

MINI MCR-2-RPSS-I-I - Repeater power supply



2902014

<https://www.phoenixcontact.com/us/products/2902014>

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3-way repeater power supply with plug-in connection technology. HART-transparent, input signal 0(4)...20 mA, output signal 0(4)...20 mA. The device can be used in both isolator and repeater power supply operation. Screw connection technology

Product description

The repeater power supply with plug-in connection technology supplies the transmitter in the field and electrically isolates the input signal from the output signal. HART data protocols can be transmitted bidirectionally. The device can be used in both isolator and repeater power supply operation. Electrically isolated 0 ... 20 mA or 4 ... 20 mA standard analog signals are available on the input and output sides with a maximum output load of 600 Ω . The measuring transducer supports fault monitoring and NFC communication.

Commercial data

Item number	2902014
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C404
Product key	CK1411
Catalog page	Page 77 (C-5-2019)
GTIN	4046356651981
Weight per piece (including packing)	125.4 g
Weight per piece (excluding packing)	110 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	Repeater power supplies
Product family	MINI Analog Pro
No. of channels	1
Type	Signal conditioner

Data management status

Article revision	12
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Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Limit frequency (3 dB)	> 1.75 kHz
Protective circuit	Transient protection
Signal transmission behavior	In = Out
Step response (10-90%)	< 200 μ s (typ.)
Maximum temperature coefficient	0.0075 %/K
Temperature coefficient, typical	0.0075 %/K
Maximum transmission error	0.05 % (of final value in repeater power supply operation) 0.1 % (of final value in isolator operation)

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	25 mA (at 24 V DC and in isolator operation) 50 mA (at 24 V DC and in repeater power supply operation) 55 mA (at 12 V DC and in isolator operation)

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	110 mA (at 12 V DC and in repeater power supply operation)
Power consumption	≤ 1400 mW (at $I_{OUT} = 20$ mA, 9.6 V DC, 600 Ω load)

Input data

Signal: Current

Description of the input	Sensor circuit
Number of inputs	1
Current input signal	0 mA ... 20 mA (isolator operation) 4 mA ... 20 mA (repeater power supply and isolator operation)
Input resistance current input	≈ $\frac{1}{4}$ Ω (+0.7 V for test diode)
Transmitter supply voltage	> 19.5 V

Output data

Signal: Current

Number of outputs	1
Non-load voltage	< 20 V
Current output signal	0 mA ... 20 mA (isolator operation) 4 mA ... 20 mA (repeater power supply and isolator operation)
Max. current output signal	24 mA
Load/output load current output	≤ 600 Ω (20 mA)
Ripple	< 20 mV _{PP} (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 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

Ex data

Ex installation (EPL)	Gc Div. 2
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Interfaces

Data communication (bypass)

HART function	Yes
Limit frequency (3 dB)	≈  kHz

Signaling

Status display	Green LED (supply voltage)
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Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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 3 G Ex ec IIC T4 Gc
Certificate	BVS 19 ATEX E 047 X

UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF21UKEX2902000X

IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX BVS 19.0041X

CCC / China-Ex

Identification	Ex nA IIC T4 Gc
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UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC T5

Shipbuilding approval

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Certificate	DNV GL TAA00002UA
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EAC Ex

Identification	Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00079

DNV GL 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

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
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Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
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Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4

Surge current load (surge)

Standards/regulations	EN 61000-4-5
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Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

Standards and regulations

Electrical isolation	3-way isolation
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GB Standard

Standards/regulations	GB 3836.1
	GB 3836.8

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Mounting

Mounting type	DIN rail mounting
Thread type	()
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

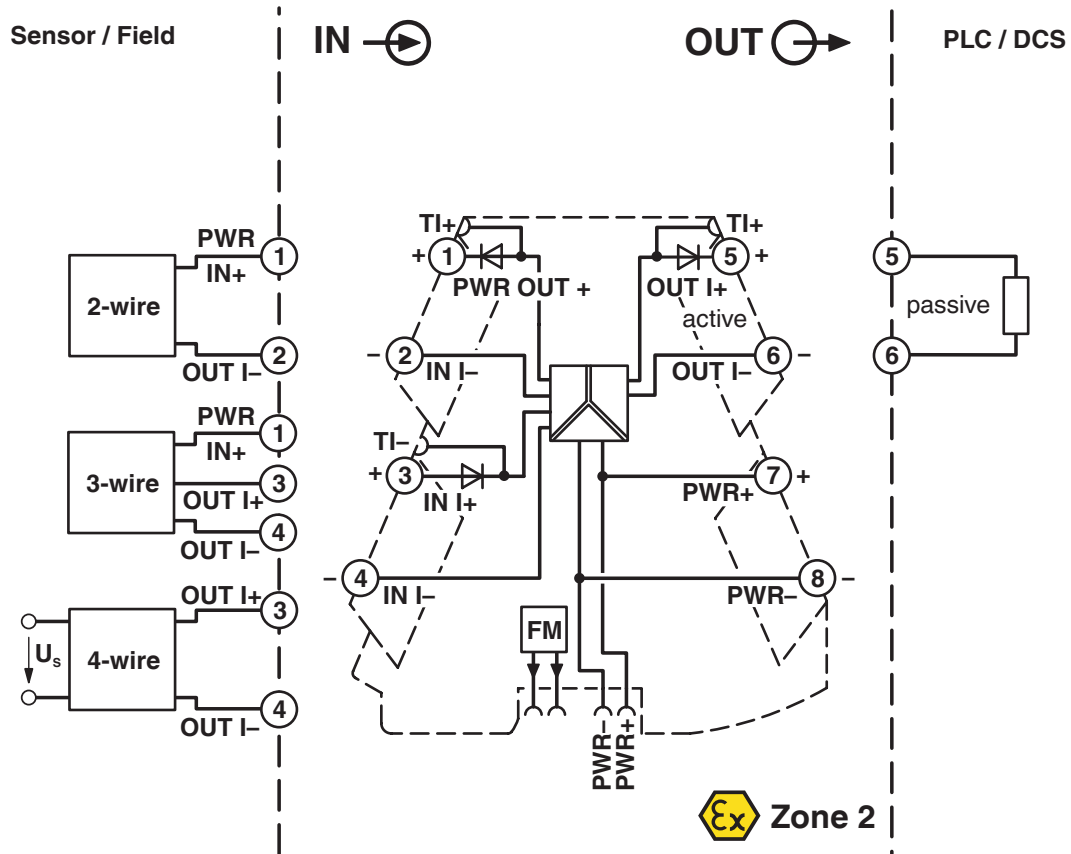
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Drawings

Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2902014>



DNV GL

Approval ID: TAA00002UA



UL Listed

Approval ID: FILE E 238705



CCC

Approval ID: 2021322303003858



cUL Listed

Approval ID: FILE E 238705



IECEx

Approval ID: IECEx BVS 19.0041X



cUL Listed

Approval ID: E196811



UL Listed

Approval ID: E196811



ATEX

Approval ID: BVS 19 ATEX E 047 X

cULus Listed

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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	83b9800d-f0d2-4547-b4b9-4a4a71e9c09c

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