

Bipolar isolated converter

3117

- Conversion of voltage and current bipolar process signals to unipolar signals
- Multiple signal ranges are selectable via DIP-switches
- Fast response time < 7 ms and high output load stability
- Excellent accuracy, better than 0.05 % of selected range
- Slimline 6 mm housing



Application

- The 3117 is an isolating converter which can be used for signal conversion of standard bipolar analog process signals into a unipolar analog signal.
- The unit offers 3-port isolation and provides surge suppression and protects control systems from transients and noise.
- The 3117 also eliminates ground loops and can be used for measuring floating signals.
- Mounting of the 3117 can be in Safe area or in Zone 2 and Cl. 1 Div 2 area and is approved for marine applications.

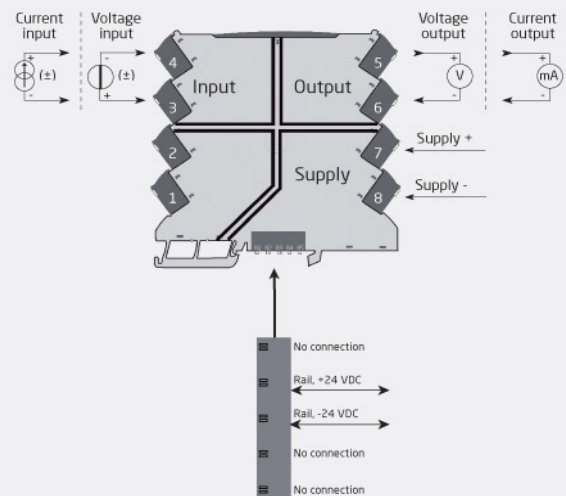
Technical characteristics

- Flexible 24 VDC ($\pm 30\%$) supply via power rail or connectors.
- Excellent conversion accuracy, better than 0.05% of selected range.
- Inputs and outputs are floating and galvanically separated.
- A green front LED indicates operation status for the device.
- All terminals are protected against overvoltage and polarity error.
- Meeting the NAMUR NE21 recommendations, the 3117 ensures top measurement performance in harsh EMC environments.
- High galvanic isolation of 2.5 kVAC.
- Fast input to output response time < 7 ms / > 100 Hz – 10 Hz bandwidth damping possible via DIP-switch.
- Excellent signal/noise ratio > 60 dB.

Mounting / installation / programming

- Fast and easy configuration of factory calibrated measurement ranges via DIP-switches.
- A very low power consumption allows DIN rail mounting without the need for any air gap.
- Wide temperature operation range: -25...+70°C.

Connections



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

Order:

Type
3117

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 & 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 mm ² / AWG 26...12 stranded wire
Screw terminal torque.....	0.5 Nm

Common specifications

Supply

Supply voltage.....	16.8...31.2 VDC
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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%).....	< 7 ms or < 44 ms
Max. required power.....	0.8 W
Internal consumption.....	0.4 W (typ.) / 0.65 W (max.)
MTBF, acc. to IEC 61709 (SN29500).....	> 241 years
Signal / noise ratio.....	> 60 dB
Programming.....	DIP-switches
Cut-off frequency (3 dB).....	> 100 Hz or 10 Hz (selectable via DIP-switch)
Accuracy.....	< ±0.05% of span
Temperature coefficient.....	< ±0.01% of span / °C
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Current input

Measurement range.....	-23...+23 mA
Programmable measurement ranges.....	± 10 and ± 20 mA
Input voltage drop.....	< 1 VDC @ 23 mA

Voltage input

Programmable ranges.....	±5 and ±10 V
Functional range.....	-11.5...+11.5 V
Input resistance.....	≥ 1 MΩ

Output specifications

Current output

Signal range.....	0...23 mA
Programmable signal ranges.....	0 / 4...20 mA
Load (@ current output).....	≤ 600 Ω
Load stability.....	≤ 0.002% of span / 100 Ω
Current limit.....	≤ 28 mA

Voltage output

Programmable signal ranges.....	0/1...5 and 0/2...10 V
Functional range.....	0...11.5 V
Load (@ voltage output).....	≥ 10 kΩ

*of span..... = of the presently selected range

Observed authority requirements

EMC.....	2014/30/EU
LVD.....	2014/35/EU
RoHS.....	2011/65/EU

Approvals

ATEX 2014/34/EU.....	KEMA 10ATEX0147 X, II 3 G Ex nA IIC T4 Gc
IECEX.....	KEM 10.0068X
FM.....	3041043-C
EAC.....	TR-CU 020/2011
DNV Marine.....	Stand. f. Certific. No. 2.4
GL.....	V1-7-2
UL.....	UL 61010-1