

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

Note

| | |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

Dimensions

| | |
|--------|---------|
| Width | 12.4 mm |
| Height | 145 mm |
| Depth | 147 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) |

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Output data

| | |
|--|--|
| Signal output | Current output |
| Current output signal | 4 mA ... 20 mA (active) |
| | 4 mA ... 20 mA (14 ... 26 V ext. source voltage) |
| Load/output load current output | < 600 Ω (at 20 mA) |
| | < 525 Ω (at 22.5 mA) |
| Output ripple | < 20 mV _{rms} |
| 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) |
| Flammability rating according to UL 94 | V0 |
| Degree of pollution | 2 |
| Overvoltage category | II |
| Housing material | PBT and polyamide PA non-reinforced |
| Color | green |
| Designation | Input/output/power supply |
| Electrical isolation | 300 V _{rms} (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1)) |
| | 2.5 kV (50 Hz, 1 min., test voltage) |
| Designation | Input/output |
| Electrical isolation | 375 V (Peak value in accordance with EN 60079-11) |
| Designation | Input/power supply |
| Electrical isolation | 375 V (Peak value in accordance with EN 60079-11) |
| 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 |
| Functional Safety (SIL) | SIL 2 according to IEC 61508 |
| SIL | 2 |

Data communication (bypass)

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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_{SU} | 1.51×10^{-7} (151 FIT) |
| λ_{SD} | 0 |
| λ_{DU} | 4.1×10^{-8} (41 FIT) |
| λ_{DD} | 2.63×10^{-7} (263 FIT) |
| Probability of a hazardous failure on demand (PFD _{AVG}) | 1.96×10^{-4} (1 year) |
| | 3.74×10^{-4} (2 years) |
| | 9.07×10^{-4} (5 years) |
| Diagnostic coverage (DC) | DC _S = 0%, DC _D = 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_{SU} | 1.52×10^{-7} (152 FIT) |
| λ_{SD} | 0 |
| λ_{DU} | 3.8×10^{-8} (38 FIT) |
| λ_{DD} | 2.44×10^{-7} (244 FIT) |
| Probability of a hazardous failure on demand (PFD _{AVG}) | 1.81×10^{-4} (1 year) |
| | 3.46×10^{-4} (2 years) |
| | 8.41×10^{-4} (5 years) |
| Diagnostic coverage (DC) | DC _S = 0%, DC _D = 86% |

Safety data

| | |
|--|--------|
| Max. output voltage U _o | 25.2 V |
| Max. output current I _o | 93 mA |
| Max. output power P _o | 590 mW |
| Group | IIB |
| Max. external inductivity L _o | 4 mH |
| Max. external capacity C _o | 820 nF |
| Group | IIC |
| Max. external inductivity L _o | 2 mH |

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Technical data

Safety data

| | |
|--------------------------------------|----------|
| Max. external capacity C_o | 107 nF |
| Safety-related maximum voltage U_m | 253 V AC |

Standards and Regulations

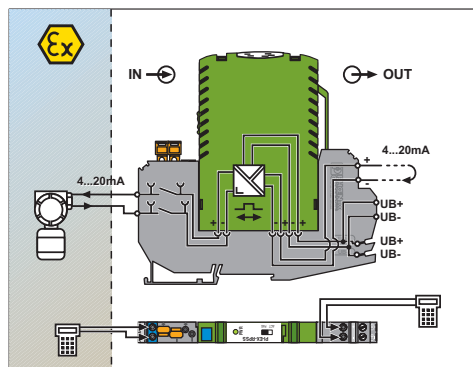
| | |
|--|-------------------------------------|
| Flammability rating according to UL 94 | V0 |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | # II (1) G [Ex ia] IIC |
| | # II (1) D [Ex iaD] |
| | # II 3 (1) G Ex nA [ia] IIC T4 |
| Group | IIB |
| | IIC |

Environmental Product Compliance

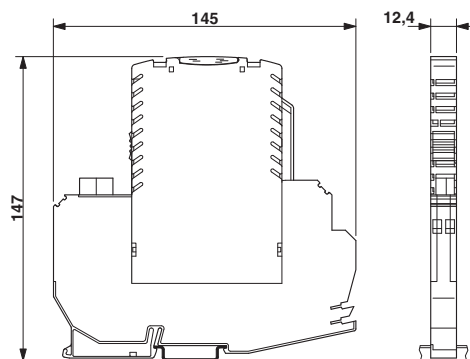
| | |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

Block diagram



Dimensional drawing



Approvals

Approvals

Approvals

Functional Safety

Ex Approvals

ATEX / EAC Ex

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Approvals

Approval details

| | |
|-------------------|--------------------|
| Functional Safety | 09-06-52 R010 V1R0 |
|-------------------|--------------------|

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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