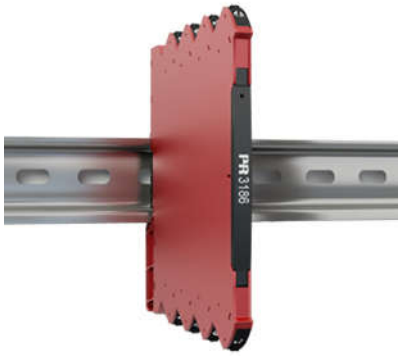
PERFORMANCE MADE SMARTER



2-wire transmitter isolator / current isolator

3186

– 1 or 2 channel 2-wire transmitter isolator / current isolator
– 1:1 conversion in the range 3.5...23 mA
– Low channel voltage drop and fast response time < 5 ms
– Excellent accuracy, better than 0.05%
– Slimline 6 mm housing

Application

- 3186A is a 1:1 output loop-powered 2-wire transmitter isolator that excites and measures passive input signals.
- 3186B is a 1:1 output loop-powered 2-wire current isolator that measures active input signals.
- A very competitive choice in terms of both price and technology for galvanic isolation.
- Provides surge suppression and protects control systems from transients and noise.
- 3186 eliminates ground loops and can be used for measuring floating signals.
- The device can be mounted in Safe area or in Zone 2 and Cl. 1 Div 2. area.

Technical characteristics

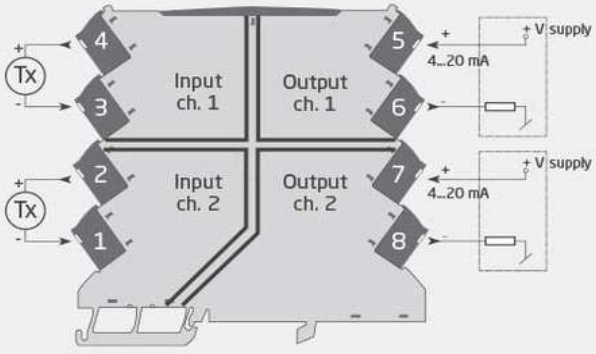
- 3186 is powered by the host loop voltage.
- Wide supply range from 6...35 V.
- Low input to output voltage drop typ. 2.5 V (3186A).
- Low input drop ≤ 3 V (3186B), even when no loop power is applied to the output terminals.
- Excellent conversion accuracy, better than 0.05% in the range 3.8…20.5 mA.
- Signal range is 3.5...23 mA which means that 3186 is NAMUR NE43 compliant.
- Inputs and outputs are floating and galvanically separated.
- High galvanic isolation of 2.5 kVAC.
- Fast response time < 5 ms.
- Excellent signal/noise ratio > 60 dB.

Mounting / installation

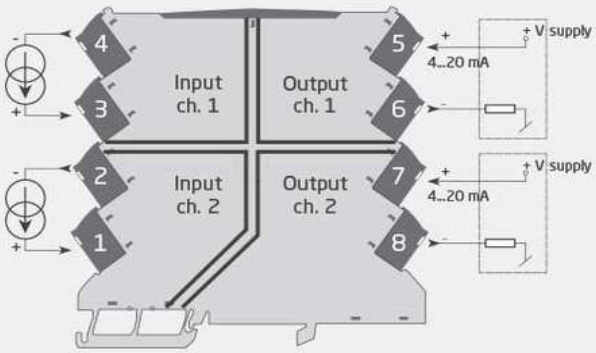
- DIN rail mounting with up to 330 channels per meter.
- Extended operating temperature range from -25...+70°C.

Applications

3186A



3186B



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Order

Type	Version		Unit channels	
3186	2-wire transmitter isolator	: A	Single	: 1
	2-wire current isolator	: B	Double	: 2

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..... 6...35 VDC
Power dissipation, per channel..... 50 mW (3186A)
Power dissipation, per channel..... Vterminal x I (3186B)

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%)..... < 5 ms

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

Input specifications

Current input

Measurement range..... 3.5...23 mA

Input to output voltage drop, typ..... 2.5 V (3186A)
Input voltage drop typ.: Supplied and non-supplied unit..... ≤ 3 V (3186B)
2-wire transmitter supply..... 3.5...32.5 V
Signal conversion..... 1:1

Output specifications

Current output

Signal range..... 3.5...23 mA

Signal range, input to output..... 3.8...20.5 mA
Output loop current limitation, typ..... 24 mA
Current output overload, max..... 50 mA

I.S. / Ex marking

ATEX..... II 3 G Ex nA IIC T4 Gc
IECEx..... Ex nA 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

Observed authority requirements

EMC..... 2014/30/EU
LVD..... 2014/35/EU
RoHS..... 2011/65/EU
EAC..... TR-CU 020/2011

Approvals

ATEX 2014/34/EU..... KEMA 10ATEX0147 X
IECEx..... KEM 10.0068X
FM..... FM17US0004X / FM17CA0003X
EAC Ex TR-CU 012/2011..... RU C-DK.GB08.V.00410 (Pending for 3186B)
DNV-GL Marine..... Stand. f. Certific. No. 2.4
DNV-GL Marine..... Pending for 3186B
UL..... UL 61010-1