

IOA RPSS-I-I/HART/EX - Power/input isolating amplifier



2908452

<https://www.phoenixcontact.com/us/products/2908452>

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Ex ic repeater power supply and input signal conditioner, HART for VIP I/O-Marshalling base elements: Transmits 0/4 ... 20 mA signals from the potentially explosive area (zone 2, CID2) to a load (active or passive) in the safe area. 3-way electrical isolation

Product description

Ex ic repeater power supply and input signal conditioner, HART: Transmits supplied or active 0/4 ... 20 mA signals from the Ex area to a load (active or passive) in the safe area. HART signals are transmitted bidirectionally. The output can be operated either actively or passively via DIP switches. The module is installed on a corresponding VIP I/O-Marshalling base element by means of plug-in contact. Installation in zone 2, "ec" type of protection is permitted.

Your advantages

- Two-stage progressive release allowing for voltage checks with field-powered devices
- Channel for marking accessories
- Integrated keying reduces possible user error during replacement
- Signal disconnect with test points
- Bidirectional HART signal transmission
- 3-way electrical isolation

Commercial data

Item number	2908452
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C480
Product key	CK8313
GTIN	4055626446158
Weight per piece (including packing)	95.7 g
Weight per piece (excluding packing)	42.9 g
Customs tariff number	85437090
Country of origin	CN

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2908452

<https://www.phoenixcontact.com/us/products/2908452>

Technical data

Product properties

Product type	Repeater power supplies
Product family	VIP I/O-Marshalling
No. of channels	1

Insulation characteristics

Overvoltage category	II
Degree of pollution	2

Electrical properties

No. of channels	1
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Limit frequency (3 dB)	1.75 kHz (typ.)
Step response (10-90%)	< 200 μ s (typ.)
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

Electrical isolation	250 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)
	60 V ()

Supply

Nominal supply voltage	24 V DC
Supply voltage range	18 V DC ... 30 V DC
Power consumption	≤ 1600 mW (at I _{OUT} = 20 mA, 24 V DC, 600 Ω load)

Input data

Signal

Input signal	Current
Current input signal	4 mA ... 20 mA (repeater power supply and isolator operation)
	0 mA ... 20 mA (isolator operation)
Transmitter supply voltage	> 17 V (20 mA)
Step response (10-90%)	typ. 300 μ s (4 mA ... 20 mA)
	typ. 1000 μ s (0 mA ... 20 mA)

Output data

Signal

Output description	Current output (active and passive)
Current output signal	0 mA ... 20 mA (isolator amplifier)

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2908452

<https://www.phoenixcontact.com/us/products/2908452>

	4 mA ... 20 mA (repeater power supply and isolator operation)
Max. current output signal	22.5 mA
Transmission Behavior	1:1 to input signal
Load/output load current output	≤ 600 Ω (20 mA)
	525 Ω (22.5 mA)
Residual ripple	< 20 mV _{rms} (600 Ω)
Output ripple	< 20 mV _{rms} (at 600 Ω)
Output behavior in the event of an error	0 mA (Cable break in the input)
	≥ 22.5 mA (Cable short-circuit in the input)
Underload/overload signal range	0 mA ... 22.5 mA (According to NE43)

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)
	0.2 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)

Ex data

Safety data

Input voltage U _i	0 V (nA, nB)
	30 V (nC, nD)
	30 V (Controller interface)
Input current I _i	100 mA (Controller interface)
Inductance L _i	0 mH
Capacitance C _i	0 nF
Max. output voltage U _o	28 V (nA, nB)
	0 V (nC, nD)
Max. output current I _o	104 mA
Max. output power P _o	726 mW
Safety-related maximum voltage U _m	60 V AC/DC (Peak)
IIC: Max. external inductivity L _o / Max. external capacitance C _o	/ 0.27 μF
IIB/IIIC/IIIB/IIIA: Max. external inductivity L _o / Max. external capacitance C _o	/ 1.65 μF
IIA: Max. external inductivity L _o / Max. external capacitance C _o	/ 6.6 μF
IIC: Max. external inductivity L _o / Max. external capacitance C _o	7.3 mH
IIB/IIIC/IIIB/IIIA: Max. external inductivity L _o / Max. external capacitance C _o	14.7 mH
IIA: Max. external inductivity L _o / Max. external capacitance C _o	29.5 mH

Interfaces

Data communication (bypass)

IOA RPSS-I-I/HART/EX - Power/input isolating amplifier



2908452

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HART function	Yes
Protocols supported	HART
Limit frequency (3 dB)	> 1.75 kHz (typical)

Signaling

Status display	Green LED (supply voltage)
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Dimensions

Width	9.8 mm
Height	75.2 mm
Depth	113.2 mm

Material specifications

Flammability rating according to UL 94	V0
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	2000 m (max. altitude above sea level)
Permissible humidity (operation)	5 % ... 95 %

Approvals

ATEX

Identification	⊕ II 3G Ex ec IIC T4 Gc
Certificate	Sira 17ATEX4208X

IECEX

Identification	Ex ec IIC T4 Gc
	Ex ec [ic] IIC T4 Gc
	[Ex ic IIIC Dc]
Certificate	IECEX SIR 17.0047X

CSA, USA/Canada

Identification	Class I, Div. 2 Groups A, B, C, D T4
	Class I, Zone 2 AEx ec IIC T4 Gc
	AEx ec [ic] IIC T4 Gc
	Connection to Zone 22, [Ex ic IIIC Dc]
	Ex ec IIC T4 Gc
	Ex ec [ic] IIC T4 Gc
	[Ex ic IIIC Dc]

UKEX

Identification	⊕ II 3G Ex ec IIC T4 Gc
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2908452

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Corrosive gas test

Identification	ISA S71.04.2013 G3 Harsh Group A
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EMC data

Electromagnetic compatibility	Conformance with EMC directive
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Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	1 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	1 %

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	1 %

Standards and regulations

Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
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Mounting

Mounting position	any
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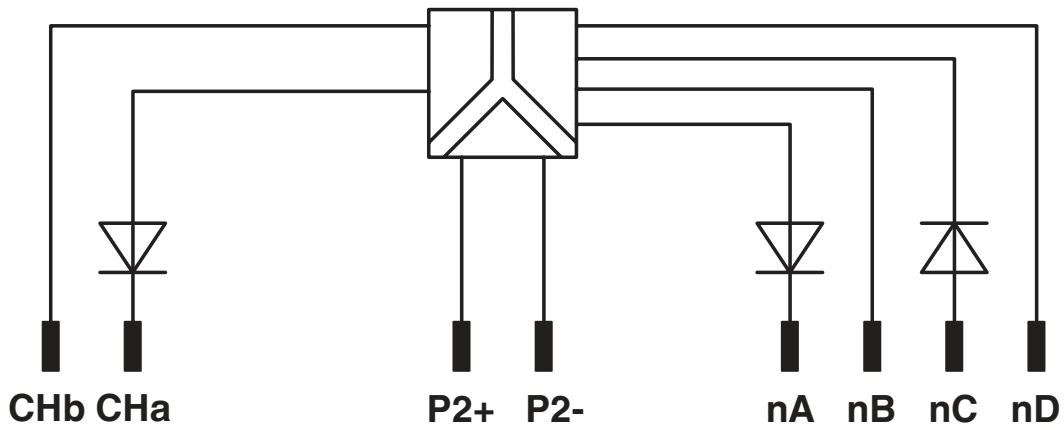
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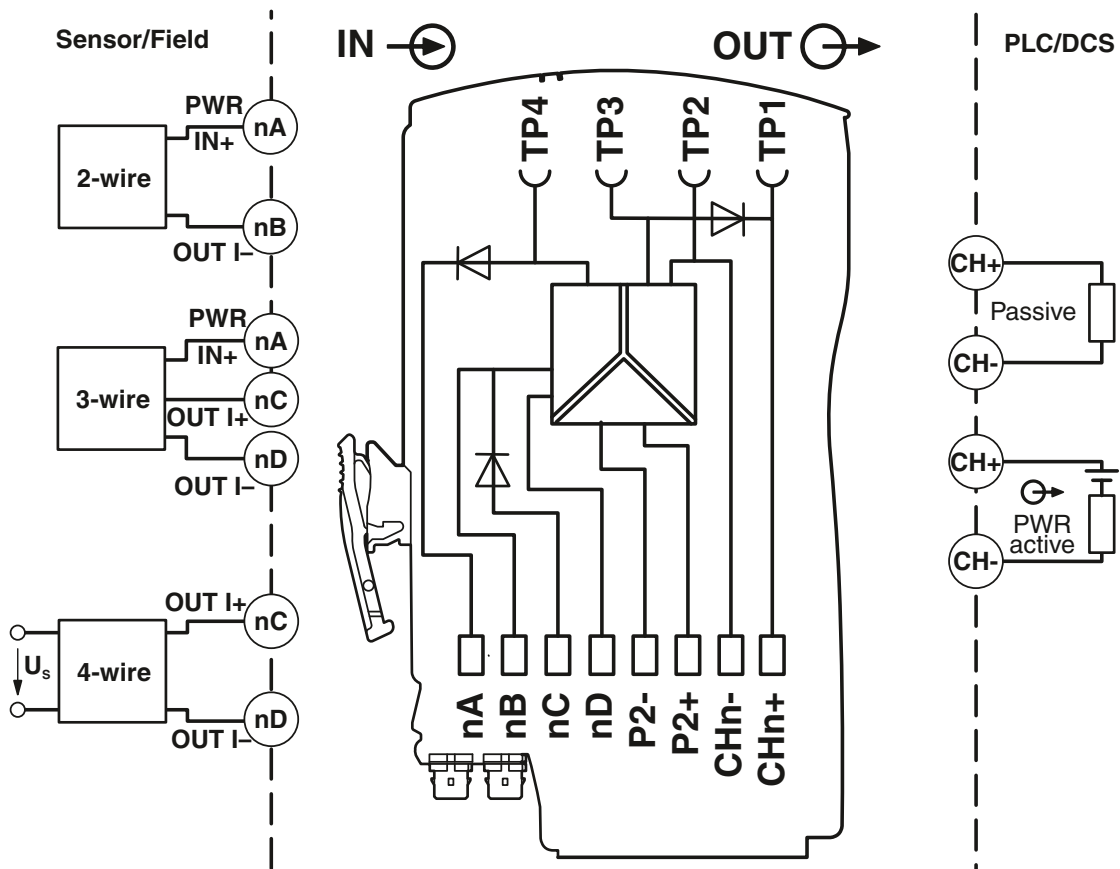
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Drawings

Circuit diagram



Block diagram



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Approvals

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IECEx

Approval ID: IECEx SIR 17.0047X



ATEX

Approval ID: SIRA 17 ATEX 4208X



CSA

Approval ID: 70099416



FM approved

Approval ID: 3060331



CSAus

Approval ID: 70099416

cCSAus

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Classifications

ECLASS

ECLASS-11.0	27141152
ECLASS-12.0	27141152
ECLASS-13.0	27141152

ETIM

ETIM 8.0	EC002780
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UNSPSC

UNSPSC 21.0	39121400
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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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Mandatory accessories

VIP/S/MC/BASE 1-8/L/EX - Base module

2906596

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 1–8.

VIP/S/MC/BASE 9-16/L/EX - Base module

2906630

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 9–16.

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VIP/S/MC/BASE 17-24/L/EX - Base module

2907024

<https://www.phoenixcontact.com/us/products/2907024>



8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 17–24.

VIP/S/MC/BASE 25-32/L/EX - Base module

2907025

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 25–32.

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VIP/S/MC/BASE 1-8/L/C/EX - Base module

2907186

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 1–8 and painting.

VIP/S/MC/BASE 9-16/L/C/EX - Base module

2907187

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 9–16 and painting.

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2908452

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VIP/S/MC/BASE 17-24/L/C/EX - Base module

2907209

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 17–24 and painting.

VIP/S/MC/BASE 25-32/L/C/EX - Base module

2907210

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8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. With the COMBICON connector, compatible with the Honeywell C300 and RUSIO series. Marking for channels 25–32 and painting.

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VIP/S/D25M/BASE 1-8/L/C/EX - Base module

2906595

<https://www.phoenixcontact.com/us/products/2906595>



8-channel VIP I/O marshalling base element for universal use. All connections as screw connection technology. This module with the D-SUB 25 connector is pin compatible with the Foxboro I/A series DCS.

VIP/MSTB/D50M/BASE/16CH/CX/EX - Base module

2908788

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16-channel VIP I/O marshalling base element for universal use. Plug-in field and supply terminals available as accessories. Either with screw or Push-in connection technology. Compatible with the Tricon CX DCS series (D-SUB 50).

Accessories

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UC-TM 6 - Marker for terminal blocks

0818085

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Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

UC-TM 6 BU - Marker for terminal blocks

0818344

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Marker for terminal blocks, Sheet, blue, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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ZB 5,08:UNBEDRUCKT - Zack marker strip

0809793

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Zack marker strip, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 5.08 mm, lettering field size: 4.98 x 10.5 mm, Number of individual labels: 10

B-STIFT - Marker pen

1051993

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Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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