reliability involves protection against surges and overcurrents, conversion of AC to DC while providing redundancy and battery backup, monitoring for faults, and distributing power to end devices. Combined, these four elements provide the foundation on which a reliable control system should be built.



No other function in your control cabinet impacts overall system performance more than reliable power. Phoenix Contact offers all the necessary components to reliably protect, convert, monitor, and distribute low-voltage power within your system.

POWER RELIABILITY

- **Circuit breakers**
- **Surge protection**
- **Power supplies**
- **Redundancy**

Power reliability

Signal switching and conditioning

Safety

Automation and control

Networking



Circuit breakers



Surge protection



Power supplies



Redundancy

Circuit breakers – Electronic

Electronic circuit breakers provide high reliability and state-of-the-art performance for long-term operation.

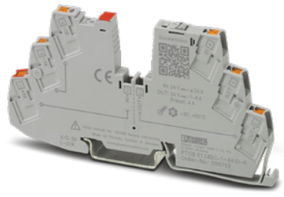
# of channels	Ampere rating	Item description	Item #
CAPAROC customizable circuit breaker system for 12 & 24 V DC applications			
1	1-4A	CAPAROC E1 12-24DC/1-4A	1115415
	1-10A	CAPAROC E1 12-24DC/1-10A	1115649
	1A	CAPAROC E1 12-24DC/1A	1157288
	2A	CAPAROC E1 12-24DC/2A	1157290
	4A	CAPAROC E1 12-24DC/4A	1157285
	6A	CAPAROC E1 12-24DC/6A	1157286
	8A	CAPAROC E1 12-24DC/8A	1157279
	10A	CAPAROC E1 12-24DC/10A	1157284
2-channel circuit breakers			
2	1-4A	CAPAROC E2 12-24DC/1-4A	1115655
	2-10A	CAPAROC E2 12-24DC/2-10A	1110984
Current rails			
20 pos	-	CAPAROC CR 20	1110989
8 pos	-	CAPAROC CR 8	1115672
20 pos	-	CAPAROC CR EXT20	1115674
8 pos	-	CAPAROC CR EXT8	1110990
4 pos	-	CAPAROC CR EXT4	1110991
-	-	CAPAROC CR CON	1270955
Power modules			
-	-	CAPAROC PM S-R	1115661
-	-	CAPAROC PM PN	1110986
-	-	CAPAROC PM EIP	1393553
Distribution module			
-	-	CAPAROC PD 0V	1110987
Triple-rated hazardous location power module and breakers for 12 and 24 V DC applications			
2	1-4A	CAPAROC E2 12-24DC/1-4A EX	1344361
	2-10A	CAPAROC E2 12-24DC/2-10A EX	1344364
-	-	CAPAROC PM S-R EX	1344363

CAPAROC



	Nominal current	Operating current	Item description	Item #
PTCB single-channel electronic circuit breaker for 1-8A 24 V DC applications				
Programmable current setting	1-3A	18 V DC to 27.5 V DC	PTCB E1 24 DC/1-3A NO	2909909
	1-8A	18 V DC to 30 V DC	PTCB E1 24 DC/1-8A NO	2908262
Fixed current setting	1A	18 V DC to 30 V DC	PTCB E1 24 DC/1A NO	2909902
	2A	18 V DC to 30 V DC	PTCB E1 24 DC/2A NO	2909903
	3A	18 V DC to 27.5 V DC	PTCB E1 24 DC/3A NO	2909904
	4A	18 V DC to 30 V DC	PTCB E1 24 DC/4A NO	2909906
	6A	18 V DC to 30 V DC	PTCB E1 24 DC/6A NO	2909908
	8A	18 V DC to 30 V DC	PTCB E1 24 DC/8A NO	2909910
PTCB eFuse single-channel electronic circuit breaker for 0.1-0.63A 24 V DC applications				
Programmable current setting	1-4A	18 V DC to 27.5 V DC	PTCB E1 24 DC/1-4A SI-R	1135753
	1-8A	18 V DC to 30 V DC	PTCB E1 24 DC/1-8A SI-R	1135752
Fixed current setting	1A	18 V DC to 30 V DC	PTCB E1 24 DC/1A SI-R	1135751
	2A	18 V DC to 30 V DC	PTCB E1 24 DC/2A SI-R	1135749
	4A	18 V DC to 27.5 V DC	PTCB E1 24 DC/4A SI-R	1135745
	6A	18 V DC to 30 V DC	PTCB E1 24 DC/6A SI-R	1135740
	8A	18 V DC to 30 V DC	PTCB E1 24 DC/8A SI-R	1135734

PTCB



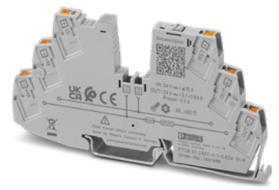
Disclaimer:
Please check the Phoenix Contact website and search for specific product availability.

Circuit breakers – Electromechanical

Electromechanical circuit breakers offer easy-to-expand possibilities.

	Nominal current	Operating voltage	Item description	Item #
PCTB eFuse - NEC Class 2 - NO				
Programmable current setting	0.1 - 0.63A	10 V DC to 30 V DC	PTCB E1 24DC/0.1-0.63A NO	1441495
Fixed current setting	0.1A		PTCB E1 24DC/0.1A NO	1464484
	0.2A		PTCB E1 24DC/0.2A NO	1361055
	0.5A		PTCB E1 24DC/0.5A NO	1361051
	0.63A		PTCB E1 24DC/0.63A NO	1464486
PTCB eFuse - NEC Class 2 - Status-reset				
Programmable current setting	0.1 - 0.63A	10 V DC to 30 V DC	PTCB E1 24DC/0.1-0.63A SI-R	1441496
Fixed current setting	0.1A		PTCB E1 24DC/0.1A SI-R	1464483
	0.2A		PTCB E1 24DC/0.2A SI-R	1361049
	0.5A		PTCB E1 24DC/0.5A SI-R	1361043
	0.63A		PTCB E1 24DC/0.63A SI-R	1464485

PTCB



Channels	Nominal current	Operating voltage	Item description	Item #
CBM electronic circuit breakers - Multichannel - NO - Resettable				
4 channels	0.5A - 10A	18 V DC to 30 V DC	CBM E4 24DC/0.5-10A NO-R	2905743
8 channels			CBM E8 24DC/0.5-10A NO-R	2905744

# poles	Ampere rating	AC rating	DC rating	Item description	Item #
Hydraulic-magnetic circuit breakers for 120 V AC/50 V DC applications					
1	1A	120 V AC	50 V DC	HMC 11 120AC 1A CID2	2907191
	2A			HMC 11 120AC 2A CID2	2907192
	3A			HMC 11 120AC 3A CID2	2907193
	5A			HMC 11 120AC 5A CID2	2907194
	7.5A			HMC 11 120AC 7.5A CID2	2907195
	10A			HMC 11 120AC 10A CID2	2907196
	15A			HMC 11 120AC 15A CID2	2907197
	20A	-		HMC 11 120AC 20A CID2	2907199
	1A	120 V AC		HMC 11 120AC 1A CID2 TBUS	2907200
	2A			HMC 11 120AC 2A CID2 TBUS	2907201
	3A			HMC 11 120AC 3A CID2 TBUS	2907202
	5A			HMC 11 120AC 5A CID2 TBUS	2907203
	7.5A			HMC 11 120AC 7.5A CID2 TBUS	2907204
	10A			HMC 11 120AC 10A CID2 TBUS	2907205

HMC



Surge protection devices

Surge Protection Devices (SPDs) are designed to protect electrical devices from voltage spikes or transients. SPDs protect your equipment to help you avoid expensive repair or replacement costs and avoidable system downtime.

MCR							
Signal	**Connection**	**Voltage**	**Grounding**	**Design**	**Monitoring**	**Item description**	**Item #**
Loop	Scew	24 V DC	Indirect	Non-pluggable	With	TTC-6-1X2-24DC-UT	2906798
Discreet			Direct			TTC-6-2x1-24DC-UT	2906799
Loop			Indirect	Pluggable		TTC-6P-1X2-24DC-UT-I	2906809
Discreet			Direct			TTC-6P-2X1-24DC-UT-I	2906810

Power							
Modes of protection	**Connection**	**Voltage**	**Grounding**	**Design**	**Monitoring**	**Item description**	**Item #**
L-N, L-PE, N-PE	Screw	120 V AC/DC	Indirect	Pluggable	With	PLT-SEC-T3-120-FM-UT	2907918
		230 V AC/DC				PLT-SEC-T3-230-FM-UT	2907919
		24 V AC/DC				PLT-SEC-T3-24-FM-UT	2907916
		60 V AC/DC				PLT-SEC-T3-60-FM-UT	2907917

MCR protection



Power supplies

Our power supplies have proven themselves over many decades in numerous applications.

Phase	Output voltage	Output current	Item description	Item #
Single phase	5 V DC	5 A	UNO-PS/1 AC/5 DC/25 W	2904374
		8 A	UNO-PS/1 AC/5 DC/40 W	2904375
	12 V DC	2.5 A	UNO-PS/1 AC/12 DC/30 W	2902998
		4.6 A	UNO-PS/1 AC/12 DC/55 W	2902999
		8.3 A	UNO-PS/1 AC/12 DC/100 W	2902997
	15 V DC	2 A	UNO-PS/1 AC/15 DC/30 W	2903000
		3.67 A	UNO-PS/1 AC/15 DC/55 W	2903001
		6.67 A	UNO-PS/1 AC/15 DC/100 W	2903002
	24 V DC	3.75 A	UNO-PS/1 AC/24 DC/90 W/C2LPS	2902994
		4 A	UNO-PS/1 AC/15 DC/60 W	2902992
		4.2 A	UNO-PS/1 AC/24 DC/100 W	2902993
	48 V DC	1.25 A	UNO-PS/1 AC/48 DC/60 W	2902995
		2.08 A	UNO-PS/1 AC/48 DC/100 W	2902996
	24 V DC	1.3 A	UNO2-PS/1AC/24DC/30W/PT	1399932
		2.5 A	UNO2-PS/1AC/24DC/60W/PT	1399933
	12 V DC	2.5 A	UNO2-PS/1AC/12DC/30W/PT	1399935
		10 A	UNO2-PS/1AC/12DC/120W/SC	1399940
Single phase	12 V DC	5 A	TRIO-PS-2 G/1 AC/12 DC/5/C2LPS	2903157
		10 A	TRIO-PS-2 G/1 AC/12 DC/10	2903158
	24 V DC	3 A	TRIO-PS-2 G/1 AC/24 DC/3/C2LPS	2903147
		5 A	TRIO-PS-2G/1 AC/24 DC/5	2903148
		6.25 A	TRIO3-PS/1AC/24DC/5	1159037
		10 A	TRIO-PS-2 G/1 AC/24 DC/10	2903149
		10A	TRIO3-PS/1AC/24DC/10/4C/IOL	1252696
		10 A	TRIO3-PS/1AC/24DC/10	1159038
		20 A	TRIO-PS-2G/1 AC/24 DC/20	2903151
		20 A	TRIO3-PS/1AC/24DC/20/8C/IOL	1252697
		40 A	TRIO3-PS/1AC/24DC/20	1159039
	48 V DC	5 A	TRIO-PS-2 G/1 AC/48 DC/5	2903159
		10 A	TRIO-PS-2 G/1 AC/48 DC/10	2903160
Three phase	24 V DC	5 A	TRIO-PS-2G/3 AC/24 DC/5	2903153
		10 A	TRIO-PS-2 G/3 AC/24 DC/10	2903154
		20 A	TRIO3-PS/3AC/24DC/10	1159042
		20 A	TRIO-PS-2 G/3 AC/24 DC/20	2903155
		40 A	TRIO3-PS/3AC/24DC/20	1159044
		40 A	TRIO-PS-2 G/3 AC/24 DC/40	2903156
	48 V DC	20 A	TRIO3-PS/3AC/24DC/40	1159045
Single phase	12 V DC	15 A	QUINT4-PS/1 AC/12 DC/15	2904608
		20 A	QUINT-PS/1 AC/12 DC/20	2866721
	24 V DC	1.3 A	QUINT4-PS/1 AC/24 DC/1.3/PT	2909575
		1.3 A	QUINT4-PS/1 AC/24 DC/1.3/SC	2904597
		2.5 A	QUINT4-PS/1 AC/24 DC/2.5/PT	2909576
		2.5 A	QUINT4-PS/1 AC/24 DC/2.5/SC	2904598
		3.5 A	QUINT-PS/1 AC/24 DC/3.5	2866747
		3.8 A	QUINT4-PS/1 AC/24 DC/3.8/PT	2909577
		3.8 A	QUINT4-PS/1 AC/24 DC/3.8/SC	2904599
		5 A	QUINT4-PS/1 AC/24 DC/5	2904600
		10 A	QUINT4-PS/1 AC/24 DC/10	2904601
		20 A	QUINT4-PS/1 AC/24 DC/20	2904602
	48 V DC	5 A	QUINT4-PS/1 AC/48 DC/5	2904610
		10 A	QUINT4-PS/1 AC/48 DC/10	2904611
		20 A	QUINT4-PS/1 AC/48 DC/20	2904612
Three phase	24 V DC	5 A	QUINT4-PS/3 AC/24 DC/5	2904620
		10 A	QUINT4-PS/3 AC/24 DC/10	2904621

UNO



TRIO



QUINT



Recommended surge protection/power supply input				
Phase	**Voltage**	**Rated current**	**Item description**	**Item #**
Single phase	120 V AC	26 A	PLT-SEC-T3-120-FM-UT	2907918
	240 V AC	26 A	PLT-SEC-T3-230-FM-UT	2907919

DC/DC converter modules

DC/DC converters deliver reliable, regulated power with high efficiency, dynamic and static boost capabilities, and preventive function monitoring—ensuring long service life, system stability, and safe operation, even in demanding environments.

QUINT POWER DC/DC converters < 100 W				
Input voltage	**Output voltage**	**Output current**	**Item description**	**Item #**
12 - 24 V DC	24 V DC	1.3 A	QUINT4-PS/12-24DC/24DC/1.3/PT	1066716
		1.3 A	QUINT4-PS/12-24DC/24DC/1.3/SC	1066703
		2.5 A	QUINT4-PS/12-24DC/24DC/2.5/PT	1066714
		2.5 A	QUINT4-PS/12-24DC/24DC/2.5/SC	1066718
24 - 48 V DC	48 V DC	2.0 A	QUINT4-PS/24-48DC/48DC/2/PT	1098676
48 - 110 V DC	24 V DC	2.5 A	QUINT4-PS/48-110DC/24DC/2.5/PT	1066708
12 - 24 V DC	5 - 15 V DC	2.5 A	QUINT4-PS/12-24DC/5-15DC/2.5/PT	1066704



QUINT POWER DC/DC converters > 100 W					
Input voltage	**Output voltage**	**Output current**	**Extra functionality**	**Item description**	**Item #**
24 V DC	24 V DC	5 A	SFB Technology	QUINT4-PS/24DC/24DC/5/PT	2910119
			SFB Technology, conformally coated	QUINT4-PS/24DC/24DC/5/PT/CO	2910132
			SFB Technology	QUINT4-PS/24DC/24DC/5/SC	1046800
		10 A	SFB Technology	QUINT4-PS/24DC/24DC/10/PT	2910120
			Conformally coated	QUINT4-PS/24DC/24DC/10/PT/CO	2910133
			SFB Technology	QUINT4-PS/24DC/24DC/10/SC	1046803
		20 A	SFB Technology	QUINT4-PS/24DC/24DC/20/PT	2910121
			SFB Technology	QUINT4-PS/24DC/24DC/20/SC	1046805
			SFB Technology, decoupling 1+1 and n+1 redundancy	QUINT4-PS/24DC/24DC/20/SC/+	1046881
	12 V DC	8 A	SFB Technology	QUINT4-PS/24DC/12DC/8/PT	2910122
	48 V DC	5 A	SFB Technology	QUINT4-PS/24DC/48DC/5/PT	2910123
48 V DC	24 V DC		SFB Technology	QUINT4-PS/48DC/24DC/5/PT	2910125
	48 V DC		SFB Technology	QUINT4-PS/48DC/48DC/5/PT	2910128
12 V DC	24 V DC		SFB Technology	QUINT4-PS/12DC/24DC/5/PT	2910124
60 - 72 V DC	24 V DC	10 A	SFB Technology	QUINT-PS/60-72DC/24DC/10	2905009
			SFB Technology, conformally coated	QUINT-PS/60-72DC/24DC/10/CO	2905011
96 - 110 V DC			SFB Technology	QUINT-PS/96-110DC/24DC/10	2905010
			SFB Technology, conformally coated	QUINT-PS/96-110DC/24DC/10/CO	2905012



Redundancy modules

Redundancy modules are a necessity for higher reliability and they enable the combination of power supplies for increased life expectancy.

Input voltage	Input current	Output current	Item description	Item #
Active redundancy modules				
12 - 24 V DC	2 x 10	2 x 10	QUINT4-ORING/12-24DC/2X10/2X10	1088206
	2 x 20	2 x 20	QUINT4-ORING/12-24DC/2X20/2X20	1088207
		1 x 40	QUINT4-S-ORING/12-24DC/1X40	2907752
		1 x40	QUINT4-S-ORING/12-24DC/1X40/VP	1043418
		1x 40	QUINT4-S-ORING/12-24DC/1X40/+	2907753
24 V DC	2 x 40	1 x 80	QUINT-ORING/24DC/2X40/1X80	2902879
Passive redundancy modules				
Input voltage	**Input current**	**Output current**	**Item description**	**Item #**
12 - 24 V DC	2 x 20	1 x 40	QUINT4-DIODE/12-24DC/2X20/1X40	2907719
48 V DC	2 x 20	1 x 40	QUINT4-DIODE/48DC/2X20/1X40	2907720
5 - 24 V DC	2 x 5	1 x 10	STEP3-DIODE/5-24DC/2X5/1X10/PT	1283937

QUINT



DC-powered UPS systems

DC UPS systems for critical applications combine intelligent battery management, dynamic power boosting, and integrated diagnostics in a compact, space-saving design—ensuring uninterrupted power, simplified installation, and maximum system availability, even during outages.

Input voltage	Output voltage	Output current	Protocol	Item description	Item #
DC uninterruptible power supplies					
24 V DC	24 V DC	5	PROFINET	QUINT4-UPS/24DC/24DC/5/PN	2906993
		10		QUINT4-UPS/24DC/24DC/10/PN	2907068
		20		QUINT4-UPS/24DC/24DC/20/PN	2907073
		40		QUINT4-UPS/24DC/24DC/40/PN	2907079
		5	EtherNet/IP	QUINT4-UPS/24DC/24DC/5/EIP	2906994
		10		QUINT4-UPS/24DC/24DC/10/EIP	2907069
		20		QUINT4-UPS/24DC/24DC/20/EIP	2907074
		40		QUINT4-UPS/24DC/24DC/40/EIP	2907080
		5	EtherCAT	QUINT4-UPS/24DC/24DC/5/EC	2906996
		10		QUINT4-UPS/24DC/24DC/10/EC	2907070
		20		QUINT4-UPS/24DC/24DC/20/EC	2907076
		40		QUINT4-UPS/24DC/24DC/40/EC	2907081
		5	USB	QUINT4-UPS/24DC/24DC/5/USB	2906991
		10		QUINT4-UPS/24DC/24DC/10/USB	2907067
		20		QUINT4-UPS/24DC/24DC/20/USB	2907072
		40		QUINT4-UPS/24DC/24DC/40/USB	2907078
		5	n/a	QUINT4-UPS/24DC/24DC/5	2906990
		10		QUINT4-UPS/24DC/24DC/10	2907066
		20		QUINT4-UPS/24DC/24DC/20	2907071
		40		QUINT4-UPS/24DC/24DC/40	2907077
		5	IFS interface	QUINT-UPS/24DC/24DC/5/1.3AH	2320254
		10	IFS interface	QUINT-UPS/24DC/24DC/10/3.4AH	2320267
AC	24 V DC	10	USB	QUINT4-CHARGER/1AC/24DC/10	2907990

QUINT4-UPS



AC-powered UPS systems

AC UPS systems for critical applications deliver uninterrupted, pure sine wave power with intelligent battery management, cold-start capability, and integrated diagnostics—ensuring maximum system availability, extended battery life, and seamless operation, even during voltage failures or fluctuations.

Input voltage	Output voltage	Output current	Protocol	Item description	Item #
AC uninterruptible power supplies					
Single phase	Single phase	500 VA	USB	QUINT4-UPS/1AC/1AC/500VA/USB	1067327
		1,000 VA		QUINT4 UPS/1AC/1AC/1KVA	2320283
		750 VA		TRIO-UPS-2G/1AC/1AC/120V/750VA	2905908
		1,500 VA	USB or serial interface	QUINT-HP-UPS/120AC/1.5KVA/PT	1136804
		2,500 VA	USB or serial interface	QUINT-HP-UPS/120AC/2.5KVA/PT	1136813

Note: Some products may require VRLA batteries, listed below

Voltage	Battery type	AmpHour	Item description	Item #
VRLA Battery Accessory				
48 DC	VRLA - AGM	7 AH	QUINT-HP-BAT/PB/48DC/7.0AH/PT	1133819

QUINT-HP-UPS



UPS systems with capacitor and buffer modules

UPS systems with capacitor and buffer modules offer maintenance-free energy storage, rapid switchover during power interruptions, and a long service life—ensuring compact, reliable backup power with advanced diagnostics and a wide temperature tolerance for critical applications.

Input voltage	Output voltage	Output current	Protocol	Item description	Item #
Uninterruptible power supplies with integrated capacitor and buffer modules					
24 V DC	24 V DC	3.8 A / 1 KJ	n/a	QUINT4-CAP/24DC/3.8/1KJ/PT	2320526
		5 A / 4 KJ		QUINT4-CAP/24DC/5/4KJ	2320539
		10 A / 8 KJ		QUINT4-CAP/24DC/10/8KJ	2320571
		20 A	USB	QUINT4-CAP/24DC/20/USB	1065635
			PROFINET	QUINT4-CAP/24DC/20/PN	1076860
			EtherNet/IP	QUINT4-CAP/24DC/20/EIP	1076861
			EtherCAT	QUINT4-CAP/24DC/20/EC	1076858
		40 A	n/a	QUINT4-BUFFER/24DC/24DC/20	2907913
				QUINT4-BUFFER/24DC/24DC/40	2909283

QUINT4-CAP



UPS battery modules

UPS battery modules deliver a long service life and extended buffer times with intelligent communication and automatic detection for seamless integration and maximum system availability—even in extreme ambient conditions.

UPS battery modules				
Voltage	**Battery type**	**AmpHour**	**Item description**	**Item #**
24 DC	Lead AGM	1.2 AH	UPS-BAT/PB/24DC/1.2AH	1274520
		4 AH	UPS-BAT/PB/24DC/4AH	1274117
		7 AH	UPS-BAT/PB/24DC/7AH	1274118
		12 AH	UPS-BAT/PB/24DC/12AH	1274119
		20 AH	UPS-BAT/PB/24DC/20AH	1348516
		40 AH	UPS-BAT/PB/24DC/40AH	1354641
		110 AH	UPS-BAT/PB/24DC/110AH	1474660
	Lithium Iron Phosphate	64 WH	UPS-BAT/LI/24DC/64WH	1460921
		128 WH	UPS-BAT/LI/24DC/128WH	1396415
		189 WH	UPS-BAT/LI/24DC/189WH	1460922
		284 WH	UPS-BAT/LI/24DC/284WH	1460923
	Vented Lead AGM	13 AH	UPS-BAT/VRLA-WTR/24DC/13AH	2320416
		26 AH	UPS-BAT/VRLA-WTR/24DC/26AH	2320429
	Lead AGM	1.2 AH	TRIO-BAT/24DC/1.2AH	1394729
		4 AH	TRIO-BAT/24DC/4AH	1394730
		7 AH	TRIO-BAT/24DC/7AH	1384031
		12 AH	TRIO-BAT/24DC/12AH	1394727
48 DC	VRLA - AGM	7 AH	QUINT-HP-BAT/PB/48DC/7.0AH/PT	1133819

TRIO battery



UPS selection criteria

All applications with UPS systems require an evaluation of battery and power usage times.

Check the required documentation for graphs such as this example.

Example of buffer time: QUINT4 AC UPS for UPS-BAT/LI 2024

Load Current	Buffer time													
	Minutes												Hours	
	1	2	3	4	5	8	10	15	20	25	30	40	50	1	1.5
100 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x
200 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
300 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x				
400 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x					
500 W	2x	2x	2x	2x	2x	2x	2x	2x	2x						
600 W	2x	2x	2x	2x	2x	2x	2x	2x							
700 W	2x	2x	2x	2x	2x	2x	2x	2x							
800 W	2x	2x	2x	2x	2x	2x	2x								
900 W	2x	2x	2x	2x	2x	2x	2x								

2x: There are always two battery modules of the same capacity required. The data is based on an ambient temperature of +25 °C at the start of use.

Signal switching and conditioning

Every signal has a specific purpose, and not all signals are the same. Depending upon the application, sometimes along the journey, signals may need to be isolated, amplified, or converted to serve their purpose in the system. Analog signals, digital signals, and motors all require the right product to ensure that the signal gets the job done.



Phoenix Contact solutions enable the reliable transmission of signals. From the field to the controller, this group of products ensures the right handling at the right time, with options for hazardous locations with high I/O count and quick cabling modules, protocol adapters, and I/O marshaling devices that greatly reduce space and implementation time.

SIGNAL SWITCHING AND CONDITIONING

- **Analog signal conditioners**
- **Industrial relays**
- **I/O marshaling**

Power reliability

Signal switching and conditioning

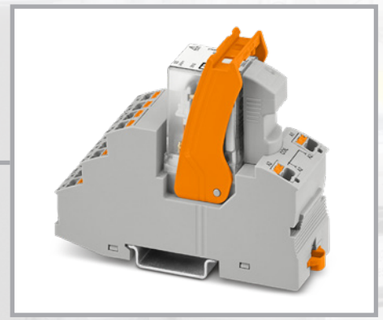
Safety

Automation and control

Networking



Analog signal conditioners



Industrial relays



I/O marshaling

Analog signal conditioners and intrinsic safety isolators

For signal conditioning, isolation, and energy limitations in tight applications.

Module power options other than 24 V DC:
Universal powered (-UP), which is a 24-240 V AC/DC powered module.
Loop powered (-LP), in which the module is powered by the 4-20mA input signal or by an output side 4-20mA loop.

MINI Analog Pro

Input signal	Output signal	Module power	Item description	Item #
Fixed signal conversion and isolation				
4-20mA	4-20mA	Line	MINI MCR-2-I-I	2901998
0-10 V DC	0-10 V DC		MINI MCR-2-U-U	2902042
4-20mA	0-10 V DC		MINI MCR-2-I4-U	2902002
0-10 V DC	4-20mA		MINI MCR-2-U-I4	2902029
4-20mA/HART	4-20mA/HART		MINI MCR-2-RPSS-I-I	2901998
Universal and configurable analog signal conversion and isolation				
Universal	Universal	Line	MINI MCR-2-UI-UI	2902037
			MINI MCR-2-UNI-UI-UIRO	2902026
Temperature signal conversion and isolation				
PT100	Common analog	Line	MINI MCR-SL-PT100-UI-NC	2864273
		Loop	MINI MCR-SL-PT100-LP-NC	2810308
RTD	Universal analog	Line	MINI MCR-2-RTD-UI	2902049
Thermocouple			MINI MCR-2-TC-UI	2902055
Universal temperature	NO relay set point		MINI MCR-2-T-REL	2905632
Loop-powered signal conversion and isolation				
Universal analog	Active 4-20mA	Loop	MINI MCR-2-UI-I-OLP	2902061
Active 4-20mA	Passive 4-20mA		MINI MCR-2-I-I-ILP	2901994
			MINI MCR-2-2I-2I-ILP	2901996
Passive 4-20mA	Active 4-20mA		MINI MCR-2-RPS-I-I-OLP	2906446
			MINI MCR-2-RPS-2I-2I-OLP	2906448
Specialty signal conversion and isolation				
Universal analog	2x 4-20mA	Line	MINI MCR-2-UI-2I-NC	2905026
4-20mA/HART	2x 4-20mA/HART		MINI MCR-2-RPSS-I-2I	2905628
Frequency and PWM	Analog		MINI MCR-2-F-UI	2902056
Analog	Frequency and set point		MINI MCR-2-UI-FRO	2902031
Potentiometer	Analog		MINI MCR-2-POT-UI	2902016
Universal analog	Set point/relay out		MINI MCR-2-UI-REL	2902033
Load cell/strain gauge	4-20ma/ 0-10V		MCR-SGA-4/6-DC	5604058

MINI MCR-2



MINI Analog Pro Ex ia – Intrinsic safety isolators

Input signal	Output signal	Module power	Item description	Item #
Analog in				
4-20mA/HART	4-20mA/ HART	Line	MINI MCR-EX-RPSS-I-I	2908803
Analog out				
4-20mA/HART	4-20mA/ HART	Line	MINI MCR-EX-IDS-I-I	2908805
Temperature in				
Universal temperature	4-20mA	Line	MINI MCR-EX-T-I	2908813
			MINI MCR-EX-T-I-C	1234567
Digital in				
NAMUR	1x NO, NC (SPDT)	Line	MINI MCR-EX-NAM-RO	1157862
	2x NO (SPST)		MINI MCR-EX-NAM-2RO	2902004
	1x Transistor		MINI MCR-EX-NAM-T	2908807
	2x Transistors		MINI MCR-EX-NAM-2T	1157852
Digital out				
Voltage 20...30 V DC	19.2V, 185mA	Loop	MINI MCR-EX-SD-16-50-LP	1157869
	24V, 59mA		MINI MCR-EX-SD-20-25-LP	1157867
	25.1V, 139mA		MINI MCR-EX-SD-21-48-LP	2908810
	27.1, 101mA		MINI MCR-EX-SD-23-38-LP	1277111
HART compatible				
4-20mA	4-20mA	Line	MINI MCR-EX-RPSS-I-I	2908803
			MINI MCR-EX-IDS-I-I	2908805

MINI MCR-EX



Accessories

Item description	Item #
T-Bus connector, gray	2695439
MINI Pro power terminal block	2902066
MINI Pro fault monitoring module	2904504
MINI Pro V8 adapter to Quick cable	2901993
MINI Pro adapter to Modbus RTU	2905634
MINI Pro adapter to Modbus TCP	2905635
MINI Pro adapter to Profibus-DP	2905636
Termination tray for 16 MINI Analog	2902934

Terminal carrier



Analog signal conditioners and intrinsic safety isolators

For signal conditioning, isolation, and energy limitations applications that require high reliability.

Module power options other than 24 V DC:
Universal powered (-UP), which is a 24-240 V AC/DC powered module.
Loop powered (-LP), in which the module is powered by the 4-20mA input signal or by an output side 4-20mA loop.

Input signal	Output signal	Module power	Item description	Item #
Fixed signal conversion and isolation				
4-20mA	4-20mA	Loop	MACX MCR-SL-I-I-ILP	2905278
			MACX MCR-SL-I-I-ILP-HV	2907704
			MACX MCR-SL-2I-2I-ILP	2905280
4-20mA/HART	4-20mA/HART	Line	MACX MCR-2-RPSSI-I	2865955
			MACX MCR-2-RPSSI-I-UP	2865968
			MACX MCR-2-RPSSI-2I	2924825
			MACX MCR-2-RPSS-2I-2I	2904089
Universal and configurable analog signal conversion and isolation				
Universal	Universal	Line	MACX MCR-UI-UI-NC	2811446
			MACX MCR-UI-UI-UP-NC	2811297
Temperature signal conversion and isolation				
Universal analog	Universal analog with set point	Line	MACX MCR-T-UI-UP	2811394
	Universal analog with 3 set points		MACX MCR-T-UIREL-UP	2811378
Universal temperature	4-20mA/ HART	Loop	MACX MCR-TS-I-OLP	2908662
	4-20mA/ HART - head mount		FA MCR-HT-TS-I-OLP-PT	1105515
Specialty signal conversion and isolation				
Load cell/strain gauge	4-20ma/ 0-10V	Line	MCR-SGA-4/6-DC	5604058
Voltage, current	Relay Out		MACX MCR-SL-UI-REL	2096169
Specialty analog displays				
4-20mA/HART	Universal display with 2 set points	Line	FA MCR-DS-I-I-OLP	2908781
Universal/temperature			FA MCR-D-TUI-UI-2REL-UP	2907064

MACX MCR



EX intrinsic safety isolators with safety data

Input signal	Output signal	Module power	Item description	Item #
Fixed signal conversion and isolation				
4-20mA/HART	4-20mA/HART	Line	MACX MCR-EX-SL-RPSSI-I	2865340
	2x 4-20mA/2x HART		MACX MCR-EX-SL-RPSSI-2I	2865366
2x 4-20mA/HART	2x 4-20mA/HART		MACX MCR-EX-SL-RPSSI-2I-2I	2865382
4-20mA/HART	4-20mA/HART Output		MACX MCR-EX-SL-IDSI-I	2865405
Temperature signal conversion and isolation				
Universal temperature	4-20mA/ HART – head mount	Loop	FA MCR-EX-HT-TS-I-OLP-PT	1105681
	4-20mA/ HART		MACX MCR-EX-TS-I-OLP	2908660
RTD	4-20mA	Line	MACX MCR-EX-RTD-I	1050222
Thermocouple			MACX MCR-EX-TC-I	1050223
Universal analog	Universal with set point		MACX MCR-EX-T-UI-UP	2865654
	Universal with 3 set points		MACX MCR-EX-T-UIREL-UP	2865751
Digital outputs/solenoid drivers for hazardous locations				
25.1V, 87mA	Loop-powered 20...30 V DC	Loop	MACX MCR-EX-SL-SD-21-40-LP	2865764
27.7V, 101mA			MACX MCR-EX-SL-SD-24-48-LP	2865609
25.1V, 188mA			MACX MCR-EX-SL-SD-21-60-LP	2865515
23.98V, 37.4mA	Switching level 15...30 V DC	Line	MACX MCR-EX-SL-SD-21-25-LFD	2905669
25.3V, 94mA			MACX MCR-EX-SL-SD-23-48-LFD	2924867
27.06V, 91.11mA			MACX MCR-EX-SL-SD-24-48-LFD	2906155
Digital inputs for hazardous locations				
NAMUR	1x NO, NC (SPDT)	Line	MACX MCR-EX-SL-NAM-R	2865434
	2x NO (SPST)		MACX MCR-EX-SL-NAM-2RO	2865450
2x NAMUR	2x NO (SPST)		MACX MCR-EX-SL-2NAM-RO	2865476
	2x NO, NC (SPDT)		MACX MCR-EX-SL-2NAM-R-UP	2865984
NAMUR	2x transistors		MACX MCR-EX-SL-NAM-2T	2865463
2x NAMUR			MACX MCR-EX-SL-2NAM-T	2865489
Specialty analog displays				
4-20mA/HART	Universal display with 2 set points	Loop	FA MCR-EX-DS-I-I-OLP	2908800
Universal/temperature		Line	FA MCR-EX-D-TUI-UI-2REL-UP	2907216

MACX MCR-EX



Accessories

Item description	Item #
T-Bus connector, gray	2695439
MACX MCR power terminal block	2865625
Termination tray 16 MACX MCR	2904684
Termination tray 16 MACX MCR	2904967
Termination tray 16 MACX MCR	1642200
Termination tray interface, 8 MACX EX to Siemens I/O	1642471

MINI Pro adapter



Industrial relays

Interposing relays provide safe isolation, signal matching, and visual separation of different voltages on the other side of the rail.

Input coil voltage	Output current	Sets of contacts	Termination style	Item description	Item #
Mechanical relays					
12 V DC	6 A	SPDT-6.2 mm	Screw	PLC-RSC-12 DC/21/EX	2909522
				PLC-RSC-12 DC/21-21/EX	2909517
	10 A	SPDT-14 mm		PLC-RSC-12 DC/21/HC/EX	2909518
24 V DC	6 A	SPDT-6.2 mm	Screw	PLC-RSC-24 DC/21/EX	2909524
			Push-in	PLC-RPT-24 DC/21/EX	2909528
		DPDT-14 mm	Screw	PLC-RSC-24 DC/21-21/EX	2909509
			Push-in	PLC-RPT-24 DC/21-21/EX	2909514
	10 A	SPDT-14 mm	Screw	PLC-RSC-24 DC/21/HC/EX	2909519
			Push-in	PLC-RPT-24 DC/21/HC/EX	2909532
120 V AC or DC	6 A	SPDT-6.2 mm	Screw	PLC-RSC-120UC/21/EX	2909525
		DPDT-14 mm		PLC-RSC-120UC/21-21/EX	2909511
	10 A	SPDT-14 mm		PLC-RSC-120UC/21/HC/EX	2909520
Solid-state relays					
24 V DC	100 mA	SPST-6.2mm	Screw	PLC-OSC- 24DC/ 48DC/100/C1D2	5603261
	3A			PLC-OSC- 24DC/ 24DC/ 2/C1D2	5603260
120 V AC or DC	100 mA			PLC-OSC-120UC/ 48DC/100/C1D2	5603263
	3A			PLC-OSC-120UC/ 24DC/ 2/C1D2	5603262

PLC relay



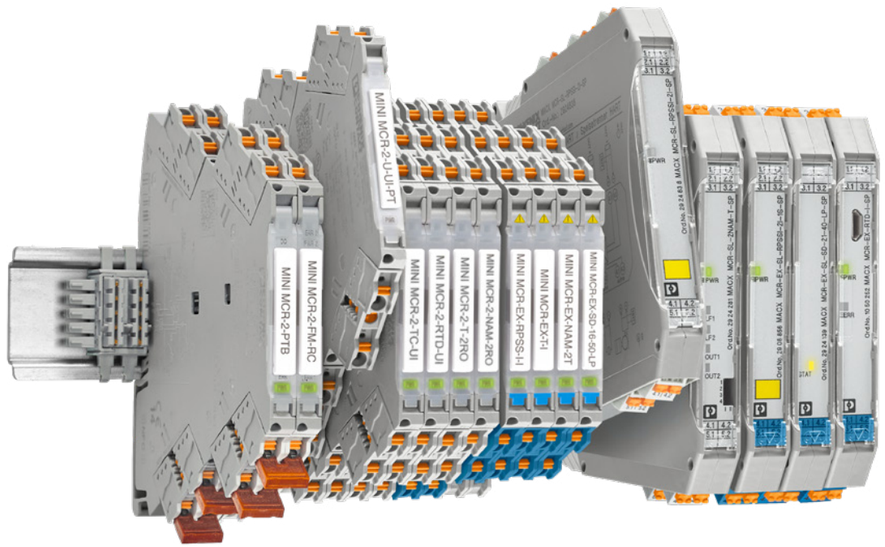
Note: Additional coil voltages and connection technology options are available

Accessories – Quick-cabling V8 adapters			
	Adapter output	Item description	Item #
	Discrete -FLK14	PLC-V8/FLK14/OUT	2295554
		PLC-V8/FLK14/OUT/M	2304102
		PLC-V8L/FLK14/OUT	2299660
		PLC-V8/FLK14/IN	2296553
		PLC-V8/FLK14/IN/M	2304115
		PLC-V8L/FLK14/OUT/M	2304306

PLC-V8



In process automation, signal conditioners and relays often work together to ensure accurate and reliable control of various processes. This collaboration ensures that the control system receives precise data and can reliably control the process, enhancing both safety and efficiency.



I/O marshaling

The VIP IOA family is designed to interface or marshal I/O from the field to the controller and is intended for the direction and management of signals.

Module power options other than 24 V DC:
Universal powered (-UP), which is a 24-240 V AC/DC powered module.
Loop powered (-LP), in which the module is powered by the 4-20mA input signal or by an output side 4-20mA loop.

VIP I/O - I/O signal marshaling for universal I/O systems				
Input signal	Output signal	Module power	Item description	Item #
VIP IOA bases				
NA	NA	Line	VIP/MSTB/D50M/BASE/16CH/CX/EX	2908788
			BASE-MSTB/D37M/16CH/EX	1065476
Analog in				
4-20mA/ HART	4-20mA/HART	Line	IOA MCR-RPSS-I-I	1085774
			IOA MCR-EX-RPSS-I-I	1085761
Analog out				
4-20mA/ HART	4-20mA/HART	Line	IOA MCR-IDS-I-I	1176865
			IOA MCR-EX-IDS-I-I	1044642
Digital in				
NAMUR in	NAMUR out	Line	IOA MCR-NAM-TRI	1176894
			IOA MCR-NAM-TRI-FS	1176876
			IOA MCR-EX-NAM-NAM	1085769
			IOA MCR-EX-NAM-TRI	1085768
Digital – relay out				
24 V DC	1 N/O	Line	IOA REL 24V DI/BFI/1.0A/EX	2910155
120 V DC			IOA REL 120V DO/BFI/3.0A/EX	2910154
230 V DC	1 N/C		IOA REL 230V DO/BFI/NC/3.0A/EX	2910422
Solenoid driver out				
Switching level 15...30 V DC	19.2V, 185mA	Line	IOA MCR-EX-SD-16-50	1095564
	24V, 59mA		IOA MCR-EX-SD-20-25	1095563
	25.1V, 139mA		IOA MCR-EX-SD-21-48	1291156
	27.1V, 101mA		IOA MCR-EX-SD-23-38	1085763
Temperature in				
RTD	4-20mA	Line	IOA MCR-RTD-I	1007728
			IOA MCR-EX-RTD-I	1085764
Thermocouple			IOA MCR-TC-I	1007722
			IOA MCR-EX-TC-I	1085766

IOA MCR



Accessories	
Item description	Item #
BASE/U/RAIL DIVIDER	1267397
VIP/S/BASE 3L DIVIDER	2907715
IOA FEED-THRU/EX	2906598



Safety

Machine safety means more than OSHA regulations. Proper implementation includes increased productivity, uptime, and profitability. Enact safety measures without limiting production machine flexibility or production cells. Adaptable cabinet configurations with integrated safety give you the freedom to add or reorganize machines dynamically.



SAFETY
- Safety relays
- Safety modules

Safety management encompasses an entire company strategy. In application, safety is applied in two major areas: machine and process.

Machine safety can be as simple as a single safety sensor tied to a safety relay controlling a motor, or as complex as multiple fail-safe PLCs with distributed safety I/O networked throughout a factory. No matter how large your system, it will always have three pieces: inputs, outputs, and logic.

Process safety is usually larger in scope, and therefore inherently more complex.

Safety relays

Safety relays: Process safety

PSRmini

Applications	Output contacts			SIL level	Overall width	Item description	Connection technology	
Highly compact safe coupling relays	Enabling paths N/O	Monitoring paths N/C	Semi-conductor monitoring		Width (mm)		Screw connection	Spring connection
For safety-related shutdown (ESD)	1	1	1	3	6.8	PSR-PS20 24 VDC	2700356	-
		-				PSR-PS40 24 VDC	2700398	-
	2	1	-		17.5	PSR-PC32 24..230V AC/DC	2700581	2700582
For safety-related switch-on (F&G)	1	1	-			PSR-PC51 24 VDC	2702522	2702523

PSR-PC32



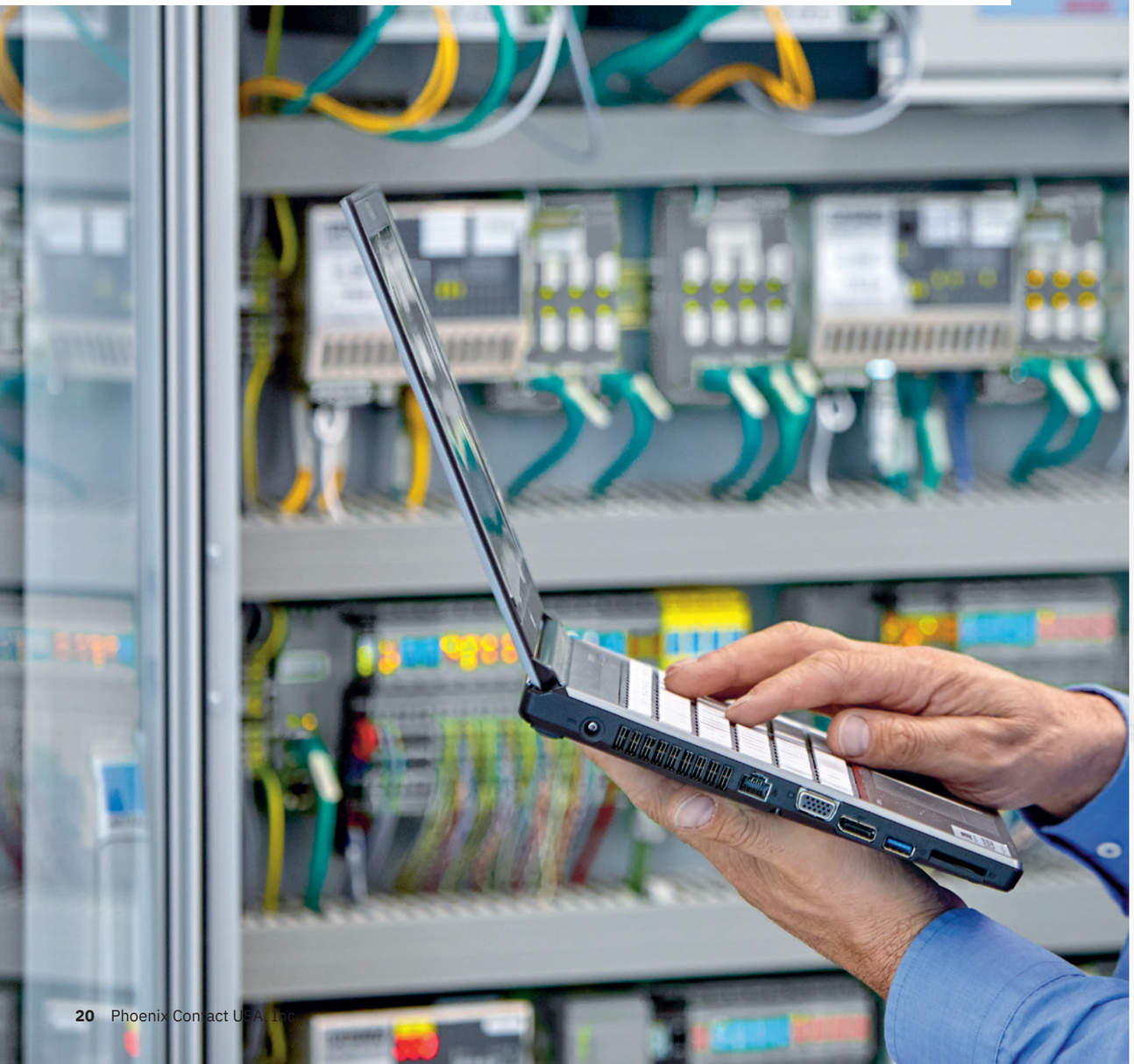
Safety I/O

Function	Item description	Item #
PLCnext safety expansion module (installed left of PLCnext 2152)	AXC F XT SPLC 1000	1159811
Digital inputs: 4 (for 2-channel assignment) or 8 (for 1-channel assignment)	AXL F PSDI8/4 XC 1F	1369866
Digital outputs: 4 (for 2-channel assignment) or 8 (for 1-channel assignment)	AXL F PSDO8/3 XC 1F	1369867
Analog inputs: 8 (1-channel assignment) or 4 (2-channel assignment)	AXL F PSAI8 I XC 1F	1369869

The safety PLCnext module is positioned to the left and the safety I/O modules are positioned to the right.

Automation and control

The heart of the control cabinet is the logic platform. For OEMs and control engineers alike, it has never been easier to build smaller, smarter machines faster – freeing operators from using controllers and equipment based solely on prior familiarity or specifications. Industrial PCs/ HMIs and scalable controllers can streamline functionality, reduce equipment and costs, and usher in the next generation of intelligent machine automation.



Control systems can range from simple, single-function control to real-time SCADA applications. Phoenix Contact has a wide array of products to meet your needs as application demands increase.

AUTOMATION AND CONTROL

- HMIs and IPCs
- Axioline remote I/Os
- Ethernet APL
- Fieldbus segment block couplers

Power reliability

Signal switching and conditioning

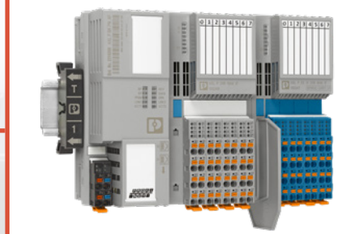
Safety

Automation and control

Networking



HMIs and IPCs



Axioline remote I/Os



Advanced physical layer



Fieldbus segment couplers

HMIs and IPCs

Human machine interfaces (HMI) and displays provide the on-site visualization of applications. Industrial personal computers (IPC) provide local software, computing, and data preparation for any automated application.

Display size	Mounting	Interfaces	OS/browser	Item description	Item #	HMI panel
HTML5 HMIs						
WP 6000 Series						
4.3″	Panel mount	1x USB Host 2.0 1 x Ethernet (10/100 Mbps), RJ45	Yocto/Linux QT browser (closed system)	BWP 2043W	1060549	
7″				BWP 2070W	1060632	
10.2″				BWP 2102W	1060630	

Display size	Mounting	Processor	Data storage	Operating system	Item description	Item #	
IPCs							
15.6″ PCAP 18.5″ PCAP 21.5″ PCAP	Panel or VESA	Celeron 6305E 1.8 GHz (2 core) Core i3-1115G4E 3.0 GHz (2 core) Core i5-1145G7E 2.6 GHz (4 core) Core i7-1185G7E 2.8 GHz (4 core)	2 x m.2 SSD, RAID capable	WIN 10 IOT ENT LTSC 2021 x64 WIN 11 IOT ENT LTSC 2024 x64 No OS - Add your own Linux	VL3 PPC	1376798	VL3 PPC
N/A	DIN rail, wall, bookshelf	Celeron 6305E 1.8 GHz (2 core) Core i3-1115G4E 3.0 GHz (2 core) Core i5-1145G7E 2.6 GHz (4 core) Core i7-1185G7E 2.8 GHz (4 core)			VL3 BPC	1376797	VL3 BPC
10.1" 12.1"	Panel or VESA	Intel® Atom® x6211E 1.3 GHz (2 core)	60 GB NVMe SSD		VL3 PPCS	1644121	VL3 PPCS
		Intel® Atom® x6413E 1.5 GHz (4 core)	120 GB NVMe SSD				
N/A	DIN rail, wall, bookshelf	Intel® Atom® x6211E 1.3 GHz (2 core)	30 GB NVMe SSD		VL3 UPC	1459506	VL3 UPC
			60 GB NVMe SSD				
		Intel® Atom® x6413E 1.5 GHz (4 core)	120 GB NVMe SSD				
			240 GB NVMe SSD				
10.1"	Panel or VESA	N/A	N/A	N/A	VL3 FPM 101 *	1580690	VL3 FPM
12.1"					VL3 FPM 121 *	1580720	
15.6"					VL3 FPM 156 *	1580719	
18.5"					VL3 FPM 185 *	1580718	
21.5"					VL3 FPM 215 *	1580715	
23.8"					VL3 FPM 238 *	1580713	
15.6″ PCAP 18.5″ PCAP 21.5″ PCAP	Arm/Pole or VESA	Intel Pentium N4200 1.1 GHz (4 core) Intel Celeron 7305E 1 GHz (4 core)	mSATA SSD	WIN 10 IOT ENT LTSC 2019 x64 WIN 10 IOT ENT LTSC 2021 x64 WIN 11 IOT ENT LTSC 2024 x64 No OS - Add your own Linux	BL2 PPC AIO65 2000	1138366	BL2 PPC
		Intel Core i5-7442EQ 2.1 GHz (4 core) Intel Core i7-1265UE 3.5 GHz (10 core)			BL2 PPC AIO65 7000	1138367	

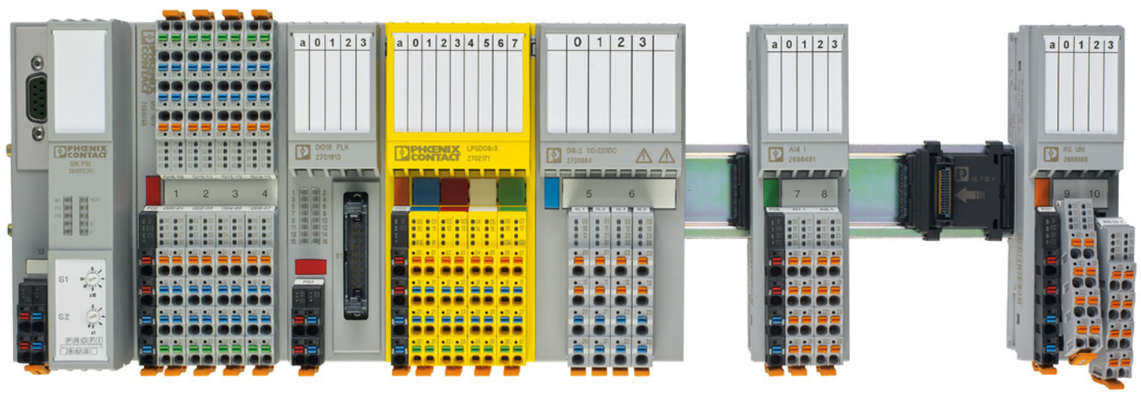
Note: All industrial PCs are made-to-order with configurable options
* These are pending UL CID2 approvals

Axioline F

The cost-effective, modular automation platform for simple monitoring optimization and control tasks. The PLCnext 2152 offers local control, and our bus couplers allow you to install these systems in Ethernet-based networks.

	Function	Item description	Item #	
PLCnext Controller				
	Axioline F controller - ARM	AXC F 2152	2404267	PLCnext 2152
	Axioline F controller - X86	AXC F 3152	1069208	
Bus couplers				
	EtherNet/IP bus coupler	AXL F BK EIP XC	1167192	
	Modbus TCP/IP bus coupler	AXL F BK ETH XC	2701949	
	Profibus-DP bus coupler	AXL F BK PB XC	2702463	
	PROFINET bus coupler	AXL F BK PN TPS XC	1068857	

I/O count	Function	Item description	Item #	Axioline F
Digital inputs				
16	24 V DC input - 4-wire	AXL F DI16/4 XC 2F	2701224	
	NAMUR sensor, 2-wire	AXL F DI16 NAM XC 1F	1052427	
	NAMUR sensor, intrinsically safe, 2-wire	AXL F EX IS DI16 NAM XC 1F	1052423	
Digital outputs				
16	24 V DC, 500 mA, 3-wire	AXL F DO16/3 XC 2F	2701228	
4	21 V DC – 60 mA, intrinsically safe, 2-wire	AXL F EX IS DO4 SD 21-60 XC 1F	1086902	
	24 V DC – 48 mA, intrinsically safe, 2-wire	AXL F EX IS DO4 SD 24-48 XC 1F	1086901	
Combination module DI and DO				
8 + 8	24 V DC in, and 24 V DC out, 500 mA	AXL F DI8/1 DO8/1 XC 1H	2702017	
Analog inputs				
4	0 - 20 mA, 4 - 20 mA, -20 mA to 20 mA	AXL F AI4 I XC 1H	2702007	
	0 - 5 V DC, -5 V to 5 V, 0 to 10 V DC, -10 V to 10 V DC	AXL F AI4 U XC 1H	2702008	
8	HART, 4 - 20 mA, active module	AXL F AI8 HART XC 1F	1052434	
	HART, 4 - 20 mA, intrinsically safe active module	AXL F EX IS AI8 HART XC 1F	1052432	
	HART, 0 - 4 - 20 mA, intrinsically safe passive module	AXL F EX IS AI8 P HART XC 1F	1215393	
	HART, 0 - 4 - 20 mA, passive module	AXL F AI8 P HART XC 1F	1215394	
Analog outputs				AXL F EX
4	Current or voltage: 0 - 4 - 20 mA, 0 - 5V, 0 -10V	AXL F AO4 XC 1H	2702153	
	HART, 0 - 4 - 20 mA	AXL F AO4 HART XC 1F	1087080	
	HART, 0 - 4 - 20 mA, intrinsically safe	AXL F EX IS AO4 HART XC 1F	1087081	
Temperature				
8	RTD inputs, Type Pt, Ni, KTY, Cu	AXL F RTD4 XC 1H	1035430	
	RTD inputs, Type Pt, Ni, KTY, Cu, intrinsically safe	AXL F EX IS RTD8 XC 1F	1397158	
	Thermocouple inputs, 2-wire	AXL F UTH8 XC 1F	2702464	
Specialty modules				
2 + 2	Incremental encoder inputs - 24 V DC, and digital outputs 24 V DC	AXL F CNT2 INC2 XC 1F	2701239	
1	RS-232, RS-485, RS-422 communication module	AXL F RS UNI XC 1H	2702006	
Accessories				
	Partition plate	AXL F/P IO EX PP	1100201	



Axioline P I/O

Axioline P is designed for high-reliability, hot-swappable applications. Available in either Profibus PA-to-PROFINET proxy solutions, Modbus TCP, or PROFINET with I/O connectivity to NAMUR sensor or HART I/O solutions.

Axioline P bus coupler for remote I/O applications			
I/O Count	**Function type**	**Item description**	**Item #**
	PROFINET bus coupler with 2 RJ-45 connections	AXL P BK PN	1132800
	MODBUS TCP/IP bus coupler with RJ-45 connections	AXL P BK ETH	1213488
Digital inputs			
16	NAMUR sensor, 2-wire	AXL P DI16 NAM 1F	1052416
	NAMUR sensor, intrinsically safe, 2-wire	AXL P EX IS DI16 NAM 1F	1052417
	24 VDC input, 2-wire	AXL P DI16/2 1F	1213483
Digital outputs			
4	21 V DC – 60mA, intrinsically safe, 2-wire	AXL P EX IS DO4 SD 21-60 1F	1087078
	24 V DC – 48mA, intrinsically safe, 2-wire	AXL P EX IS DO4 SD 24-48 1F	1087077
Analog inputs			
8	HART, 4 - 20 mA, active module	AXL P AI8 HART 1F	1052429
	HART, 4 - 20 mA, intrinsically safe active module	AXL P EX IS AI8 HART 1F	1052431
	HART, 0 - 4 - 20 mA, intrinsically safe passive module	AXL P EX IS AI8 P HART 1F	1215391
	HART, 0 - 4 - 20 mA, passive module	AXL P AI8 P HART 1F	1215392
Analog outputs			
4	HART, 0 - 4 - 20 mA	AXL P AO4 HART 1F	1087079
	HART, 0 - 4 - 20 mA, intrinsically safe	AXL P EX IS AO4 HART 1F	1087082
Temperature			
8	RTD inputs: Type Pt, Ni, KTY, Cu	AXL P RTD8 1F	1397156
	RTD inputs: Type Pt, Ni, KTY, Cu with intrinsic safety	AXL P EX IS RTD8 1F	1397157
Accessories			
	Axioline P termination pair	AXL P TERM PAIR	2316402
	Partition plate	AXL F/P IO EX PP	1100201

AXL P BK PN

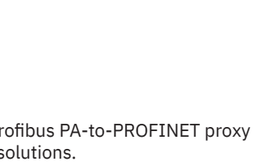


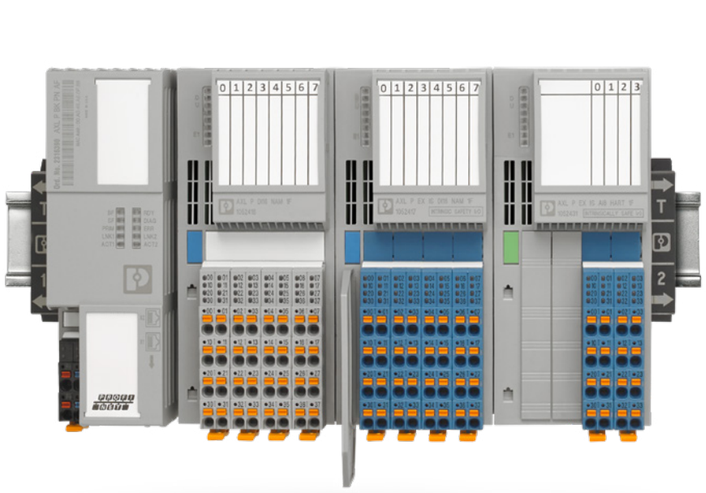
AXL P AI8 HART 1F

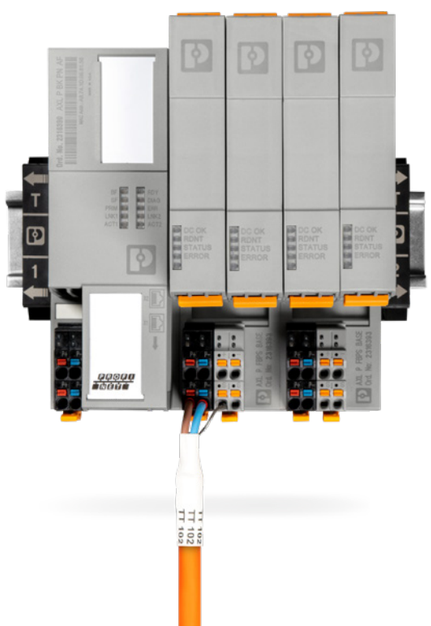


Axioline P proxy

Axioline P proxy (PROFINET to Profibus-PA)		
Function type	**Item description**	**Item #**
PROFINET bus coupler for PROFIBUS-PA proxy	AXL P BK PN AF	2316390
Fieldbus power supply bases for PROFIBUS-PA segment	AXL P FBPS BASE	2316393
Fieldbus power supply plugs for proxy	AXL P FBPS 28DC/0.5A	2316394
Axioline P termination pair	AXL P TERM PAIR	2316402



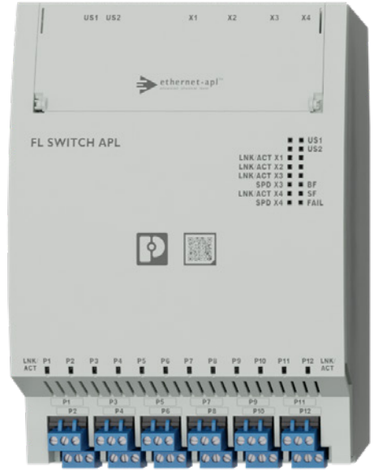


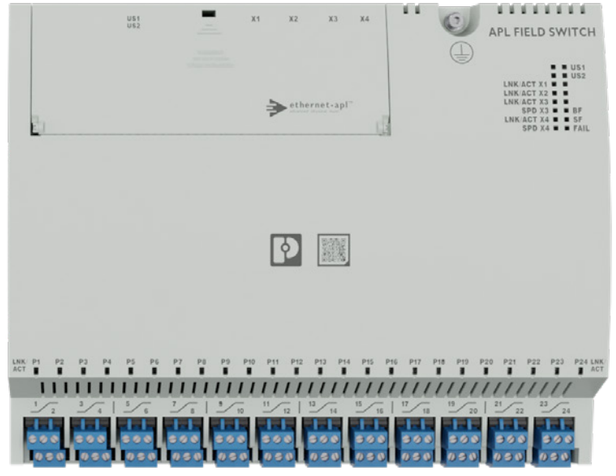


Ethernet APL

Our field switches are designed and built in the USA to support 2-WISE (2 Wire Intrinsically Safe Ethernet) technology. Advanced Physical Layer (APL) is based on the IEEE 802.3 cg standard.

Number of APL ports	Power class	Profibus-PA proxy	10/100 copper	SFP fiber	Ex rating	Item description	Item #
12	A		2	2	Ex ic	FL SWITCH APL 2212-4A-221	1718554
						FL SWITCH APL 2212-4A-211	1718555
24	A + B	●			Ex ia	FL SWITCH APL 2224-4A-211-PA	1843743
						FL SWITCH APL 2224-4A-213-PA	1384244





ethernet-apl™
advanced physical layer

Fieldbus segment block couplers

Ports	Description	Item description	Item #
6	FOUNDATION Fieldbus ™ and Profibus-PA ™	FB-6SP	2316307
8		FB-8SP	1026043
12		FB-12SP	2316310
8	Intrinsically safe FOUNDATION Fieldbus ™ and Profibus-PA ™	FB-8SP ISO	2316311
12		FB-12SP ISO	2316312



Solutions

Still using the non-incendive (NI) protection technique in your plant?

Based on customer input, we developed a two-channel non-incendive device here in the USA to save you space and keep your systems running. We have a two-channel analog and a two-channel digital module in our product offering.

Signal type	Number of channels	Device width	Application	Item description	Item #
Analog	2	17.5 mm	2 channel analog input	PI/NI-2D/24	5607118
Digital			2 channel digital input	PI/NI-2I/I	5607189

Networking

The modern plant, driven by IIoT and big data, has given rise to increased network traffic and subsequent vulnerabilities and risks, both internal and external. Resilient network infrastructure starts with the correct selection of switches, cellular and wireless radios, and security appliances to maximize efficient and resilient communication, enable secure remote access, and prevent network breaches.



With the broad range of technologies supported by Phoenix Contact networking and security products, you can design and implement scalable, reliable, and high-functioning systems.

NETWORKING

- Switches
- Protocol converters
- HART gateways
- Wireless

Power reliability

Signal switching and conditioning

Safety

Automation and control

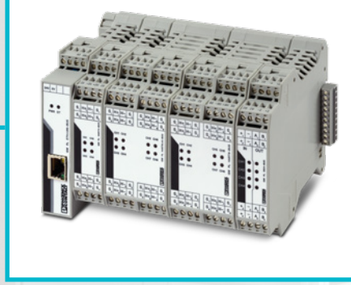
Networking



Managed and unmanaged switches



Protocol converters



HART gateways



Wireless

Unmanaged switches and media converters

The unmanaged switch portfolio can be easily and simply integrated into a networking solution when simple, localized networking is the goal. Media converters allow the conversion from copper to various fiber optics (plastic or glass).

Copper ports	Specialty ports	Total ports	Speed	Power alarm	Item description	Item #
1000 series						
5		5	10/100	N	FL SWITCH 1005N	1085039
8		8			FL SWITCH 1008N	1085256
16		16			FL SWITCH 1016N	1085255
5		5	Gigabit		FL SWITCH 1105N	1085254
8		8			FL SWITCH 1108N	1085243
4	1 fiber, SC MM	5	10/100		FL SWITCH 1004N-FX	1084159
	1 fiber, SC SM	5			FL SWITCH 1004N-FX SM	1085214
	1 fiber, ST MM	5			FL SWITCH 1004N-FX ST	1085179
	1 fiber SFP	5	Gigabit		FL SWITCH 1104NT-SFP	1343023
5	2 fiber SFP	7			FL SWITCH 1105NT-2SFP	1343025
24		24	10/100		FL SWITCH 1024T	1343027
16		16	Gigabit		FL SWITCH 1116T	1085115
4	1 fiber SFP	5	10/100		FL SWITCH 1004N-SFX	1085177
5	2 fiber SFP	7			FL SWITCH 1005N-2SFX	1085176
4	1 fiber SFP	5	Gigabit		FL SWITCH 1104N-SFP	1085173
5	2 fiber SFP	7			FL SWITCH 1105N-2SFP	1085171
		5	10/100		FL SWITCH 1005NT	1085170
		5	Gigabit		FL SWITCH 1105NT	1085163
8		8	10/100		FL SWITCH 1008NT	1085165
		8	Gigabit		FL SWITCH 1108NT	1085162
16		16			FL SWITCH 1116N	1085219
4	1 fiber SFP	5	10/100		FL SWITCH 1004NT-SFX	1085169
5	2 fiber SFP	7			FL SWITCH 1005NT-2SFX	1085164
12	2 fiber SFP	14			FL SWITCH 1012NT-2SFP	1249598
5		5			FL SWITCH 1005NTC	1085161
8		8			FL SWITCH 1008NTC	1085156

1000 Series switches



Speed	Fiber type	Fiber connection	Power alarm and dual-power input	IEC 61850-3	Item description	Item #
10/100	Multi-mode	SC-Duplex	Y	N	MC 1000T-MM SC	1329827
		B-FOC (ST®)			MC 1000T-MM ST	1330244
		LC-Duplex			MC 1000T-MM LC	1330259
	Single mode	SC-Duplex			MC 1000T-SM20 SC	1330262
					MC 1000T-SM40 SC	1330276
		B-FOC (ST®)			MC 1000T-SM20 ST	1330282
		SC-Simplex			MC 1000T-SM40 WDM A	1330293
					MC 1000T-SM40 WDM B	1330296
	Multi-mode	SC-Simplex			MC 1000T-MM WDM A	1330494
					MC 1000T-MM WDM B	1330509
Gigabit	SPF	-			MC 1100T-SFP	1330902
	Multi-mode	SC-Duplex			MC 1100T-MM SC	1330900
	Single mode				MC 1100T-SM20 SC	1330898
10/100	Multi-mode	SC-Duplex			MC 1000E-MM SC	1330507
		B-FOC (ST®)			MC 1000E-MM ST	1330504
		LC-Duplex			MC 1000E-MM LC	1330611
	Single mode	SC-Duplex			MC 1000E-SM20 SC	1330728
					MC 1000E-SM40 SC	1330725
		B-FOC (ST®)			MC 1000E-SM20 ST	1330723
		LC-Duplex			MC 1000E-SM40 LC	1330722
		SC-Simplex			MC 1000E-SM40 WDM A	1330885
					MC 1000E-SM40 WDM B	1330892
	Multi-mode	SC-Simplex			MC 1000E-MM WDM A	1330588
					MC 1000E-MM WDM B	1330890
Gigabit	SPF	-			MC 1100E-SFP	1331375
	Multi-mode	SC-Duplex			MC 1100E-MM SC	1330896
	Single mode				MC 1100E-SM20 SC	1331377

1000 Series media converters



Copper ports	Function	Total ports	Speed	Power alarm	Item description	Item #
Cybersecurity						
5	Industrial NAT firewall, unmanaged switch	5	Gigabit	Y	FL MGUARD 1105 - Router	1153078

Managed switches

Managed switches are designed for larger networks where the accurate and timely sharing of data is a priority.

Copper ports	Specialty ports	Total ports	Speed	Item description	Item #
4 or 6	2 combo & SFP ports	8	10/100	FL SWITCH 2204-2TC-2SFX	2702334
5		5		FL SWITCH 2205	2702326
6	2 fixed fiber ports	8		FL SWITCH 2206-2FX	2702330
				FL SWITCH 2206-2FX SM	2702331
				FL SWITCH 2206-2FX SM ST	2702333
				FL SWITCH 2206-2FX ST	2702332
12 or 14	2 combo & SFP ports	16		FL SWITCH 2206-2SFX	2702969
6	2 fiber, SFP	8		FL SWITCH 2206-2SFX PN	1044028
7	1 fixed fiber port			FL SWITCH 2207-FX	2702328
				FL SWITCH 2207-FX SM	2702329
8				FL SWITCH 2208	2702327
		16		FL SWITCH 2208 PN	1044024
12 or 14	2 combo & SFP ports			FL SWITCH 2212-2TC-2SFX	2702907
14	2 fixed fiber ports			FL SWITCH 2214-2FX	2702905
				FL SWITCH 2214-2FX SM	2702906
	2 fiber, SFP			FL SWITCH 2214-2SFX	1006188
				FL SWITCH 2214-2SFX PN	1044030
16				FL SWITCH 2216	2702904
				FL SWITCH 2216 PN	1044029
4	2 combo & SFP ports	8	Gigabit	FL SWITCH 2304-2GC-2SFP	2702653
4 or 6				FL SWITCH 2306-2SFP	2702970
6	2 fiber, SFP			FL SWITCH 2306-2SFP PN	1009222
8				FL SWITCH 2308	2702652
				FL SWITCH 2308 PN	1009220
16				FL SWITCH 2312-2GC-2SFP	2702910
14	2 fiber, SFP	16		FL SWITCH 2314-2SFP	1006191
				FL SWITCH 2314-2SFP PN	1031683
6		8		FL SWITCH 2316	2702909
16		16		FL SWITCH 2316 PN	1031673
8		8	10/100	FL NAT 2208	2702882
6	2 fiber, SFP		Gigabit	FL NAT 2304-2GC-2SFP	2702981

2000 Series switches





Wireless

Radios are a great communication option when running/trenching cables or making physical connections to systems is not feasible or cost-effective.

Ethernet ports	Wi-Fi standard	Frequency	Item description	Item #
WLAN				
1	802.11a, b, g, n (Wi-Fi 4)	2.4 GHz, 5 GHz	FL WLAN 1101	2702538
			FL WLAN 2101	2702540
			FL WLAN 1011	2702900
			FL WLAN 2011	1119248
	802.11 ax, a, b, g, n (Wi-Fi 6)		FL WLAN 1121	1386092
			FL WLAN 1021	2702993

WLAN



Module type	Wireless technology	Frequency	Item description	Item #
Radioline				
Radio	Trusted Wireless	900 MHz	RAD-900-IFS	2901540
		2.4 GHz	RAD-2400-IFS	2901541
		900 MHz	RAD-900-DAIO6	2702877
RS-485 Multiplexer	Wired (Serial)	N/A	RAD-RS485-IFS	2702184
Module type	**I/O type**	**I/O channels**	**Item description**	**Item #**
IO	Digital	4	RAD-DI4-IFS	2901535
			RAD-DOR4-IFS	2901536
		8	RAD-DI8-IFS	2901539
			RAD-DO8-IFS	2902811
	Analog	4	RAD-AI4-IFS	2901537
			RAD-AO4-IFS	2901538
	Analog + Digital	6	RAD-DAIO6-IFS	2901533
	RTD (PT 100)	4	RAD-PT100-4-IFS	2904035

Radioline



Protocol converters

Conversion from serial to Ethernet-based protocols, available in four different variants.

		Module type	Item description	Item #
Ethernet	Serial	1E/1DB9	GW DEVICE SERVER	2702758
		1E/2DB9		2702760
		2E/2DB9		2702761
		2E/4DB9		2702763
Modbus TCP	Modbus RTU	1E/1DB9	GW MODBUS TCP/RTU	2702764
		1E/2DB9		2702765
		2E/2DB9		2702766
		2E/4DB9		2702767
	ASCII	1E/1DB9	GW MODBUS TCP/ASCII	2702768
		1E/2DB9		2702769
		2E/2DB9		2702770
		2E/4DB9		2702771
EtherNet/IP		1E/1DB9	GW EIP/ASCII	2702772
		1E/2DB9		2702773
		2E/2DB9		2702774
		2E/4DB9		2702776
PROFINET		1E/1DB9	GW PN/ASCII	1021080
		1E/2DB9		1021058
		2E/2DB9		1021056
		2E/4DB9		1020882
EtherNet/IP	Modbus TCP / Modbus RTU	1E/1DB9	GW EIP/MODBUS	1062540
		1E/2DB9		1062423
		2E/2DB9		1062380
		2E/4DB9		1062388
PROFINET		1E/1DB9	GW PN/MODBUS	1105707
		1E/2DB9		1105708
		2E/2DB9		1105709
		2E/4DB9		1105710
MQTT		1E/1DB9	GW MQTT/MODBUS	1380010
		1E/2DB9		1380012
		2E/2DB9		1380014
		2E/4DB9		1380015
Modbus TCP	Modbus RTU	1E/1PT	GW MODBUS TCP/RTU	1694644





Fieldbus protocol converters

Converters for easy conversion from HART or Modbus RTU to the three fieldbus protocols.

Connect any HART or MODBUS RTU field device to a Foundation Fieldbus, Profibus-DP, or Profibus-PA network			
		Item description	Item #
Foundation Fieldbus	HART	GW PL FF/HART	2316360
Profibus-PA		GW PL PA/HART	2316361
Profibus-DP		GW PL DP/HART	2316362
Foundation Fieldbus	MODBUS RTU	GW PL FF/MODBUS	2316363
Profibus-PA		GW PL PA /MODBUS	2316364
Profibus-DP		GW PL DP/MODBUS	2316365



Modular HART gateways

The modular HART gateways can monitor up to 40 HART loops, are available in either the basic or Uni Headstation, and connect up to five expansion modules to your HART devices.

Channels	With	Module type	Item description	Item #
Ethernet	Modbus TCP, HART IP, and Arcom	Head station	GW PL ETH/BASIC-BUS	2702321
PROFINET	Modbus TCP, OPC UA, HART IP, and Arcom		GW PL ETH/UNI-BUS	2702233
4		Expansion module	GW PL HART4-BUS	2702234
8	Power		GW PL HART8+AI-BUS	2702236
8			GW PL HART8-BUS	2702235

Combinations

Combinations

Do you have the resources and the time to build your own control panel or control cabinet? Would you prefer either a UL 508 or a Class I Division 2 ready-to-install solution?

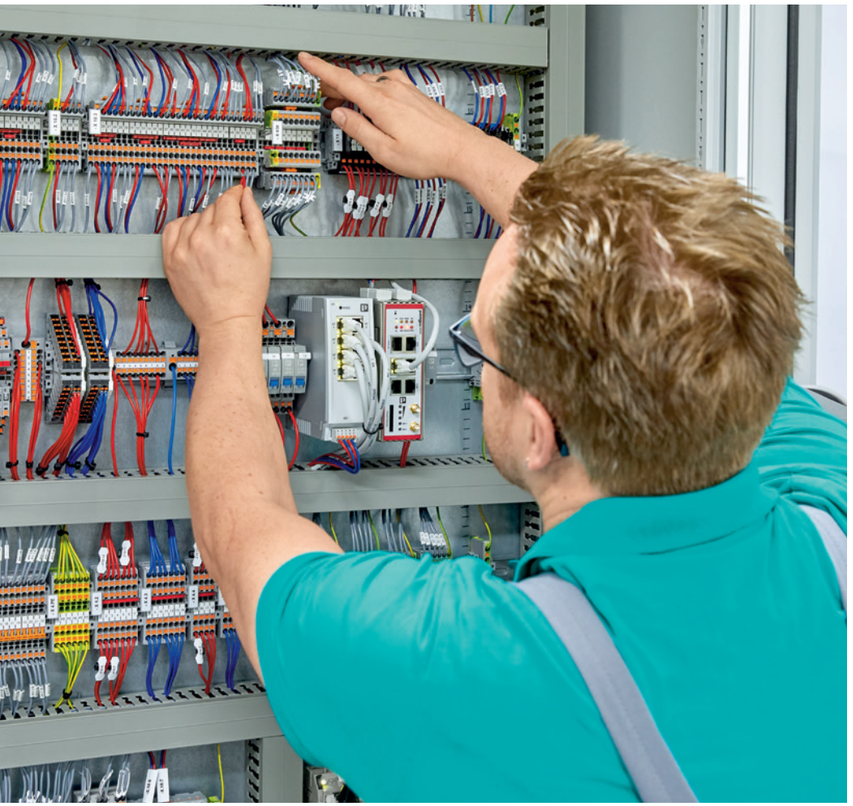
Phoenix Contact offers in-house capability for both UL 508 and CID2 (UL 698A) cabinets from our Harrisburg, Pennsylvania site. Or you can always work with our partners located closer to your project.

From cabinet design, product selection, application expertise, assembly, and UL certification, we can provide you with a variety of reliable and high-quality products and services designed for the industrial automation market.



Connectivity

Never take a good connection for granted. Every wire in your control cabinet is there for a reason. The connections of those wires - via push-in, spring, screw, IDC, ring lug, or crimp – are only as reliable as the quality of the terminations. For over a century, Phoenix Contact has been a trusted partner for reliable connections.



In conjunction with reliability comes safety. In the US, there are many hazardous locations that require more stringent approvals, known as UL Class I, Div 2. Phoenix Contact provides a wide variety of terminal blocks and connection technologies that have been specifically tested to meet these hazardous location requirements.

Push-in technology (PT) enables the direct and tool-free contacting of conductors from 0.25 mm². The special contact spring enables low insertion forces, high conductor pull-out forces, and high contact quality.

Screw connection technology (UT and UK) features a maintenance-free conductor connection and offers maximum flexibility with multi-conductor connections.

No matter which state-of-the-art connection technology you prefer, Phoenix Contact offers single-, double-, and triple-level blocks. We also offer disconnect and fuse terminal blocks for protection and measurement applications. With multiple connection technologies and functionalities available, users have



Cabinet connections



Through the cabinet



Field connections

CONNECTIVITY

- Cabinet
- Through-panel
- Field

Shop floor productivity

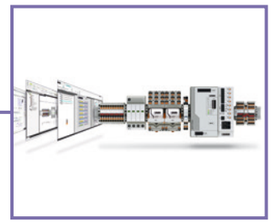
Time is money. The tools and resources used to build your control cabinet are key to controlling costs. Design software, marking systems, industrial tools, wire management, and cabinet accessories are often overlooked. Careful consideration of these products reduces errors and production time, translating directly to the bottom-line profitability of any shop floor.



All aspects of your cabinet design and build will require tools and equipment on the shop floor. Wires and components in and around the cabinet will need to be processed, organized, and identified. This family of products ensures the production of a high-quality cabinet.

SHOP FLOOR PRODUCTIVITY

- Design software
- ID solutions
- Industrial tools
- Cable management



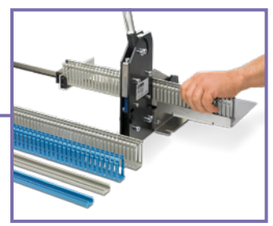
Design software



ID solutions



Industrial tools



Cable management



Accessories

Notes

Notes

Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing forward-thinking products and solutions for the comprehensive electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network, we maintain close relationships with our customers, something we believe is essential for our common success.

You can find your local partner at

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