

## BIPOLAR ISOLATED CONVERTER/SPLITTER

- Conversion of voltage and current bipolar process signals to uni-/bipolar signals
- Multiple signal ranges are selectable via DIP-switches
- Splitter function: 1 signal in and 2 signals out
- Excellent accuracy, better than 0.05 % of selected range and high output load stability
- Slimline 6 mm housing

### Application:

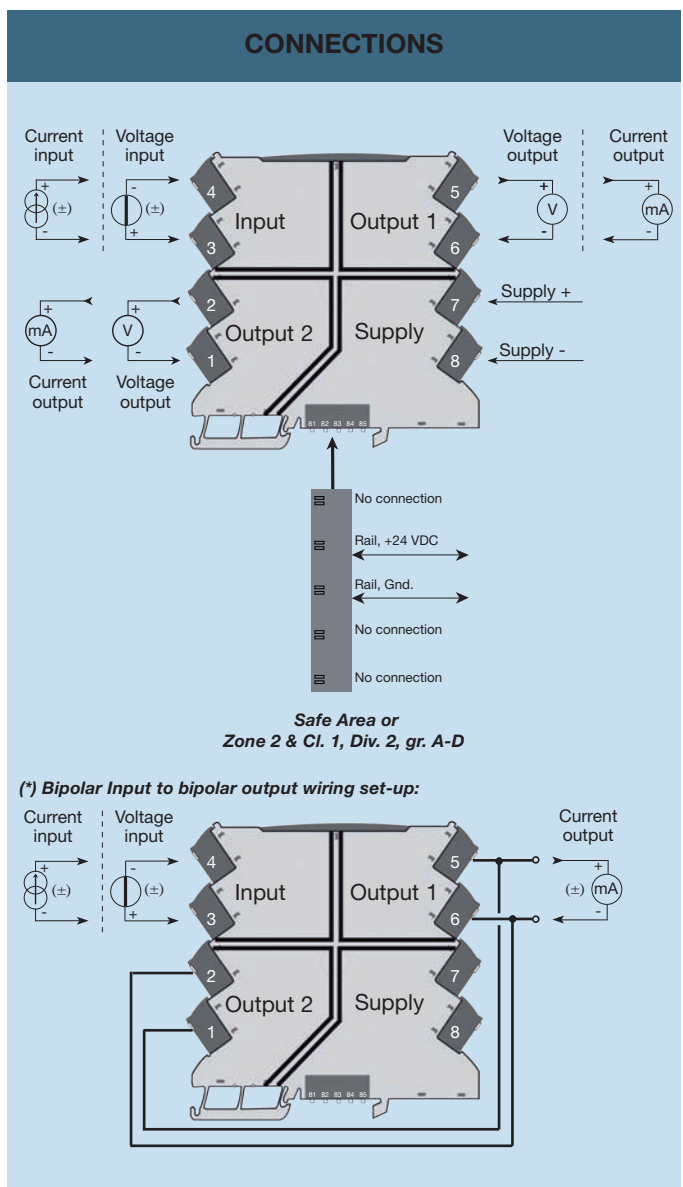
- The 3118 is an isolating converter and splitter which can be used for signal conversion of standard bipolar analogue process signals into two individual unipolar analogue signals.
- The unit offers 4-port isolation and provides surge suppression and protects control systems from transients and noise.
- The 3118 also eliminates ground loops and can be used for measuring floating signals.
- Mounting of the 3118 can be in Safe area or in Zone 2 and Cl. 1 Div 2 area and is approved for marine applications.
- The analogue output can be easily configured and programmed to be bipolar in the ranges  $\pm 10$  mA and  $\pm 20$  mA (\*).

### Technical characteristics:

- Flexible 24 VDC ( $\pm 30\%$ ) supply via power rail or connectors.
- Excellent conversion accuracy, better than 0.05% of selected range.
- 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 3118 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:

- 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:  $-25...+70^{\circ}\text{C}$ .



For pricing or any further information, please contact Omni Instruments Ltd.

**Order codes for 3118:**

Type	Specification
3118	Bipolar isolated converter/splitter

**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 mm<sup>2</sup> / 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)..... > 187 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

of span = of the selected range

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

**Accessories for 3118:**

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

**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  
 \*Bipolar wiring and programming set-up... ±10 and ± 20 mA  
 Load, max..... 23 mA / 300 Ω / per ch.  
 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:**

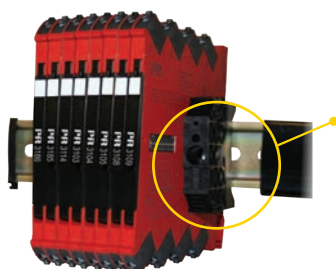
Det Norske Veritas, Ships & Offshore ..... Stand. f. Certific. No. 2.4  
 Germanischer Lloyd ..... VI-7-2

**Ex:**

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

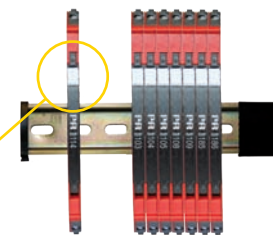
**DIP-switch configuration:**  
 (DIP-switch positions are only read at power up)  
 \* = bipolar wiring set-up

Filter ON Bandwidth 10 Hz	Output ch. 1 Current 0...20 mA	Output ch. 2 Current 0...20 mA
Filter OFF Bandwidth > 100 Hz	Output ch. 1 Current 4...20 mA	Output ch. 2 Current 4...20 mA
Input Current -10...+10 mA	Output ch. 1 Current ± 20 mA set-up*	Output ch. 2 Current ± 20 mA set-up*
Input Current -20...+20 mA	Output ch. 1 Current ± 10 mA set-up*	Output ch. 2 Current ± 10 mA set-up*
Input Voltage -5...+5 V	Output ch. 1 Voltage 0...10 V	Output ch. 2 Voltage 0...10 V
Input Voltage -10...+10 V	Output ch. 1 Voltage 2...10 V	Output ch. 2 Voltage 2...10 V
	Output ch. 1 Voltage 0...5 V	Output ch. 2 Voltage 0...5 V
	Output ch. 1 Voltage 1...5 V	Output ch. 2 Voltage 1...5 V



**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.

