

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 6.1 mm housing



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.

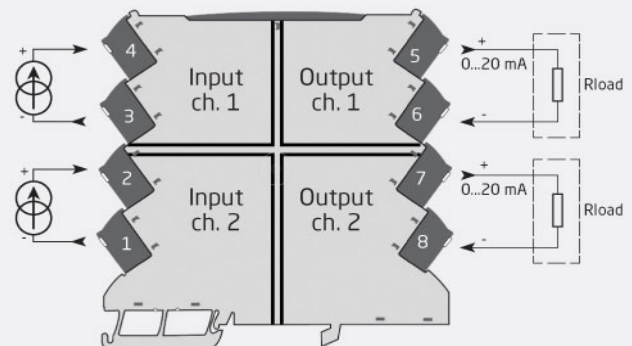
Technical characteristics

- 3185 is powered by the analog input current signal loop.
- Low input voltage drop, typ 1.35 V + V_{out}.
- 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.

Applications



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

Order

Type	Unit channels
3185A	Single : 1
	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

Power dissipation, per channel.....	30 mW
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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 0.1%
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) + V _{out} .
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 V _{out} .)

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 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
DNV Marine.....	TAA00001RW
EAC Ex.....	RU C-DK.HA65.B.00355/19