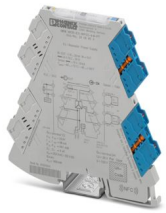
MINI MCR-EX-RPSS-I-I-PT - Repeater power supply

2908804

https://www.phoenixcontact.com/us/products/2908804

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CRA-READY



Ex i-Repeater power supply and input signal conditioner transmits supplied or active 0 mA/4 mA ... 20 mA signals from the Ex area to a load in the safe area.. number of channels: 1, open-circuit voltage: 15 V DC, Standard configuration, 3-way isolation, Line fault detection, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	2908804
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1221
GTIN	4055626362984
Weight per piece (including packing)	120.833 g
Weight per piece (excluding packing)	120.833 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Note on application

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Product properties

Product type	Repeater power supply
Product family	MINI Analog Pro
Application	Analog IN
No. of channels	1

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Line monitoring	Line fault detection
Signal transmission behavior	In = Out
Step response (10-90%)	≤ 10 ms
Maximum temperature coefficient	≤ 0.01 %/K
Maximum transmission error	≤ 0.1 %
Reverse polarity protection	yes

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	253 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 (24 V DC, -20 % ... +25 %)

Power consumption	≤ 1.4 W

Input data

Signal: Repeater power supply operation

Description of the input	Active current input, intrinsically safe
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (20 mA)
	> 15.75 V (21 mA)

Signal: Signal conditioner operation

Description of the input	Passive current input, intrinsically safe
Current input signal	4 mA ... 20 mA
	0 mA ... 20 mA
Voltage drop	< 4 V DC (20 mA)

Output data

Signal: Repeater power supply operation

Output description	Current output
Number of outputs	1
Current output signal	4 mA ... 20 mA
Load/output load current output	≤ 450 Ω (20 mA)
	≤ 420 Ω (21 mA)
Open-circuit voltage	≤ 15 V DC
Short-circuit-proof	yes

Signal: Signal conditioner operation

Output description	Current output
Number of outputs	1
Current output signal	4 mA ... 20 mA
	0 mA ... 20 mA
Load/output load current output	≤ 450 Ω (20 mA)
	≤ 420 Ω (21 mA)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm² ... 2.5 mm² (with ferrule)
	0.14 mm² ... 2.5 mm² (without ferrule)
Conductor cross-section flexible	0.14 mm² ... 2.5 mm²
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: Repeater power supply operation

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	4 nF
Max. output voltage U_o	26.4 V
Max. output current I_o	98 mA
Max. output power P_o	647 mW
Safety-related maximum voltage U_m	253 V AC (≤ 2000 m)
	125 V DC (≤ 2000 m)
	121 V AC (> 2000 m ... 3000 m)
	110 V DC (> 2000 m ... 3000 m)
	33 V AC/DC (> 3000 m ... 4000 m)
	33 V AC/DC (> 4000 m ... 5000 m)
IIA/I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 2.48 µF
IIB/III (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 730 nF
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	2 mH / 92 nF
IIA/I (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 496 nF, 1 mH / 556 nF, 500 µH / 656 nF, 200 µH / 836 nF, 100 µH / 996 nF
IIB/III (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 306 nF, 1 mH / 386 nF, 500 µH / 466 nF, 200 µH / 616 nF, 100 µH / 736 nF
IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	1.4 mH / 45 nF, 1 mH / 52 nF, 500 µH / 69 nF, 200 µH / 92 nF

Safety data: Signal conditioner operation

Input voltage U_i	30 V
Input current I_i	150 mA
Max. internal inductance L_i	negligible
Max. internal capacitance C_i	4 nF
Safety-related maximum voltage U_m	253 V AC (≤ 2000 m)
	125 V DC (≤ 2000 m)
	121 V AC (> 2000 m ... 3000 m)
	110 V DC (> 2000 m ... 3000 m)
	33 V AC/DC (> 3000 m ... 4000 m)
	33 V AC/DC (> 4000 m ... 5000 m)
IIA/I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 2.48 µF
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IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	1.4 mH / 45 nF, 1 mH / 52 nF, 500 µH / 69 nF, 200 µH / 92 nF

Interfaces

Connection method	S-PORT

Data communication (bypass)

Protocols supported	HART-transparent
Limit frequency (3 dB)	≥ 1.75 kHz

Signaling

Status display	Green LED (supply voltage)

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

Ambient temperature (operation)	-40 °C ... 70 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (at 25 °C, non-condensing)
Shock (operation)	15g (DIN EN 60068-2-27)
Vibration (operation)	5g (DIN EN 60068-2-6)

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
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
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
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

ATEX

Identification	Ⓔx I (M1) [Ex ia Ma] I
	Ⓔx II (1) G [Ex ia Ga] IIC
	Ⓔx II (1) D [Ex ia Da] IIIC
	Ⓔx II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
Certificate	BVS 23 ATEX 006 X

IECEx

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	IECEx BVS 23.0003X

CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2023122310117250

INMETRO

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	DNV 23.0186 X

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

Shipbuilding approval

Certificate	DNV TAA00003FZ

Safety Integrity Level (SIL, IEC 61508)

Identification	3
Note	single-channel

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

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

Noise emission

Standards/regulations	EN 61000-6-4

Standards and regulations

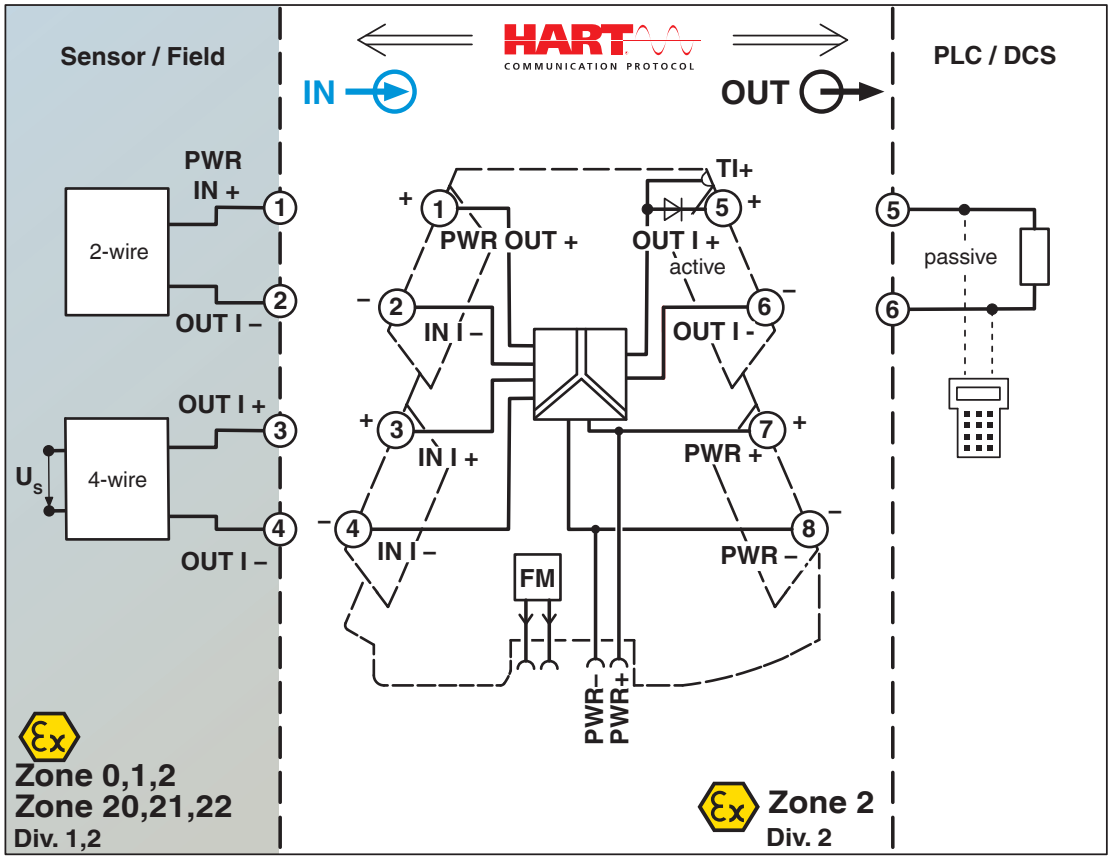
Electrical isolation	3-way isolation

Mounting

Mounting type	DIN rail mounting
Mounting position	any

Drawings

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2908804

Functional Safety
Approval ID: 1435.IM.131623/19

cULus Listed
Approval ID: E238705

DNV
Approval ID: TAA00003FZ

cULus Listed
Approval ID: E238705

IECEx
Approval ID: IECEx BVS 23.0003X

ATEX
Approval ID: BVS 23 ATEX E 006 X

CCC
Approval ID: 2023122303117249

cULus Listed
Approval ID: E196811

cULus Listed
Approval ID: E196811

INMETRO
Approval ID: DNV 23.0186 X

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120
ECLASS-15.0 ASSET	27250101

ETIM

ETIM 10.0	EC002653

UNSPSC

UNSPSC 21.0	39121008

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	2682cf28-0881-4668-9dac-7437f6e9aa0b

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