

## Isolated repeater / splitter

### 3108

- Isolation and conversion of current signals
- Slimline housing of 6 mm
- Response time <7 ms
- Splitter function: 1 in - 2 out
- Simple - no setup needed



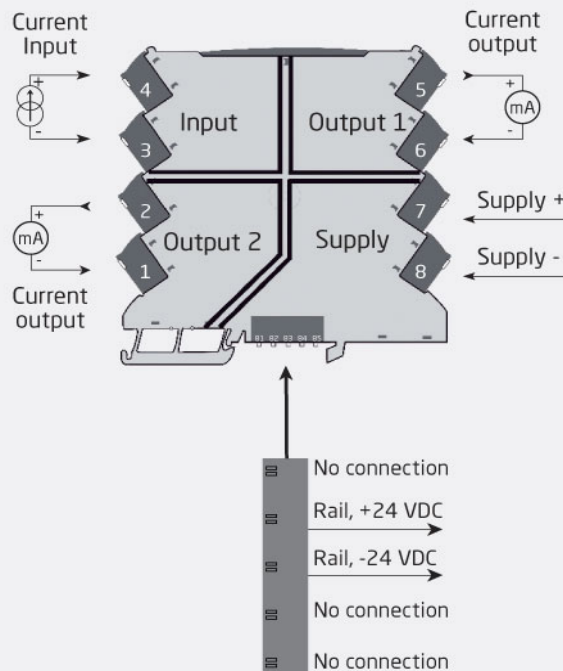
#### Application

- Isolation and conversion of standard DC signals.
- Galvanic separation of analog current signals.
- Elimination of ground loops and measurement of floating signals.
- A competitive choice in terms of both price and technology for galvanic isolation of current signals to SCADA systems or PLC equipment.
- Installation in ATEX Ex zone 2 / IECEx Zone 2 / FM division 2.
- Suitable for environments with high vibration stress, e.g. ships.

#### Technical characteristics

- The input is protected against overvoltage and polarity error.
- Factory-calibrated measurement ranges.
- Inputs and outputs are floating and galvanically separated.

#### Applications



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

**Order**

Type	Version
3108	With power rail connector / terminals :- Supplied via terminals :-N

Example : 3108-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.....	0.75 W
Max. power dissipation.....	0.48 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
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%
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
Input voltage drop.....	< 1.5 VDC

**Output specifications****Current output**

Signal range.....	0...23 mA
Load (@ current output).....	≤ 300 Ω
Load stability.....	≤ 0.002% of span / 100 Ω
Current limit.....	≤ 28 mA
of span.....	= 0...20 mA

**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

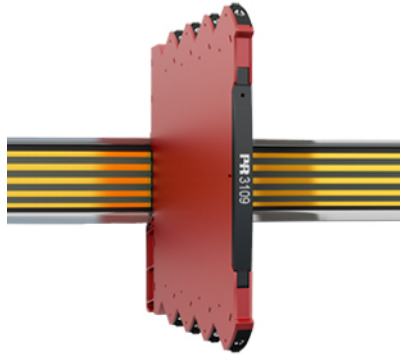
FM, CA..... Cl. I, Div. 2, Gp. A, B, C, D T4  
or Cl. I, Zone 2, Ex nA IIC T4

**Observed authority requirements**

EMC.....	2014/30/EU
LVD.....	2014/35/EU
ATEX.....	2014/34/EU
RoHS.....	2011/65/EU
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

**Approvals**

ATEX.....	KEMA 10ATEX0147 X
IECEX.....	KEM 10.0068X
c FM us.....	FM17US0004X / FM17CA0003X
c UL us, UL 61010-1.....	E314307
CCC.....	2020322310003554
EAC Ex.....	RU C-DK.HA65.B.00355/19
DNV Marine.....	TAA00001RW



## Isolated converter / splitter

### 3109

- Isolation and conversion of standard DC signals
- Slimline housing of 6 mm
- Power supply and signal isolator for 2-wire transmitter
- Splitter function: 1 in - 2 out
- DIP-switch configured



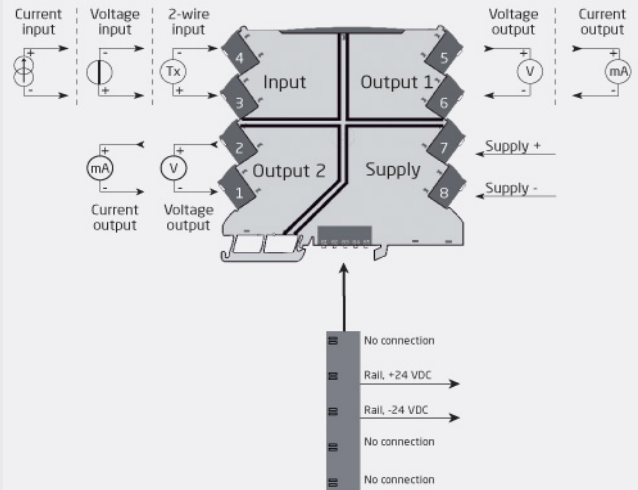
#### Application

- Isolation and conversion of standard DC signals.
- Galvanic separation of analog current and voltage signals.
- Elimination of ground loops and measurement of floating signals.
- A competitive choice in terms of both price and technology for galvanic isolation of current and voltage signals to SCADA systems or PLC equipment.
- Installation in ATEX Ex zone 2 / IECEx zone 2 / FM division 2.
- Suitable for environments with high vibration stress, e.g. ships.

#### Technical characteristics

- Easy configuration via DIP-switches.
- The input is protected against overvoltage and polarity error.
- Factory-calibrated measurement ranges.
- Inputs and outputs are floating and galvanically separated.

#### 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.....	1.20 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
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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

### Voltage input

Measurement range.....	0...10.25 V
Programmable measurement ranges.....	0/1...5 and 0/2...10 V
Measurement 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

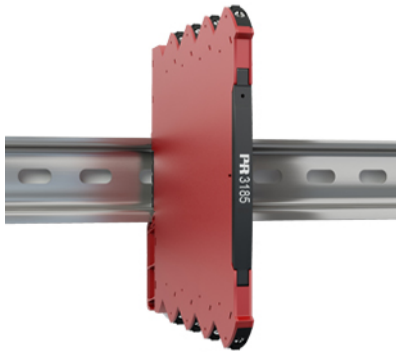
ATEX.....	II 3 G Ex ec IIC T4 Gc
IECEX.....	Ex ec IIC T4 Gc
FM, US.....	Cl. I, Div. 2, Gp. A, B, C, D T4 or Cl. I, Zone 2, AEx nA IIC T4
FM, CA.....	Cl. I, Div. 2, Gp. A, B, C, D T4 or Cl. I, Zone 2, Ex nA IIC T4

## Observed authority requirements

EMC.....	2014/30/EU
LVD.....	2014/35/EU
ATEX.....	2014/34/EU
RoHS.....	2011/65/EU
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

## Approvals

ATEX.....	KEMA 10ATEX0147 X
IECEX.....	KEM 10.0068X
c FM us.....	FM17US0004X / FM17CA0003X
c UL us, UL 61010-1.....	E314307
CCC.....	2020322310003554
EAC Ex.....	RU C-DK.HA65.B.00355/19
DNV Marine.....	TAA00001RW



## Loop powered isolator

### 3185

- 1 or 2 channel input loop powered isolator
- Signal 1:1 functional range 0...23 mA
- Low input voltage drop and fast response time
- Excellent accuracy and high load stability
- Slimline 6 mm housing



#### Application

- 1:1 input loop powered isolator of current signals in the range 0(4)...20 mA.
- 3185 is an easy mounting DIN rail unit.
- A very competitive choice in terms of both price and technology for galvanic isolation of current signals.
- Provides surge suppression and protects control systems from transients and noise.
- 3185 eliminates ground loops and can be used for measuring floating signals.
- The device can be mounted in Safe area or in Zone 2 and Cl. 1 Div 2. area.

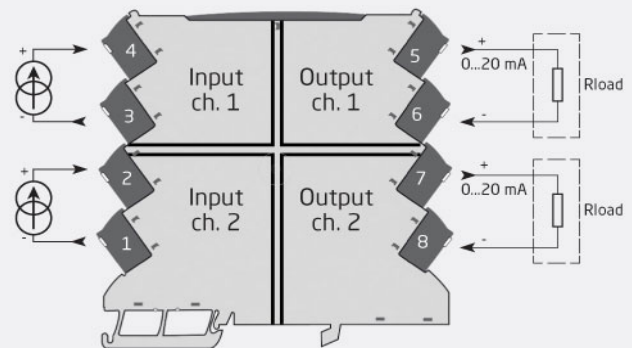
#### Technical characteristics

- 3185 is powered by the analog input current signal loop.
- Low input voltage drop, typ 1.35 V + Vout.
- Excellent conversion accuracy, better than 0.1% in the range 0...20.5 mA.
- Functional range is 0...23 mA which means that 3185 is NAMUR NE43 compliant.
- Inputs and outputs are floating and galvanically separated.
- The output is voltage limited to 17.5 VDC.
- High galvanic isolation of 2.5 kVAC.
- Fast response time < 5 ms.
- Excellent signal/noise ratio > 60 dB.

#### Mounting / installation / programming

- DIN rail mounting with up to 330 channels per meter.
- Temperature operation range is from -25...+70°C.

#### Applications



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

## Order

Type	Unit channels
3185A	Single : 1
	Double : 2

## 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

Power dissipation, per channel.....	30 mW
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### 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%).....	< 5 ms
Signal / noise ratio.....	> 60 dB
Signal dynamics, input.....	Analog signal chain
Signal dynamics, output.....	Analog signal chain
Accuracy.....	Better than 0.1%
Cut-off frequency (3 dB).....	100 Hz
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
Input voltage drop.....	(Unit voltage drop) + Vout.
Signal conversion.....	1:1
Start-up current, typ.....	10 µA
Current input overload, max.....	50 mA
Input to output voltage drop, typ.....	1.35 V + (0.015 x Vout.)

## Output specifications

### Current output

Signal range.....	0...23 mA
Load (@ current output).....	≤ 600 Ω
Load stability.....	< 0.01% of span / 100 Ω
Voltage limit.....	17.5 V
of span.....	= 0...20 mA

## 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
EAC Ex.....	2Ex nA IIC T4 Gc X

## Observed authority requirements

EMC.....	2014/30/EU
LVD.....	2014/35/EU
ATEX.....	2014/34/EU
RoHS.....	2011/65/EU
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

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