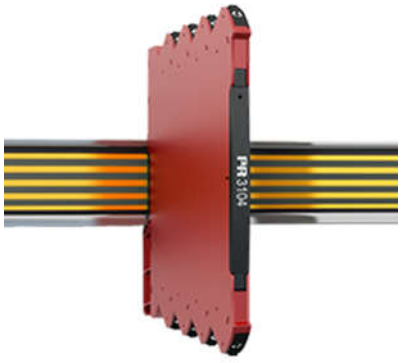
PERFORMANCE MADE SMARTER



Isolated converter

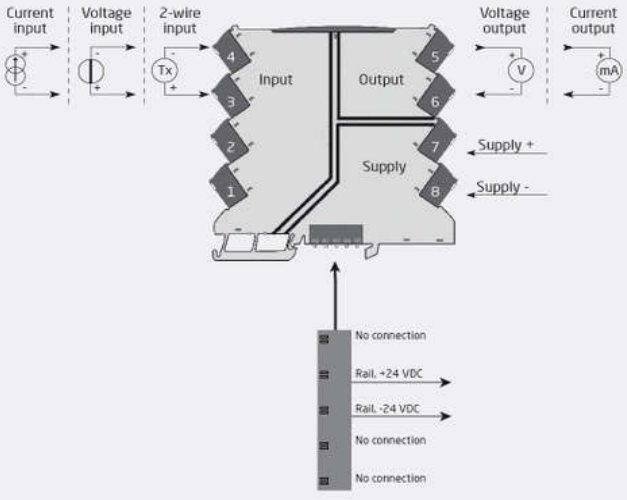
3104

– Isolation and conversion of standard DC signals
– Slimline housing of 6.1 mm
– Power supply and signal isolator for 2-wire transmitter
– Loop supply >17 V
– DIP-switch configured

Application
- Isolation and conversion of standard DC signals.
- Galvanic separation of analog current and voltage signals.
- Elimination of ground loops and measurement of floating signals.
- A competitive choice in terms of both price and technology for galvanic isolation of current and voltage signals to SCADA systems or PLC equipment.
- Installation in ATEX Ex zone 2 / IECEx zone 2 / FM division 2.
- Suitable for environments with high vibration stress, e.g. ships.

Technical characteristics
- Easy configuration via DIP-switches.
- The input is protected against overvoltage and polarity error.
- Factory-calibrated measurement ranges.
- Inputs and outputs are floating and galvanically separated.

Applications



Safe Area or Zone 2 & Cl. 1, Div. 2, gr. A-D

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Order

Type	Version	
3104	With power rail connector / terminals	:-
	Supplied via terminals	:-N

Example: 3104-N

Environmental Conditions

Operating temperature..... -25°C to +70°C
Storage temperature..... -40°C to +85°C
Calibration temperature..... 20...28°C
Relative humidity..... < 95% RH (non-cond.)
Protection degree..... IP20
Installation in..... Pollution degree 2 & meas. / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD)..... 113 x 6.1 x 115 mm
Weight approx..... 70 g
DIN rail type..... DIN EN 60715/35 mm
Wire size..... 0.13...2.5 mm^2 / AWG 26...12 stranded wire
Screw terminal torque..... 0.5 Nm
Vibration..... IEC 60068-2-6
2...25 Hz..... ±1.6 mm
25...100 Hz..... ±4 g

Common specifications

Supply

Supply voltage..... 16.8...31.2 VDC
Max. required power..... ≤ 1.2 W
Max. power dissipation..... 0.55 W

Isolation voltage

Isolation voltage, test / working..... 2.5 kVAC / 300 VAC (reinforced)
Zone 2 / Div. 2..... 250 VAC

Response time

Response time (0...90%, 100...10%)..... < 7 ms

Programming..... DIP-switches
Signal / noise ratio..... > 60 dB
Cut-off frequency (3 dB)..... > 100 Hz
Signal dynamics, input..... Analog signal chain
Signal dynamics, output..... Analog signal chain
Accuracy..... Better than 0.05% of selected range
Temperature coefficient..... < ±0.01% of span / °C
EMC immunity influence..... < ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst..... < ±1% of span

Input specifications

Current input

Measurement range..... 0...23 mA
Programmable measurement ranges..... 0...20 and 4...20 mA
Input voltage drop..... < 1.5 VDC

Voltage input

Measurement range..... 0...10.25 V
Measurement range..... 0...11.5 V / 0...5.75 V
Programmable measurement ranges..... 0/1...5 and 0/2...10 V
Input resistance..... ≥ 500 kΩ

2-wire transmitter supply..... > 17 V / 20 mA

Output specifications

Current output

Signal range..... 0...23 mA
Programmable signal ranges..... 0 / 4...20 mA
Load (@ current output)..... ≤ 600 Ω
Load stability..... ≤ 0.002% of span / 100 Ω
Current limit..... ≤ 28 mA

Voltage output

Signal range..... 0...10 VDC
Programmable signal ranges..... 0/1...5 and 0/2...10 V
Load (@ voltage output)..... ≥ 10 kΩ

of span..... = of the DIP-switch selected output range

I.S. / Ex marking

ATEX..... II 3 G Ex ec IIC T4 Gc
IECEx..... Ex ec IIC T4 Gc
FM, US..... Cl. I, Div. 2, Gp. A, B, C, D T4 or Cl. I, Zone 2, AEx nA IIC T4
FM, CA..... Cl. I, Div. 2, Gp. A, B, C, D T4 or Cl. I, Zone 2, Ex nA IIC T4
EAC Ex..... 2Ex nA IIC T4 Gc X

Observed authority requirements

EMC..... 2014/30/EU & UK SI 2016/1091
LVD..... 2014/35/EU & UK SI 2016/1101
ATEX..... 2014/34/EU & UK SI 2016/1107
RoHS..... 2011/65/EU & UK SI 2012/3032
EAC..... TR-CU 020/2011
EAC Ex..... TR-CU 012/2011

Approvals

ATEX..... KEMA 10ATEX0147 X
IECEx..... KEM 10.0068X
UKEX..... DEKRA 21UKEX0055X
c FM us..... FM17US0004X / FM17CA0003X
c UL us, UL 61010-1..... E314307
CCC..... 2020322310003554
EAC Ex..... RU C-DK.HA65.B.00355/19
DNV Marine..... TAA00001RW