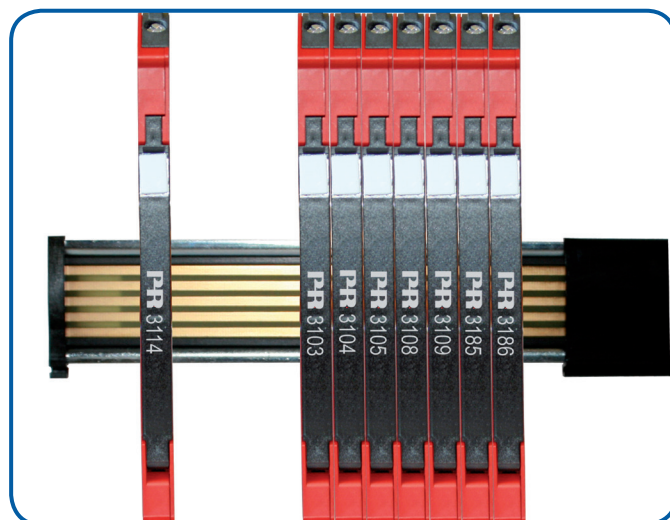


# 2-WIRE TRANSMITTER ISOLATOR



- 1 or 2 channel 2-wire transmitter isolator
- Signal 1:1 functional range 3.5...23mA
- Low channel voltage drop
- Excellent accuracy
- Slimline 6 mm housing



## Applications

- 1:1 output loop powered isolator of 2-wire transmitter 4...20 mA signals.
- 3186 is an easy mounting DIN rail unit.
- A very competitive choice in terms of both price and technology for galvanic isolation of 2-wire transmitter signals.
- 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.

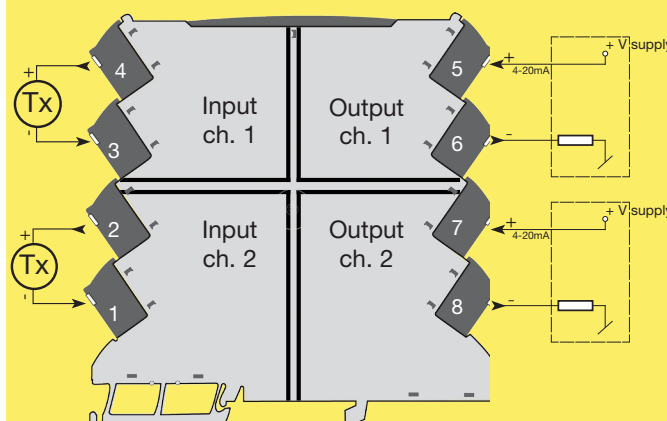
## Technical characteristics

- 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.
- Excellent conversion accuracy, better than 0.05% in the range 3.8...20.5 mA.
- Functional range is 3.5...23mA 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 msec.
- Excellent signal/noise ratio > 60 dB.

## Mounting / installation:

- DIN rail mounting with upto 330 channels per metre.
- Temperature operation range is from -25...+70°C.

## APPLICATIONS



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

# PR

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QUALITY SYSTEM AND ENVIRONMENTAL MANAGEMENT SYSTEM  
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Tlf. 8637 2677 . Fax. 8637 3085  
www.prelectronics.dk . sales@prelectronics.dk

## Order codes:

**3186A1 = 2-wire transmitter Isolator, 1 channel**  
**3186A2 = 2-wire transmitter Isolator, 2 channels**

## Environmental conditions:

Specifications range..... -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 & overvoltage category II.

## Mechanical specifications:

Dimensions (HxWxD)..... 113 x 6.1 x 115 mm  
 Weight approx. .... 70 g  
 DIN rail type..... DIN EN 60715 - 35mm  
 Wire size..... 0.13...2.5 mm<sup>2</sup> / AWG  
 26...12 stranded wire  
 Screw terminal torque ..... 0.5 Nm

## Common electrical specifications:

Supply voltage..... 6...35 VDC  
 Voltage drop, input to output typ. .... 2.5 V  
 Internal consumption..... 50 mW per channel  
 Isolation voltage, test ..... 2.5 kVAC  
 Working isolation voltage ..... 300 VAC  
 Signal / noise ratio..... > 60 dB  
 Response time (0...90%, 100...10%).. < 5 ms  
 Cut-off frequency (3 dB)..... 100 Hz

Accuracy values		
Input type	Absolute accuracy	Temperature coefficient $\Delta^\circ\text{C} = [\text{Tamb} - 25^\circ\text{C}]$
mA	$\leq \pm 8 \mu\text{A}$	$\leq \pm 0.02 \mu\text{A} \times (\Delta^\circ\text{C} \times \text{Vsupply}) @ \text{Tamb} > 25^\circ\text{C}$ $\leq \pm 0.07 \mu\text{A} \times (\Delta^\circ\text{C} \times \text{Vsupply}) @ \text{Tamb} < 25^\circ\text{C}$

The effect of supply changes is included in the accuracy values

Accuracy calculation example - Tamb = 50°C and Vsupply = 24 VDC:  
 Total accuracy = Absolute accuracy + Temperature coefficient  
 $= \pm (8 \mu\text{A} + (0.02 \mu\text{A} \times (50-25^\circ\text{C} \times 24 \text{ V}))) = \leq \pm 20 \mu\text{A}$

EMC immunity influence ..... <  $\pm 0.5\%$  of span  
 Extended EMC immunity:  
 NAMUR NE 21, A criterion, burst..... <  $\pm 1\%$  of span

## Accessories:

**9404 = Module Stop**

## Input and Output specifications:

Available input transmitter (Tx) supply... 3.5...32.5 V  
 Signal range, input to output..... 3.8...20.5 mA  
 Signal conversion ..... 1:1  
 Functional range..... 3.5...23 mA  
 Output loop current limitation, typ .... 24 mA  
 Current output overload, max ..... 50 mA

Of span = 4...20 mA

## Approvals:

EMC 2004/108/EC ..... EN 61326-1  
 LVD 2006/95/EC ..... EN 61010-1  
 UL, Standard for Safety..... UL 61010-1  
 Safe Isolation..... EN 61140  
 GOST R

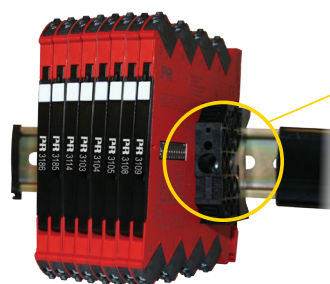
## Marine:

Det Norske Veritas, Ships & Offshore Stand. f. Certific. No. 2.4  
 Germanischer Lloyd ..... VI-7-2

## Ex:

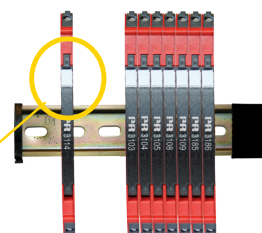
ATEX 94/9/EC ..... KEMA 10ATEX0147 X  
 IECEx ..... KEM 10.0068 X  
 c FM us..... 3041043 -C  
 GOST Ex

## Installation on a 35 mm DIN rail



The system 3100 modules must be supported by a module stop - PR part number 9404 - for marine applications.

## Marking



The front cover of the system 3100 units has been designed with an area for affixation of a click-on marker. The area assigned to the marker measures 5 x 7.5 mm. Weidmüller's MultiCard System markers, type MF 5/7.5, are suitable.