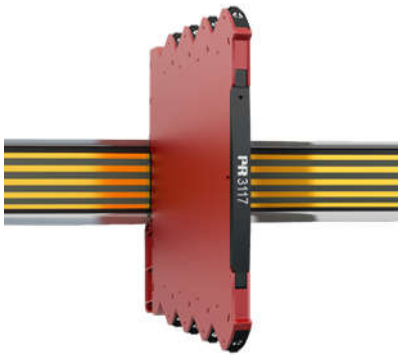
PERFORMANCE MADE SMARTER



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 span
- 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.

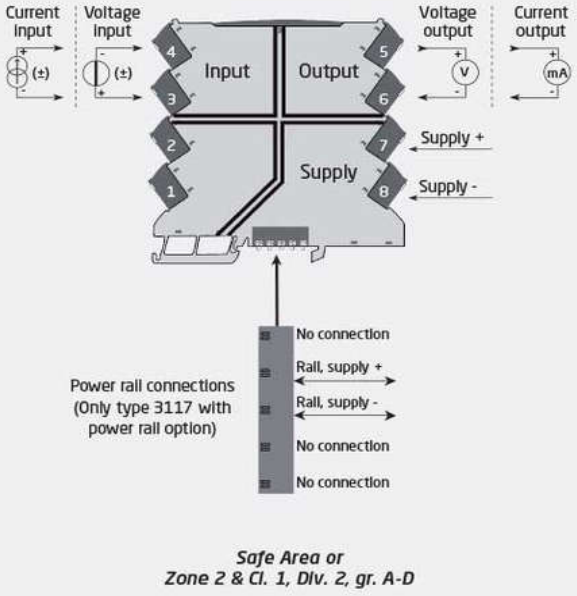
Technical characteristics

- Flexible 24 VDC (±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.

Applications



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Order

Type	Version	
3117	With power rail connector / terminals	:-
	Supplied via terminals	:-N

Example: 3117

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

Supply voltage ..... 16.8...31.2 VDC
Max. required power ..... 0.80 W
Max. power dissipation ..... 0.43 W

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

MTBF, acc. to IEC 61709 (SN29500) ..... > 241 years
Signal / noise ratio ..... Min. 60 dB (0...100 kHz)
Signal dynamics, input ..... Analog signal chain
Signal dynamics, output ..... Analog signal chain
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 NE21, 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

Measurement range ..... -11.5...+11.5 V
Programmable ranges ..... ±5 and ±10 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

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

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

I.S. / Ex marking

ATEX ..... II 3 G Ex nA IIC T4 Gc
IECEx ..... Ex nA 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

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 10.0068X
FM ..... FM17US0004X / FM17CA0003X
UL ..... UL 61010-1
DNV-GL Marine ..... Stand. f. Certific. No. 2.4