

# Repeater power supply - PI-EX-RPSS - 2865243


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Ex i analog input: Repeater power supply, HART. Feeds intrinsically safe 2-conductor measuring transducers installed in an Ex area and transmits the 4-20 mA signal to a load in a safe area. Galvanic 3-way isolation (input / output / supply).



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 164290
GTIN	4046356164290

## Technical data

### Dimensions

Width	12.4 mm
Height	79 mm
Depth	118.4 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

### Input data

Signal input	Intrinsically safe
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (at 20 mA)
	> 15.3 V (at 22.5 mA)

### Output data

Signal output	Current output
Current output signal	4 mA ... 20 mA (active)
	4 mA ... 20 mA (14 ... 26 V ext. source voltage)

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## Technical data

### Output data

Load/output load current output	< 600 Ω (at 20 mA)
	< 525 Ω (at 22.5 mA)
Output ripple	< 20 mV <sub>rms</sub>
Output behavior in the event of an error	0 mA (Cable break in the input)
	≥ 24 mA (Cable short-circuit in the input)

### Power supply

Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 60 mA (at 24 V DC)
Power dissipation	< 1.1 W (at 24 V DC / 20 mA)

### General

No. of channels	1
Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)
Maximum temperature coefficient	< 0.01 %/K
Step response (10-90%)	< 600 μs (for 4 mA ... 20 mA step)
Status display	Green LED (supply voltage, PWR)
Degree of pollution	2
Overvoltage category	II
Housing material	PBT and polyamide PA non-reinforced
Color	green
Designation	Input/output/power supply
	Input/output
Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
Designation	Input/power supply
Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

### Data communication (bypass)

HART function	Yes
Protocols supported	HART

### Safety characteristic data

Integrity requirement	IEC 61508 - Low demand
Designation	Repeater power supply operation
Equipment type	Type A
Safety Integrity Level (SIL)	2
Safe Failure Fraction (SFF)	90.9 %
λ <sub>SU</sub>	1.51 x 10 <sup>-7</sup> (151 FIT)
λ <sub>SD</sub>	0
λ <sub>DU</sub>	4.1 x 10 <sup>-8</sup> (41 FIT)
λ <sub>DD</sub>	2.63 x 10 <sup>-7</sup> (263 FIT)

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## Technical data

### Safety characteristic data

Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	1.96 x 10 <sup>-4</sup> (1 year)
	3.74 x 10 <sup>-4</sup> (2 years)
	9.07 x 10 <sup>-4</sup> (5 years)
Diagnostic coverage (DC)	DC <sub>S</sub> = 0%, DC <sub>D</sub> = 86%
Integrity requirement	IEC 61508 - Low demand
Designation	Input isolating amplifier (4 ... 20 mA)
Equipment type	Type A
Safety Integrity Level (SIL)	2
Safe Failure Fraction (SFF)	91.2 %
λ <sub>SU</sub>	1.52 x 10 <sup>-7</sup> (152 FIT)
λ <sub>SD</sub>	0
λ <sub>DU</sub>	3.8 x 10 <sup>-8</sup> (38 FIT)
λ <sub>DD</sub>	2.44 x 10 <sup>-7</sup> (244 FIT)
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	1.81 x 10 <sup>-4</sup> (1 year)
	3.46 x 10 <sup>-4</sup> (2 years)
	8.41 x 10 <sup>-4</sup> (5 years)
Diagnostic coverage (DC)	DC <sub>S</sub> = 0%, DC <sub>D</sub> = 86%

### Safety data

Max. output voltage U <sub>o</sub>	25.2 V
Max. output current I <sub>o</sub>	93 mA
Max. output power P <sub>o</sub>	590 mW
Group	IIB
Max. external inductivity L <sub>o</sub>	4 mH
Max. external capacitance C <sub>o</sub>	820 nF
Group	IIC
Max. external inductivity L <sub>o</sub>	2 mH
Max. external capacitance C <sub>o</sub>	107 nF
Safety-related maximum voltage U <sub>m</sub>	253 V AC

### Standards and Regulations

Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia] IIC
	# II (1) D [Ex iaD]
	# II 3 (1) G Ex nA [ia] IIC T4
Group	IIB
	IIC

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years

# Repeater power supply - PI-EX-RPSS - 2865243

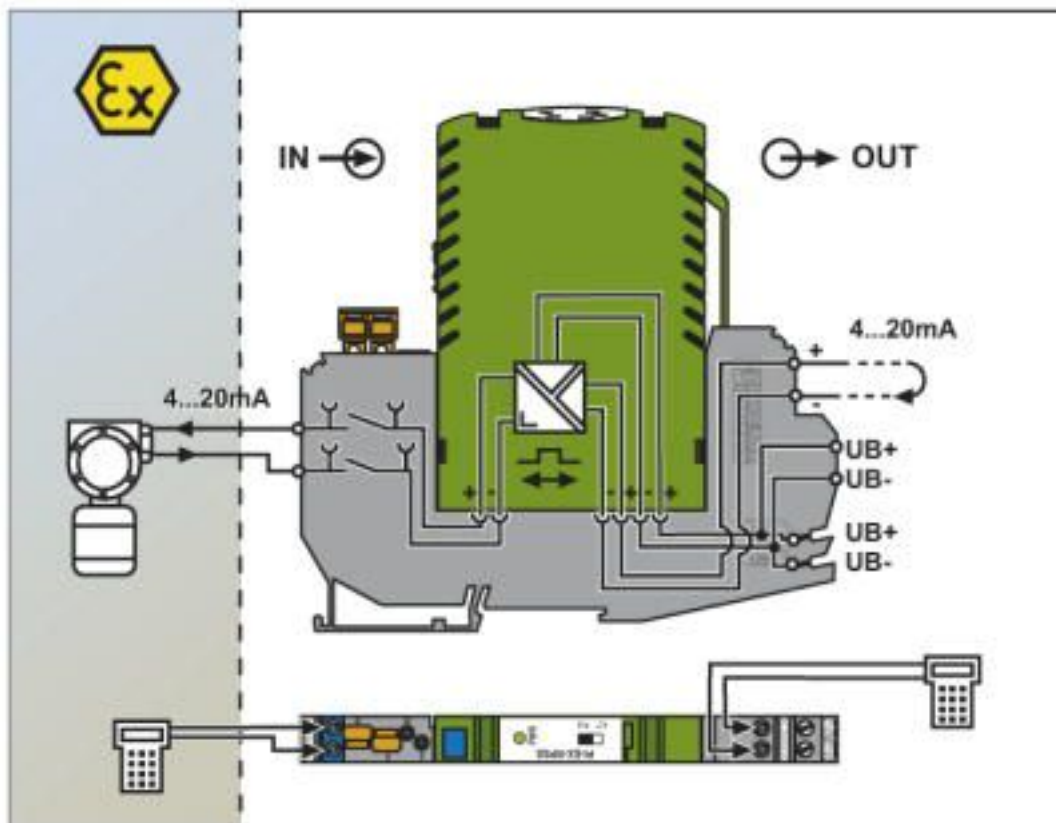
## Technical data

### Environmental Product Compliance

	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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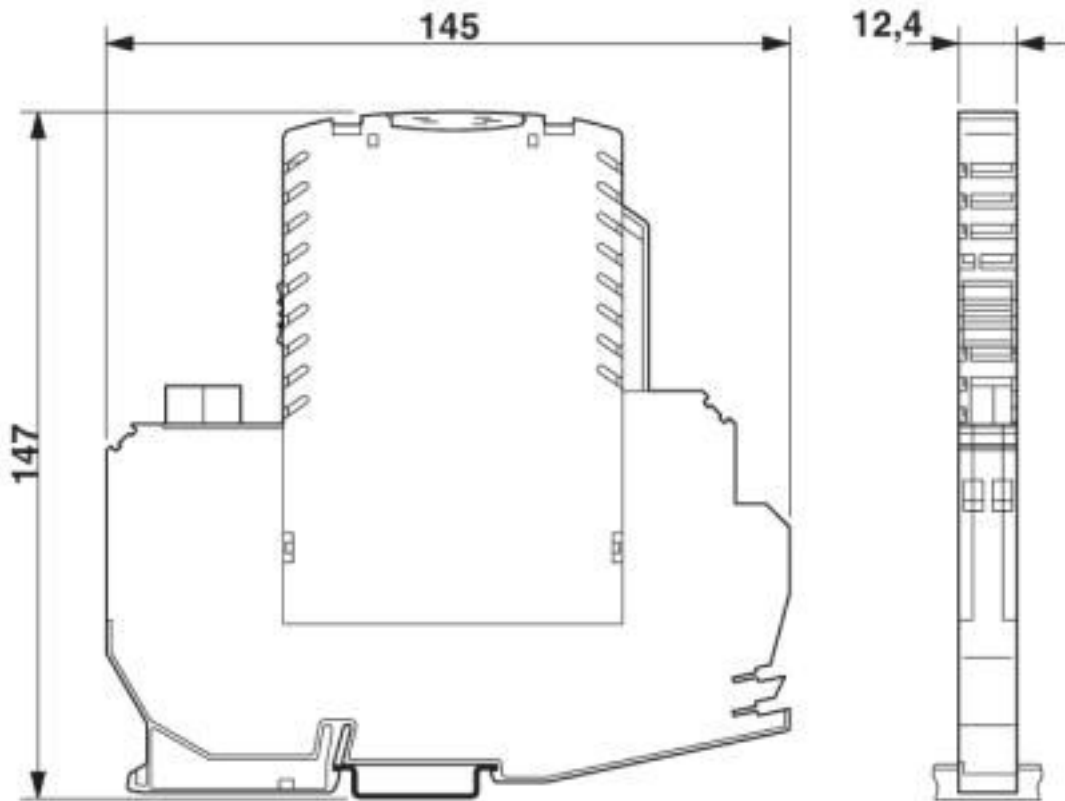
## Drawings

Block diagram



# Repeater power supply - PI-EX-RPSS - 2865243

Dimensional drawing



## Classifications

### eCl@ss

eCl@ss 10.0.1	27210120
eCl@ss 11.0	27210120
eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

### ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002653
ETIM 6.0	EC002653
ETIM 7.0	EC002653

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## Classifications

### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

## Approvals

### Approvals

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Approvals

Functional Safety

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Ex Approvals

ATEX / EAC Ex

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### Approval details

Functional Safety	09-06-52 R010 V1R0
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## Accessories

### Additional products

Basic terminal block - PI-EX-TB - 2835901



Ex base terminal block for intrinsically safe signals with knife disconnection and test connections

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Basic terminal block - PI-EX-ES-1/3 - 2835325



Ex basic terminal block, with three terminal points to the field level (Ex area)

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### Accessories

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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>