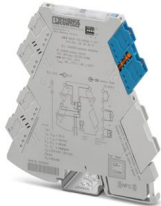


1157854
<https://www.phoenixcontact.com/in/products/1157854>

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Ex i-NAMUR signal conditioner for operating proximity sensors and switches in the Ex area. The signals are transmitted to the safe area via 2 transistor outputs (passive). Standard configuration, Line fault detection, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	1157854
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	*****
Product key	DK1223
GTIN	4063151163099
Weight per piece (including packing)	116.4 g
Weight per piece (excluding packing)	116.4 g
Customs tariff number	85365019
Country of origin	DE

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



1157854

<https://www.phoenixcontact.com/in/products/1157854>

Technical data

Product properties

Product type	Isolating switch amplifier
Product family	MINI Analog Pro
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches
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Electrical properties

Line monitoring	Line fault detection
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Electrical isolation

Overvoltage category	II (≤ 5000 m)
Pollution degree	2 (≤ 5000 m)

Electrical isolation Input/output, power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V _{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Double/reinforced insulation

Electrical isolation Input/output, power supply IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	265 V _{rms}

Electrical isolation Input/output, power supply IEC/EN 60079-7

Standards/regulations	IEC/EN 60079-7
Rated insulation voltage	251 V _{rms}

Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Power consumption	≤ 650 mW

Input data

Signal: NAMUR

Number of inputs	1
Available input sources	NAMUR proximity sensors (IEC/EN 60947-5-6)
	Floating switch contacts
	Switch contacts with resistance circuit

Output data

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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Switching: Transistor

Output description	passive
Max. switching current	50 mA
Switching frequency	$\leq 10 \text{ kHz}$ ($I_{OUT} \geq 5 \text{ mA}$)
	$\leq 20 \text{ kHz}$ ($I_{OUT} \geq 30 \text{ mA}$ (further information in the data sheet))

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
Ex i circuits (EPL)	Ga
	Da
	Ma
	Div. 1

Safety data

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	10.1 V
Max. output current I_o	10.9 mA
Max. output power P_o	28 mW
Safety-related maximum voltage U_m	253 V AC
	125 V DC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	300 mH / 93 μ F
IIB/IIIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 19.4 μ F
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	300 mH / 2.87 μ F
I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	300 mH / 160 μ F
IIB/IIA (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 1 μ F
IIIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 1 μ F
IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 500 nF, 50 mH / 570 nF, 5 mH / 590 nF, 1 mH / 590 nF, 10 μ H / 590 nF
I/IIIB/IIA/IIIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 1 μ F, 5 mH / 1 μ F, 1 mH / 1 μ F, 10 μ H / 1 μ F

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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I (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 1 μ F
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Signaling

Status display	Green LED (supply voltage)
	Yellow LED (switching state / status, lights up when output circuit is active)
	Red LED (line errors)

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
Housing material	PBT

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Altitude range (IEC/EN 61010-1)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	300 V _{rms} (Input/output, power supply)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 61010-1)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	300 V _{rms} (Input/output, power supply)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 61010-1)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	150 V _{rms} (Input/output, power supply)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 60079-11)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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Safety-related maximum voltage U_m	121 V AC
	110 V DC
Rated insulation voltage	150 V _{rms} (Input/output, power supply)

Altitude range (IEC/EN 60079-11)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Safety-related maximum voltage U_m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (Input/output, power supply)

Altitude range (IEC/EN 60079-11)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Safety-related maximum voltage U_m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (Input/output, power supply)

Altitude range (IEC/EN 60079-7)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	162 V _{rms} (Input/output, power supply)

Altitude range (IEC/EN 60079-7)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	60 V _{rms} (Input/output, power supply)

Altitude range (IEC/EN 60079-7)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	60 V _{rms} (Input/output, power supply)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	Ⓔ II (1) G [Ex ia Ga] IIC
	Ⓔ II (1) D [Ex ia Da] IIIC
	Ⓔ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
	Ⓔ I (M1) [Ex ia Ma] I
Certificate	IBExU 21 ATEX 1061 X

IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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Certificate	IECEX IBE 21.0022 X
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CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2023122316116235

UL, USA/Canada

Identification	UL 61010-2-201 Listed
	Class I, Div. 1, Groups A, B, C, D
	Class II, Div. 1, Groups E, F, G
	Class III, Div. 1
	Class I, Zone 0, 1, 2, Groups IIC, IIB, IIA
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2
	AEx ec [ia Ga] IIC T4 Gc; AEx ec [ia IIIC Da] IIC T4 Gc
	Ex ec [ia Ga] IIC T4 Gc X; Ex ec [ia IIIC Da] IIC T4 Gc X
	Class I, Zone 0, [AEx ia Ga] IIC, [Ex ia Ga] IIC X
	Class I, Zone 20, [AEx ia Da] IIIC, [Ex ia Da] IIIC X
Certificate	•C.D.-No 097285872

UL, USA/Canada

Identification	UL 61010-2-201 Listed
Certificate	•C.D.-No 097285872

Shipbuilding approval

Certificate	DNV TAA00003FZ
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Safety Integrity Level (SIL, IEC 61508)

Identification	3
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INMETRO

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	DNV 23.0188 X

Shipbuilding data

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

EMC data

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Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21
Noise immunity	EN 61000-6-2
	EN 61326-3-2
Noise emission	EN 61000-6-4

Standards and regulations

GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

Mounting

Mounting position	any
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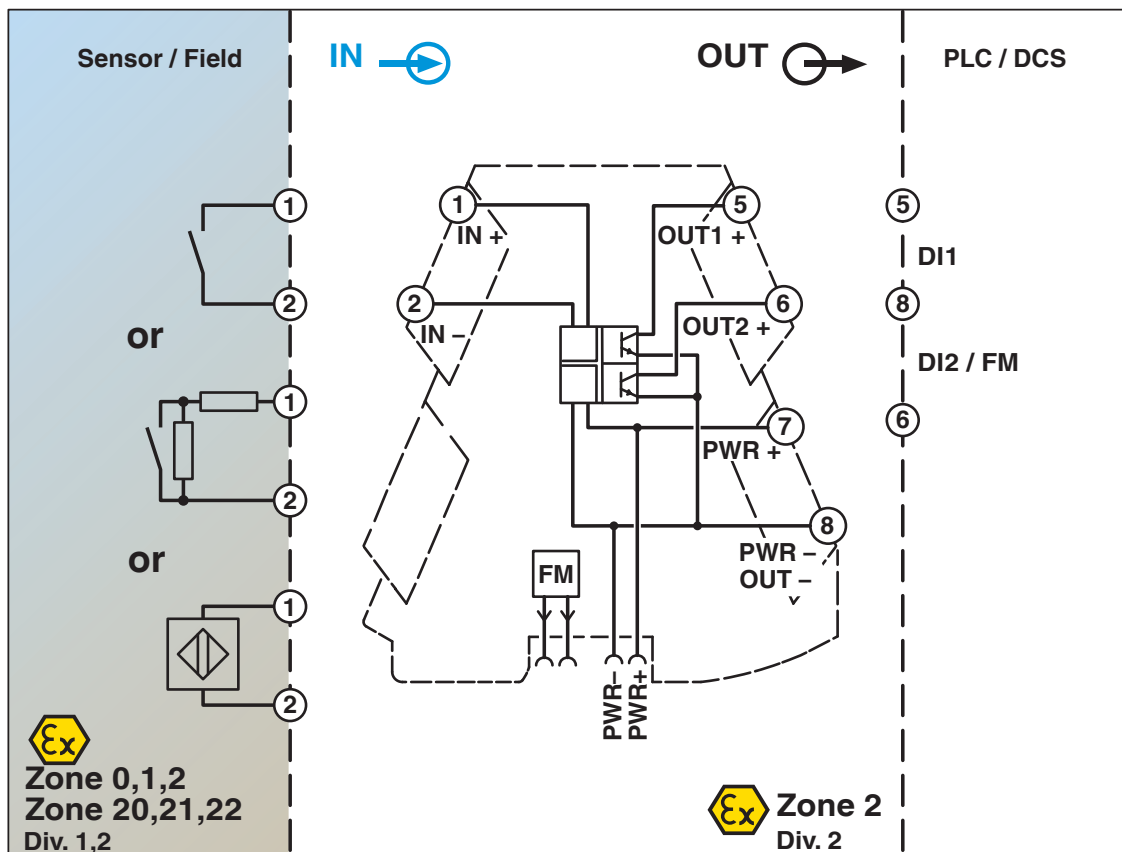
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<https://www.phoenixcontact.com/in/products/1157854>

Drawings

Block diagram



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1157854>



cULus Listed

Approval ID: E238705



Functional Safety

Approval ID: 1435.IM.131623/19

DNV

Approval ID: TAA00003FZ



IECEx

Approval ID: IECEx IBE 21.0022X



ATEX

Approval ID: IBExU21ATEX1061 X



CCC

Approval ID: 20231223161162352023



UKCA-EX

Approval ID: CML22UKEX3567XIssue0

INMETRO

Approval ID: DNV 23.0188 X



cULus Listed

Approval ID: E196811



cULus Listed

Approval ID: E196811

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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Classifications

ECLASS

ECLASS-11.0	27210121
ECLASS-12.0	27210121
ECLASS-13.0	27210121

ETIM

ETIM 9.0	EC001485
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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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	153e2927-aa2f-4d54-b3d8-e478ae5edd31

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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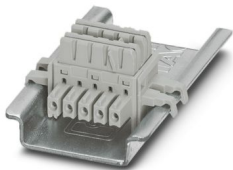
<https://www.phoenixcontact.com/in/products/1157854>

Accessories

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

2695439

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

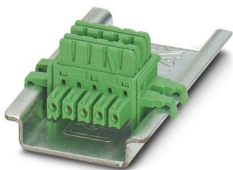


DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715

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

2869728

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



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

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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MCR-DP - Separating plate

1430594

<https://www.phoenixcontact.com/in/products/1430594>



The partition plate is used to maintain Ex i isolating distances when Ex i and non-Ex i devices are mounted side by side on a DIN rail.

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

2901993

<https://www.phoenixcontact.com/in/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-EX-NAM-2T-PT - Isolation switch amplifier



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<https://www.phoenixcontact.com/in/products/1157854>

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

0801505

<https://www.phoenixcontact.com/in/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: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

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

0801589

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



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

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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SK 5,0 WH:REEL - Marker strip

0805221

<https://www.phoenixcontact.com/in/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, Number of individual labels: 10, text field height: 5 mm, text field width: 90000 mm

UC-EMLP (15X5) - Plastic label

0819301

<https://www.phoenixcontact.com/in/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, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



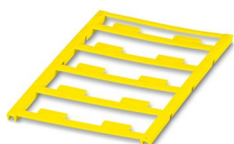
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<https://www.phoenixcontact.com/in/products/1157854>

UC-EMLP (15X5) YE - Plastic label

0822615

<https://www.phoenixcontact.com/in/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, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

UC-EMLP (15X5) CUS - Plastic label

0824550

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



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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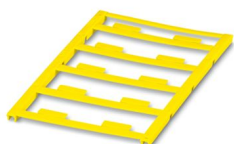
<https://www.phoenixcontact.com/in/products/1157854>

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

0824551

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

Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm



UC-EMLP (15X5) SR - Plastic label

0828095

<https://www.phoenixcontact.com/in/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, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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<https://www.phoenixcontact.com/in/products/1157854>

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

0828099

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

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



US-EMLP (15X5) - Plastic label

0828790

<https://www.phoenixcontact.com/in/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, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



1157854

<https://www.phoenixcontact.com/in/products/1157854>

US-EMLP (15X5) YE - Plastic label

0828873

<https://www.phoenixcontact.com/in/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, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) SR - Plastic label

0828874

<https://www.phoenixcontact.com/in/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, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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US-EMLP (15X5) CUS - Plastic label

0830076

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

Plastic label, Card, can be ordered: by card, white, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



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

0830077

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

Plastic label, Card, can be ordered: by card, yellow, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



1157854

<https://www.phoenixcontact.com/in/products/1157854>

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

0830078

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

Plastic label, Card, can be ordered: by card, silver, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



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

0830340

<https://www.phoenixcontact.com/in/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: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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

0830348

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

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



MINI MCR-2-PTB - Power terminal block

2902066

<https://www.phoenixcontact.com/in/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



MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



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

2902067

<https://www.phoenixcontact.com/in/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/in/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

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



1157854

<https://www.phoenixcontact.com/in/products/1157854>

MINI MCR-2-FM-RC - Monitoring block

2904504

<https://www.phoenixcontact.com/in/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/in/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

MINI MCR-EX-NAM-2T-PT - Isolation switch amplifier



1157854

<https://www.phoenixcontact.com/in/products/1157854>

SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/in/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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