

MINI MCR-2-T-REL-PT - Limit value switch



2905633

<https://www.phoenixcontact.com/us/products/2905633>

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Universally configurable temperature limit value switch with N/O relay output for the connection of 2, 3, and 4-conductor resistance thermometers and thermocouples. Configurable via DIP switch or software. Push-in connection technology

Product description

Universally configurable temperature limit value switch with relay output and plug-in connection technology for switching temperature limit values. 2, 3, 4-conductor RTD and TC sensors can be processed on the input side. A relay with N/O contact is available on the output side. It is then possible to switch loads up to 250 V AC/DC and max. 6 A. You can configure the device using one of the free software solutions available or your smartphone. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The temperature limit value switch supports fault monitoring and NFC communication.

Commercial data

Item number	2905633
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C404
Product key	CK1443
Catalog page	Page 96 (C-5-2019)
GTIN	4046356999847
Weight per piece (including packing)	119 g
Weight per piece (excluding packing)	99.99 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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Product properties

Product type	Limit value switch
Product family	MINI Analog Pro
No. of channels	1
Type	Signal conditioner
Configuration	DIP switches
	Software
	App

Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

System properties

Functionality

Configuration	DIP switches
	Software
	App

Electrical properties

Switching point accuracy	< 0.1 %
Step response (0–99%)	300 ms
	570 ms
	380 ms
	300 ms
	570 ms
Maximum temperature coefficient	0.01 %/K

Electrical isolation Input/output/power supply

Rated insulation voltage	300 V _{rms}
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation according to IEC/EN 61010-1

Supply

Nominal supply voltage	24 V DC
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Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, item no. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715)
Typical current consumption	44 mA (12 V DC)
	22 mA (24 V DC)
Power consumption	570 mW

Input data

Signal

Number of inputs	1
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Measurement

Number of inputs	1
Configurable/programmable	Yes
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors
Sensor types that can be used (TC)	B, E, J, K, N, R, S, T, L, U, A-1, A-2, A-3, M, L
Available input sources	Resistance thermometers
	Thermocouples
Temperature measuring range	-250 °C ... 2500 °C (RTD)
Temperature measuring range	≥ 20 K (RTD)
Sensor type:	500 °C ... 1820 °C
	-230 °C ... 1000 °C
	-210 °C ... 1200 °C
	-250 °C ... 1372 °C
	-200 °C ... 1300 °C
	-50 °C ... 1768 °C
	-50 °C ... 1768 °C
	-200 °C ... 400 °C
	-200 °C ... 900 °C
	-200 °C ... 600 °C
	0 °C ... 2500 °C
	0 °C ... 1800 °C
	0 °C ... 1800 °C
	-200 °C ... 100 °C
-200 °C ... 800 °C	
Sensor input current	≈ 1 μA (RTD)
Max. permissible overall conductor resistance	≤ 25 Ω (Per line, RTD in 3- or 4-conductor technology)
	≤ 50 Ω (adjustable, RTD in 2-conductor technology)
Linear resistance measuring range	0 Ω ... 4000 Ω (RTD)
Linear mV signal range	-500 mV ... 500 mV (RTD)
Connection technology	2-, 3-, 4-conductor

Output data

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Switching: Relay

Number of outputs	1
Contact switching type	1 N/O contact
Contact material	AgSnO ₂ , hard gold-plated
Maximum switching voltage	250 V AC
	30 V DC
	240 V AC (UL)
Limiting continuous current	6 A AC
	4 A DC
Min. switching current	100 mA (12 V DC)
Max. switching current	6 A AC (250 V AC)
	4 A DC (30 V DC)
Mechanical service life	2x 10 ⁷ cycles
Setting range of the response delay	0 s ... 10 s (can be set freely via software)
Internal hysteresis	can be set freely via software

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ² (with ferrule)
	0.14 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.14 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

Data: IFS interface

Connection method	Micro USB type B
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Signaling

Status display	Green LED (supply voltage)
	Yellow LED (switching output)
Error indication	Red LED

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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Housing material	PBT
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	⊕ II 3G Ex ec ic nC IIC T4 Gc
Certificate	BVS 18 ATEX E 071 X

UKCA Ex (UKEX)

Identification	⊕ II 3 G Ex ec ic IIC T4 Gc
Certificate	PxCIF21UKEX2905632X

IECEX

Identification	Ex ec ic nC IIC T4 Gc
Certificate	IECEX BVS 18.0060X

CCC / China-Ex

Identification	Ex ic nA nC IIC T4 Gc
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UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4A
	Class I, Zone 2, Group IIC T4A

Shipbuilding approval

Certificate	DNV GL TAA000021E Rev. 1
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EAC Ex

Identification	⊕ Ex ec ic nC IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00081

DNV GL data

Temperature	B
Humidity	B

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Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

Standards and regulations

GB Standard

Standards/regulations	GB 3836.1
	GB 3836.4
	GB 3836.8

Mounting

Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

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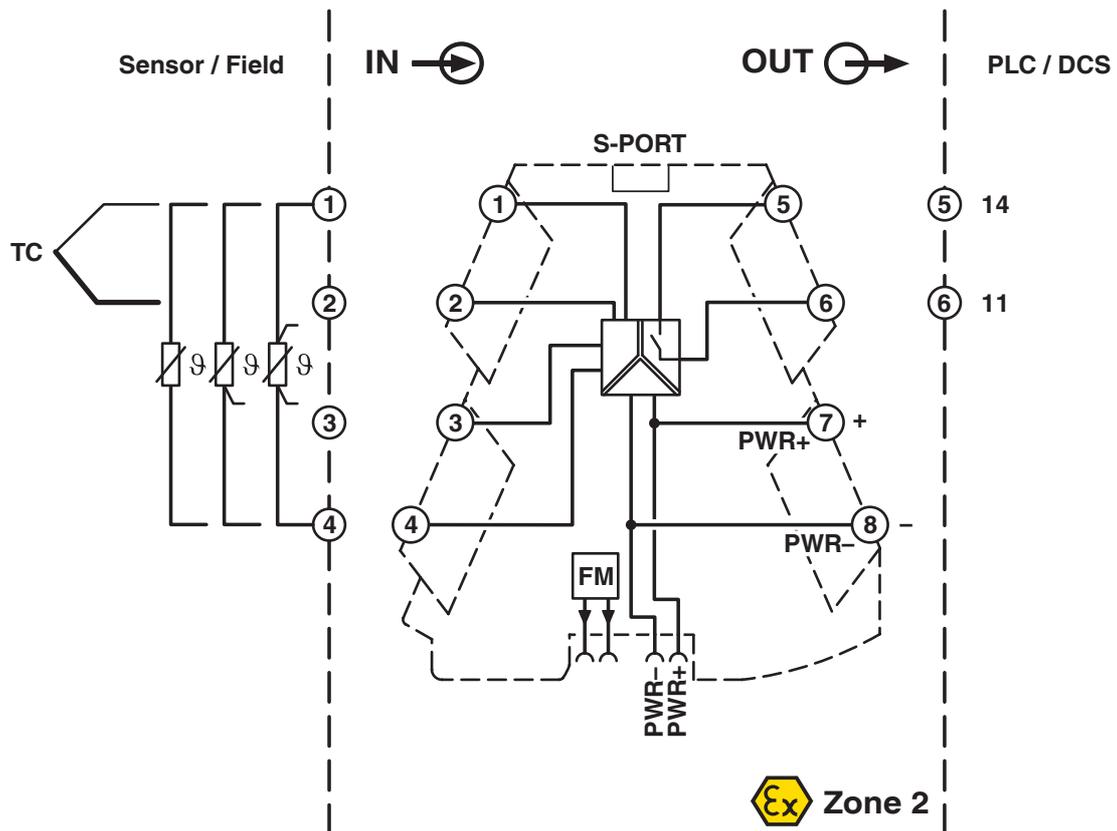


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Drawings

Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2905633>



EAC

Approval ID: RU*DE.*08.B.01536/19



UL Listed

Approval ID: FILE E 238705



CCC

Approval ID: 2021322304003825



cUL Listed

Approval ID: FILE E 238705

DNV

Approval ID: TAA000021E



IECEX

Approval ID: IECEX BVS 18.0060X



cUL Listed

Approval ID: FILE E 196811



UL Listed

Approval ID: FILE E 196811



ATEX

Approval ID: BVS 18 ATEX E 071 X



NEPSI-EX

Approval ID: GYJ20.1319X

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653
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UNSPSC

UNSPSC 21.0	39121000
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	98ba4235-469a-4f88-aea5-5ba1562e0e43

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Accessories

ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - DIN rail bus connectors

2695439

<https://www.phoenixcontact.com/us/products/2695439>

DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715



ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - DIN rail bus connectors

2869728

<https://www.phoenixcontact.com/us/products/2869728>

DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.



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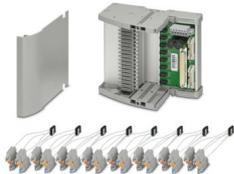
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TC-D37SUB-AIO16-MP-PS-UNI - Module carrier

2906640

<https://www.phoenixcontact.com/us/products/2906640>



Universal Termination Carrier for connecting 16 MINI Analog Pro signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

TC-D37SUB-ADIO16-MP-P-UNI - Module carrier

2906639

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Universal Termination Carrier for connecting 16 MINI Analog Pro signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

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MINI MCR-2-V8-FLK 16 - System adapter

2901993

<https://www.phoenixcontact.com/us/products/2901993>



Eight MINI Analog Pro signal conditioners and measuring transducers can be connected to a controller with minimal cabling effort and without any errors using system adapters and system cabling.

MINI MCR-2-V8-MOD-RTU - Communication module

2905634

<https://www.phoenixcontact.com/us/products/2905634>



Eight MINI Analog Pro signal conditioners and measuring transducers are quickly and easily integrated into a Modbus/RTU network via a communication adapter.

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MINI MCR-2-V8-MOD-TCP - Communication module

2905635

<https://www.phoenixcontact.com/us/products/2905635>



Eight MINI Analog Pro signal conditioners and measuring transducers are quickly and easily integrated into a Modbus/TCP network via a communication adapter.

MINI MCR-2-V8-PB-DP - Communication module

2905636

<https://www.phoenixcontact.com/us/products/2905636>



Eight MINI Analog Pro signal conditioners and measuring transducers are quickly and easily integrated into a PROFIBUS DP network via a communication adapter.

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MINI MCR-2-V8-PN - Communication module

2905637

<https://www.phoenixcontact.com/us/products/2905637>



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a PROFINET network via a communication adapter.

IFS-USB-PROG-ADAPTER - Programming adapter

2811271

<https://www.phoenixcontact.com/us/products/2811271>



Programming adapter with USB interface, for programming with software. The USB driver is included in the software solutions for the products to be programmed, such as measuring transducers or motor managers.

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IFS-BT-PROG-ADAPTER - Adapter

2905872

<https://www.phoenixcontact.com/us/products/2905872>



Bluetooth adapter with micro USB and S-PORT interface for wireless communication with the MINI Analog, MINI Analog Pro, MACX Analog, Interface System Gateways, and PLC logic device series.

TWN4 MIFARE NFC USB ADAPTER - Programming adapter

2909681

<https://www.phoenixcontact.com/us/products/2909681>



Near Field Communication (NFC) programming adapter with USB interface for the wireless configuration of NFC-capable products from Phoenix Contact with software. A separate USB driver is not required.

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FASTCON PRO-SET - Connector set

2906227

<https://www.phoenixcontact.com/us/products/2906227>



FASTCON Pro plug set consisting of four plugs with screw connection, one for each position on the module. Suitable for all MINI Analog Pro modules.

FASTCON PRO-SET-PT - Connector set

2906228

<https://www.phoenixcontact.com/us/products/2906228>



FASTCON Pro plug set consisting of four plugs with push-in connection, one for each position on the module. Suitable for all MINI Analog Pro modules.

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UCT-EM (30X5) - Marker for end clamp

0801505

<https://www.phoenixcontact.com/us/products/0801505>



Marker for end clamp, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, lettering field size: 30 x 5 mm, Number of individual labels: 24

UCT-EM (30X5) CUS - Marker for end clamp

0801589

<https://www.phoenixcontact.com/us/products/0801589>



Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

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SK 5,0 WH:REEL - Marker strip

0805221

<https://www.phoenixcontact.com/us/products/0805221>



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: continuous x 5 mm, Number of individual labels: 10

UC-EMLP (15X5) - Plastic label

0819301

<https://www.phoenixcontact.com/us/products/0819301>



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

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UC-EMLP (15X5) YE - Plastic label

0822615

<https://www.phoenixcontact.com/us/products/0822615>



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

UC-EMLP (15X5) CUS - Plastic label

0824550

<https://www.phoenixcontact.com/us/products/0824550>



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

MINI MCR-2-T-REL-PT - Limit value switch



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UC-EMLP (15X5) YE CUS - Plastic label

0824551

<https://www.phoenixcontact.com/us/products/0824551>

Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm



UC-EMLP (15X5) SR - Plastic label

0828095

<https://www.phoenixcontact.com/us/products/0828095>

Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10



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UC-EMLP (15X5) SR CUS - Plastic label

0828099

<https://www.phoenixcontact.com/us/products/0828099>



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

US-EMLP (15X5) - Plastic label

0828790

<https://www.phoenixcontact.com/us/products/0828790>



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

MINI MCR-2-T-REL-PT - Limit value switch



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US-EMLP (15X5) YE - Plastic label

0828873

<https://www.phoenixcontact.com/us/products/0828873>



Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

US-EMLP (15X5) SR - Plastic label

0828874

<https://www.phoenixcontact.com/us/products/0828874>



Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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US-EMLP (15X5) CUS - Plastic label

0830076

<https://www.phoenixcontact.com/us/products/0830076>

Plastic label, can be ordered: by card, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189



US-EMLP (15X5) YE CUS - Plastic label

0830077

<https://www.phoenixcontact.com/us/products/0830077>

Plastic label, can be ordered: by card, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189



MINI MCR-2-T-REL-PT - Limit value switch

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<https://www.phoenixcontact.com/us/products/2905633>



US-EMLP (15X5) SR CUS - Plastic label

0830078

<https://www.phoenixcontact.com/us/products/0830078>



Plastic label, can be ordered: by card, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

UCT-EM (30X5) YE - Marker for end clamp

0830340

<https://www.phoenixcontact.com/us/products/0830340>



Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, lettering field size: 30 x 5 mm, Number of individual labels: 24

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UCT-EM (30X5) YE CUS - Marker for end clamp

0830348

<https://www.phoenixcontact.com/us/products/0830348>



Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

MINI MCR-2-PTB - Power terminal block

2902066

<https://www.phoenixcontact.com/us/products/2902066>



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Screw connection technology

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MINI MCR-2-PTB-PT - Power terminal block

2902067

<https://www.phoenixcontact.com/us/products/2902067>



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Push-in connection technology

QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

<https://www.phoenixcontact.com/us/products/2904614>



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

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MINI MCR-2-FM-RC - Monitoring block

2904504

<https://www.phoenixcontact.com/us/products/2904504>



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Screw connection technology, standard configuration

MINI MCR-2-FM-RC-PT - Monitoring block

2904508

<https://www.phoenixcontact.com/us/products/2904508>



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Push-in connection technology, standard configuration

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SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/us/products/1205053>



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com