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.
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 mm² / 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
EAC Ex: 2Ex nA IIC T4 Gc

Observed authority requirements

EMC: 2014/30/EU
LVD: 2014/35/EU
RoHS: 2011/65/EU
EAC: TR-CU 020/2011
EAC Ex: TR-CU 012/2011

Approvals

ATEX: KEMA 10ATEX0147 X
IECEx: KEM 10.0068X
FM, US: FM17US0004X / FM17CA0003X
UL: UL 61010-1
DNV-GL Marine: TAA00001RW
EAC Ex: RU C-DK.GB08.V.00410