Loop powered isolator

3185

- 1 or 2 channel input loop powered isolator
- Signal 1:1 functional range 0...23 mA
- Low input voltage drop and fast response time
- Excellent accuracy and high load stability
- Slimline 6 mm housing

Applications

Application
- 1:1 input loop powered isolator of current signals in the range 0(4)...20 mA.
- 3185 is an easy mounting DIN rail unit.
- A very competitive choice in terms of both price and technology for galvanic isolation of current signals.
- Provides surge suppression and protects control systems from transients and noise.
- 3185 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
- 3185 is powered by the analog input current signal loop.
- Low input voltage drop, typ 1.35 V + Vout.
- Excellent conversion accuracy, better than 0.1% in the range 0...20.5 mA.
- Functional range is 0...23 mA which means that 3185 is NAMUR NE43 compliant.
- Inputs and outputs are floating and galvanically separated.
- The output is voltage limited to 17.5 VDC.
- High galvanic isolation of 2.5 kVAC.
- Fast response time < 5 ms.
- Excellent signal/noise ratio > 60 dB.

Mounting / installation / programming
- DIN rail mounting with up to 330 channels per meter.
- Temperature operation range is 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 & measurement / 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 x 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
Power dissipation, per channel: 30 mW
Isolation voltage
Isolation voltage, test / working: 2.5 kVAC / 300 VAC (reinforced)
Zone 2 / Div. 2: 250 VAC
Response time
Response time (0...30%, 100...10%) ≤ 5 ms
Signal / noise ratio: > 60 dB
Signal dynamics, input: Analog signal chain
Signal dynamics, output: Analog signal chain
Accuracy: Better than 0.1%
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: 0...23 mA
Input voltage drop: (Unit voltage drop) + Vout.
Signal conversion: 1:1
Start-up current, typ.: 10 µA
Current input overload, max.: 50 mA
Input to output voltage drop, typ.: 1.35 V + (0.015 x Vout.)

Output specifications
Current output
Signal range: 0...23 mA
Load (@ current output): ≤ 600 Ω
Load stability: < 0.01% of span / 100 Ω
Voltage limit: 17.5 V of span: ≤ 0...20 mA

I.S. / Ex marking
ATEX: II 3 G Ex nA IIC T4 Gc
IECEx: Ex nA IIC T4 Gc

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 10.0088X
FM: FM17US0004X / FM17CA0003X
DNV-GL Marine: Stand. f. Certific. No. 2.4
UL: UL 61010-1
CCOE: P337347/1
EAC Ex TR-CU 012/2011: RU C-DK.GB08.V.00410