

## Isolated converter / splitter

### 3109

- Isolation and conversion of standard DC signals
- Power supply and signal isolator for 2-wire transmitter
- Splitter function: 1 in - 2 out
- DIP switch configuration
- Slimline 6.1 mm housing



#### Functional highlights

- Galvanic separation of analog current and voltage signals.
- A competitive choice in terms of both price and technology for galvanic isolation of all signal types to SCADA systems or PLC equipment.
- High 4-port isolation provides surge suppression that protects the control system from transients and noise and eliminates ground loops.
- All terminals are over-voltage protected, polarity protected and short-circuit protected.
- The device can be mounted in Safe area or in Zone 2 / Division 2 areas and is approved for marine applications.

#### Technical highlights

- Flexible 24 VDC ( $\pm 30\%$ ) supply via power rail or connectors.
- Factory-calibrated measurement ranges.
- Fast response time  $< 7$  ms.
- Excellent signal/noise ratio  $> 60$  dB.
- High galvanic isolation of 2.5 kVAC.
- Inputs and outputs are floating and galvanically separated.
- A green front LED indicates normal operation and malfunction.
- Wide ambient temperature range:  $-25...+70^{\circ}\text{C}$ .

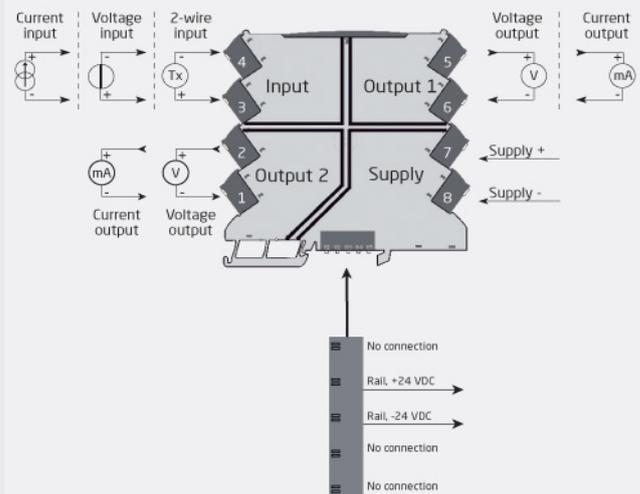
#### Programming

- Easy configuration via DIP switches.

#### Mounting / installation

- The narrow 6.1 mm housing allows up to 163 units per meter.
- Units can be mounted side by side, horizontally and vertically, without air gap on a standard DIN rail, even at  $70^{\circ}\text{C}$  ambient temperature.
- Units can be supplied separately or installed on PR 9400 power rail.

#### Applications



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

## Order

Type	Version
3109	With power rail connector / terminals :- Supplied via terminals :-N

Example: 3109-N

## 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 <sup>2</sup> / 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.....	≤ 1.2 W
Max. power dissipation.....	0.60 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
Programming.....	DIP switches
Signal / noise ratio.....	> 60 dB
Cut-off frequency (3 dB).....	> 100 Hz
Signal dynamics, input.....	Analog signal chain
Signal dynamics, output.....	Analog signal chain
Accuracy.....	Better than 0.05% of selected range
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.....	0...23 mA
Programmable measurement ranges.....	0...20 and 4...20 mA
Input voltage drop.....	< 1.5 VDC
Input resistance.....	Nom. 20 Ω + PTC 50 Ω

### Voltage input

Measurement range.....	0...10.25 V
Programmable measurement ranges.....	0/1...5 and 0/2...10 V
Functional range.....	0...11.5 V / 0...5.75 V
Input resistance.....	≥ 500 kΩ
2-wire transmitter supply.....	> 17 V / 20 mA

## Output specifications

### Current output

Signal range.....	0...23 mA
Programmable signal ranges.....	0 / 4...20 mA
Load (@ current output).....	≤ 300 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 DIP switch selected output range

## I.S. / Ex marking

ATEX.....	II 3 G Ex ec IIC T4 Gc
IECEx.....	Ex ec 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 & UK SI 2016/1091
LVD.....	2014/35/EU & UK SI 2016/1101
ATEX.....	2014/34/EU & UK SI 2016/1107
RoHS.....	2011/65/EU & UK SI 2012/3032
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

## Approvals

ATEX.....	KEMA 10ATEX0147 X
IECEx.....	KEM 10.0068X
UKEX.....	DEKRA 21UKEX0055X
c FM us.....	FM17US0004X / FM17CA0003X
c UL us, UL 61010-1.....	E314307
CCC.....	2020322310003554
EAC Ex.....	EAEU KZ 7500361.01.01.08756
DNV Marine.....	TAA00001RW