

Bipolar isolated converter / splitter

3118

- 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



Application

- The 3118 is an isolating converter and splitter which can be used for signal conversion of standard bipolar analog process signals into two individual unipolar analog 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 analog output can be easily configured and programmed to be bipolar in the ranges ± 10 mA and ± 20 mA (*special setup).

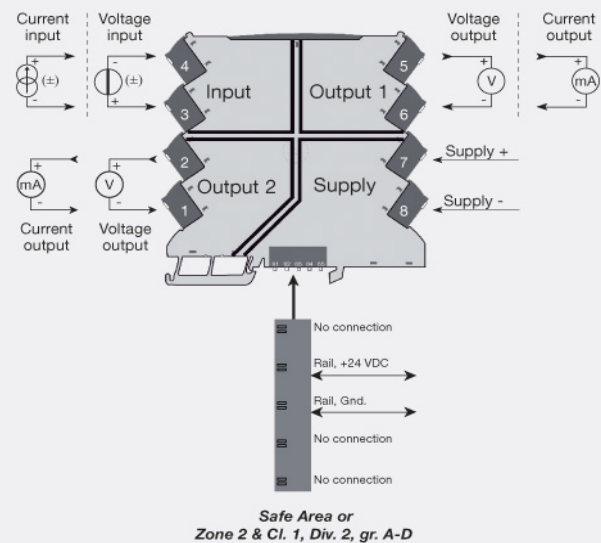
Technical characteristics

- 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.

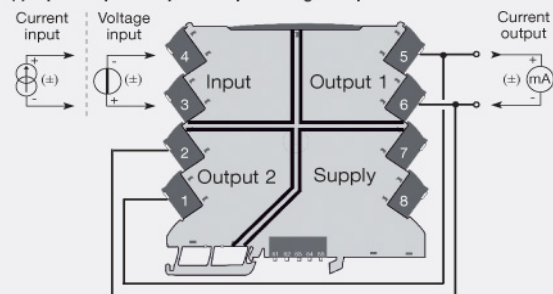
Mounting / installation / programming

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

Connection



(* Bipolar Input to bipolar output wiring set-up:



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 x 2.5 mm ² / AWG 26...12 stranded wire
Screw terminal torque.....	0.5 Nm

Common specifications

Supply voltage.....	16.8...31.2 VDC
Max. power consumption.....	0.8 W
Internal consumption.....	0.4 W (typ.) / 0.65 W (max.)
Isolation voltage, test.....	2.5 kVAC
Isolation voltage, working.....	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
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: Programmable measurement ranges.....	± 10 and ± 20 mA
Functional range, current input.....	-23...+23 mA
Input voltage drop.....	< 1 VDC @ 23 mA
Voltage input: Programmable ranges.....	± 5 and ± 10 V
Functional range, voltage input.....	-11.5...+11.5 V
Input resistance, voltage input.....	≥ 1 MΩ

Output specifications

Programmable signal ranges.....	0...20 and 4...20 mA
Functional range, current output.....	0...23 mA
Load (max.).....	23 mA / 300 Ω / per ch.
Load stability, current output.....	≤ 0.002% of span/100 Ω
Current limit.....	≤ 28 mA
Programmable signal ranges, VDC.....	0/2...10 and 0/1...5 V
Functional range, voltage output.....	0...11.5 V
Load (min.).....	> 10 kΩ
*of span.....	= Of the presently selected range

Approvals

EMC.....	EN 61326-1
LVD.....	EN 61010-1
ATEX.....	KEMA 10ATEX0147 X
IECEx.....	KEM 10.0068X
cFMus.....	3041043-C
GOST R.....	Yes
DNV Marine.....	Stand. f. Certific. No. 2.4
GL.....	V1-7-2
UL.....	UL 61010-1