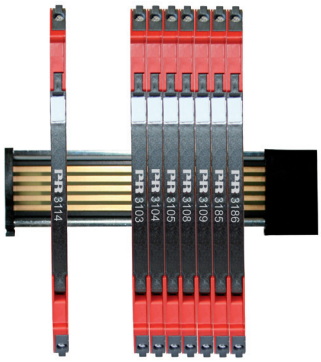


BIPOLAR ISOLATED CONVERTER

- 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 analogue process signals into a unipolar analogue 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.

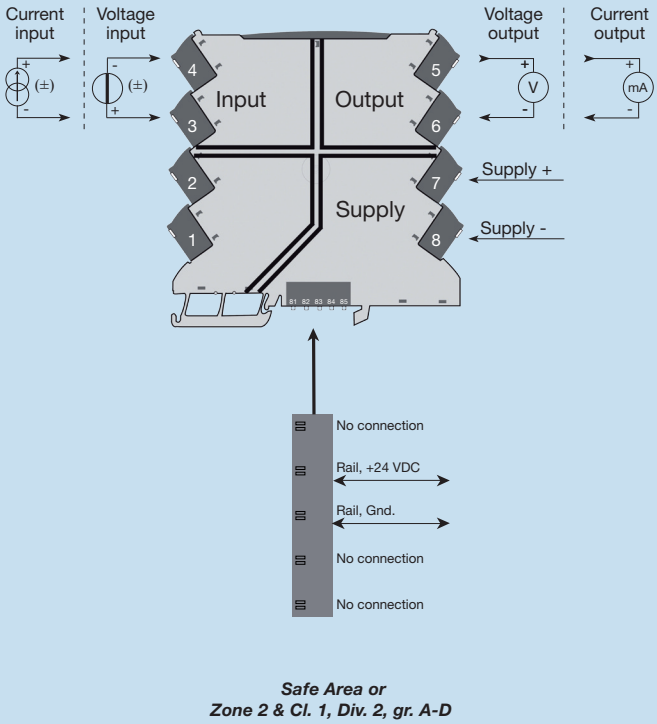
Technical characteristics:

- 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.

CONNECTIONS



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

Order codes for 3117:

Type	Specification
3117	Bipolar isolated converter

Accessories for 3117:

Type	Function
3405	Power rail connector unit
9400	Power rail
9404	Module stop

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 category 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

Common electrical specifications:

Supply voltage, DC ..... 16.8...31.2 VDC
Internal consumption, typ./max. ..... 0.4 W / 0.65 W
Power consumption, max. ..... 0.8 W
Isolation voltage, test ..... 2.5 kVAC
Working isolation voltage ..... 300 VAC / 250 VAC (Ex)
MTBF, acc. to IEC 61709 (SN29500) ..... > 241 years
Signal / noise ratio ..... > 60 dB
Cut-off frequency (3 dB) ..... > 100 Hz or 10 Hz (selectable via DIP-switch)
Response time (0...90%, 100...10%) ..... < 7 ms or < 44 ms

Accuracy values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ± 0.05% of span	≤ ± 0.01% of span / °C

EMC immunity influence ..... < ±0.5% of span
Extended EMC immunity:
NAMUR NE 21, A criterion, burst ..... < ±1% of span

of span = of the selected range

Input specifications:

Current input:
Programmable ranges ..... ± 10 and ± 20 mA
Functional range ..... -23 ... +23 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:
Programmable ranges ..... 0...20 and 4...20 mA
Functional range ..... 0...23 mA
Load (max.) ..... 23 mA / 600 Ω
Load stability ..... ≤ 0.002% of span / 100 Ω
Current limit ..... ≤ 28 mA

Voltage output:
Programmable ranges ..... 0...5, 1...5, 0...10, 2...10 V
Functional range ..... 0...11.5 V
Load ..... > 10 kΩ

Approvals:

EMC 2004/108/EC ..... EN 61326-1
LVD 2006/95/EC ..... EN 61010-1
UL, Standard for Safety ..... UL 61010-1
Safe Isolation ..... EN 61140
GOST R

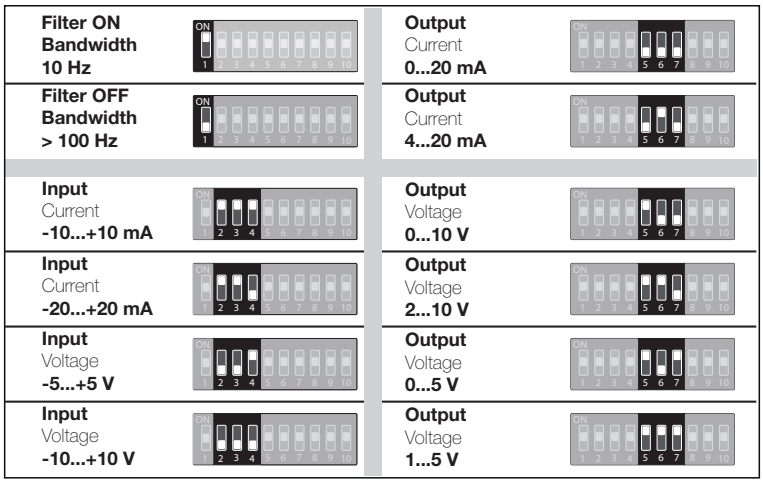
Marine:

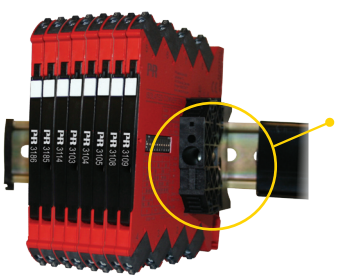
Det Norske Veritas, Ships & Offshore ..... Stand. f. Certific. No. 2.4
Germanischer Lloyd VI-7-2

Ex:

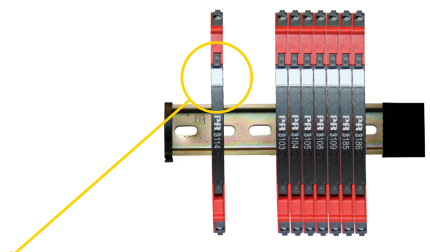
ATEX 94/9/EC ..... KEMA 10ATEX0147 X
IECEx ..... KEM 10.0068 X
c FM us 3041043-C

DIP-switch configuration:
(DIP-switch positions are only read at power up)





Installation on 35 mm DIN rail
The system 3000 device must be supported by module stops for marine applications.
- PR part number 9404 -



Marking
The front cover of the system 3000 units has been designed with an area for affixation of a click-on marker.
The area assigned to the marker measures 5 x 7.5 mm.
Weidmüller's MultiCard System markers, type MF 5/7.5, are suitable.