

2902026

https://www.phoenixcontact.com/in/products/2902026

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Universally configurable 4-way signal conditioner, with switching output and plug-in connection technology for the electrical isolation of analog signals. Configurable via DIP switch or software. Screw connection technology, standard configuration.

Product Description

Configurable, freely adjustable 4-way signal conditioner with switching output and plug-in connection technology for the electrical isolation, conversion, amplification, and filtering of standard signals. Current signals between 0 mA ... 24 mA and voltage signals between 0 V ... 12 V can be processed on the input side. Signals between 0 mA ... 21 mA and 0 V ... 10.5 V are possible on the output side. The minimum measuring span is 1 mA and 0.5 V. Full accuracy is maintained with a measuring span greater than 10 mA and 5 V. You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The measuring transducer supports fault monitoring and NFC communication.

Commercial Data

Item number	2902026
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK1
Product Key	CK1411
Catalog Page	Page 68 (C-5-2019)
GTIN	4046356649681
Weight per Piece (including packing)	123.6 g
Weight per Piece (excluding packing)	70.53 g
Customs tariff number	85437090
Country of origin	DE



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Technical Data

Notes

Jtilization restriction	
EMC note	EMC: class A product, see manufacturer's declaration in the download area
oduct properties	
Product type	Signal conditioner
Product family	MINI Analog Pro
No. of channels	1
Туре	Signal conditioner
Configuration	DIP switches
	Software
	Арр
nsulation characteristics: GB Standard	
Overvoltage category	II
Pollution degree	2
ectrical properties	
No. of channels	1
Electrical isolation	4-way isolation
Electrical isolation between input and output	yes
Step response (0–99%)	140 ms (15 Hz sample rate)
	45 ms (60 Hz sample rate)
	25 ms (240 Hz sample rate, can only be set via software)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Maximum transmission error	0.1 % (of final value)
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
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	32 mA (24 V DC)
	63 mA (12 V DC)
	03 IIIA (12 V DC)



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Input data

Signal: Voltage/current	Signal:	Voltage/	current
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Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V 10 V (via DIP switch)
	2 V 10 V (via DIP switch)
	0 V 5 V (via DIP switch)
	1 V 5 V (via DIP switch)
	10 V 0 V (via DIP switch)
	10 V 2 V (via DIP switch)
	5 V 0 V (via DIP switch)
	5 V 1 V (via DIP switch)
	0 V 12 V (can be set via software)
Max. voltage input signal	12 V
Current input signal	0 mA 20 mA (via DIP switch)
	4 mA 20 mA (via DIP switch)
	0 mA 10 mA (via DIP switch)
	2 mA 10 mA (via DIP switch)
	20 mA 0 mA (via DIP switch)
	20 mA 4 mA (via DIP switch)
	10 mA 0 mA (via DIP switch)
	10 mA 2 mA (via DIP switch)
	0 mA 24 mA (can be set via software)
Max. current input signal	24 mA
Input resistance of voltage input	> 120 kΩ
Input resistance current input	approx. 50 Ω (+0.7 V for test diode)
input resistance current input	

Output data

Switching: Transistor

<u> </u>	
Number of outputs	1
Contact type	1 N/O contact
Minimum switching voltage	1 V
Maximum switching voltage	30 V DC
Min. switching current	100 μΑ
Max. switching current	100 mA (at 30 V)

Signal: Voltage/current

oignam voitage/ear.oin	
Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V 10 V (via DIP switch)
	2 V 10 V (via DIP switch)
	0 V 5 V (via DIP switch)
	1 V 5 V (via DIP switch)



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	0 V 10.5 V (can be set via software)
Max. voltage output signal	approx. 12.3 V
Current output signal	0 mA 20 mA (via DIP switch)
	4 mA 20 mA (via DIP switch)
	0 mA 10 mA (via DIP switch)
	2 mA 10 mA (via DIP switch)
	0 mA 21 mA (can be set via software)
Max. current output signal	24.6 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 20 mV _{PP} (at 600 Ω)
	< 20 mV _{PP} (at 600 Ω)

Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² 1.5 mm ² (with ferrule)
	0.14 mm ² 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.14 mm² 2.5 mm²
Conductor cross section AWG	24 12 (flexible)
Tightening torque	0.5 Nm 0.6 Nm

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

Data: IFS interface

Connection method Micro USB ty	
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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

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



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Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2
Housing material	PBT
nvironmental 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)
pprovals	
CE	
Certificate	CE-compliant
ATEX	
Identification	☐ II 3 G Ex ec IIC T4 Gc
Certificate	BVS 19 ATEX E 083 X
UKCA Ex (UKEX)	
Identification	□ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF21UKEX2905026X
Certificate	T XOII 2 TONE A2900020X
IECEx	
Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 19.0072X
CCC / China-Ex	
Identification	Ex nA IIC T4 Gc
Certificate	NEPSI GYJ21.1123X
UL, USA/Canada	
Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6
Shipbuilding approval	
Certificate	DNV GL TAA000021E Rev. 1
Oci unicate	DIV OL IMMUUUZIL NEV. I
EAC Ex	
Identification	□ 2Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00079
DNV GL data	
Temperature	В
11 116	В
Humidity	



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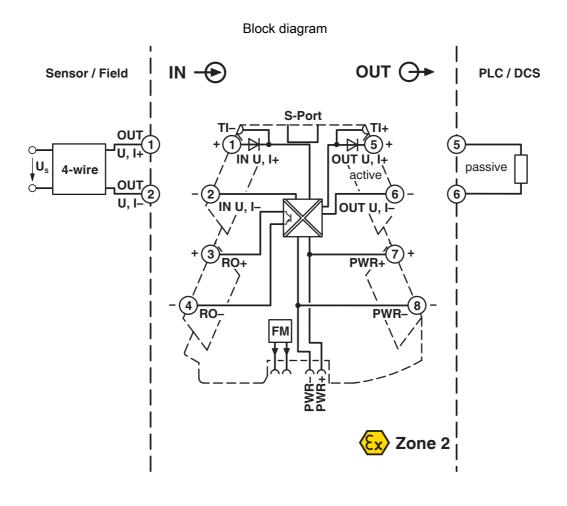
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board
EMC data	
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Electrostatic discharge	
Standards/regulations	EN 61000-4-2
Electrostatic discharge Comments	Safety measures must be taken to prevent electrostatic discharge.
	distribute.
Electromagnetic HF field	
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.2 %
Fast transients (burst)	
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.1 %
Surge current load (surge)	
Standards/regulations	EN 61000-4-5
Conducted interference	
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	2.8 %
Standards and regulations	
Electrical isolation	4-way isolation
GB Standard	
Standards/regulations	GB 3836.1
	GB 3836.8
Mounting	
Mounting type	DIN rail mounting
Assembly instructions	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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Drawings





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Approvals



Approval ID: TAA000021E



UL Listed

Approval ID: FILE E 238705



CCC Approval ID: 2021322310003877



cUL Listed

Approval ID: FILE E 238705



Approval ID: IECEx BVS 19.0072X



cUL Listed

Approval ID: FILE E 196811



UL Listed

Approval ID: FILE E 196811



ATEX

Approval ID: BVS 19 ATEX E 083 X



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Classifications

UNSPSC 21.0

ECLASS

ECLASS-11.0	27210120	
ECLASS-12.0	27210120	
ECLASS-13.0	27210120	
ETIM		
ETIM 8.0	EC002653	
UNSPSC		

39121000



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Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"



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Accessories

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

2906640

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

https://www.phoenixcontact.com/in/products/2906639

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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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 $35/\dots$ DIN rail in accordance with EN 60715

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



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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-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



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

2902067

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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

MINI MCR-2-FM-RC - Monitoring module

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



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

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-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.



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

2905634

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

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

2905635

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



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

2905636

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

MINI MCR-2-V8-PN - Communication module

2905637

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



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IFS-USB-PROG-ADAPTER - Programming adapter

2811271

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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.

IFS-BT-PROG-ADAPTER - Adapter

2905872

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



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TWN4 MIFARE NFC USB ADAPTER - Programming adapter

2909681

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

FASTCON PRO-SET - Connector set

2906227

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



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FASTCON PRO-SET-PT - Connector set

2906228

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

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: snapped, lettering field size: 30 x 5 mm, Number of individual labels: 24



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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, lettering field size: 30×5 mm, Number of individual labels: 24

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, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000



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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, lettering field size: 15 x 5 mm, Number of individual labels: 10

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, lettering field size: 15 x 5 mm, Number of individual labels: 10



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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, lettering field size: $15 \times 5 \text{ mm}$



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, lettering field size: 15 x 5 mm





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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, lettering field size: 15 x 5 mm, Number of individual labels: 10

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, lettering field size: 15 x 5 mm, Number of individual labels: 10



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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, lettering field size: 15 x 5 mm, Number of individual labels: 189

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, lettering field size: 15×5 mm, Number of individual labels: 189



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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, lettering field size: 15 x 5 mm, Number of individual labels: 189

US-EMLP (15X5) CUS - Plastic label

0830076

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





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

0830077

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

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

0830078

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



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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: snapped, lettering field size: 30 x 5 mm, Number of individual labels: 24

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, lettering field size: 30 x 5 mm, Number of individual labels: 24

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