



TI 816-5 Be 996 118 5000-10.00



Safety precautions to be strictly observed are marked with following symbols in the operating instructions:




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### 1. Read first and then ...



The proper and safe operation of the device assumes that the operating instructions is **read carefully** and the safety warnings given in the various Sections

**6. Mounting**  
**7. Electrical connections**

are **observed**.

The device should only be handled by appropriately trained personnel who are familiar with it and authorised to work in electrical installations.

### 2. Scope of supply

Signal isolator (Fig. 1)

1 ea. operating instructions (Fig. 2) in English, French, German



Fig. 1



Fig. 2

### 3. Brief description

The signal isolator SINEAX TI 816 serves to electrically insulate an analogue DC signal in the range 0...20 mA which depending on version is then converted to a current or voltage signal (0...20 mA or 0...10 V). It does **not** require a separate power supply.

The instrument fulfils all the important requirements and regulations concerning electromagnetic compatibility **EMC** and **Safety** (IEC 1010 resp. EN 61 010). It was developed and is manufactured and tested in strict accordance with the **quality assurance standard ISO 9001**.

### 4. Versions

There are two versions of the DC signal isolator SINEAX TI 816 available.

Description	Output signal A	Order code	Order No.
Passive <b>DC signal isolator</b> input signal E: 0...20 mA, with 1 isolation and transmission channel, in carrying rail housing N12	0...20 mA	816-5110	990 722
	0...10 V	816-5111	994 089

### 5. Technical data

#### Input signal E $\rightarrow$

DC current:	0...20 mA
Max. permissible current:	50 mA
Voltage limiter:	18 V $\pm$ 5% (with zener diode)
Voltage drop:	< 2 V (for 500 $\Omega$ burden)
Overshoot:	< 20 $\mu$ A (typical 5 $\mu$ A)

#### Output signal A $\rightarrow$

DC current or DC voltage:	0...20 mA or 0...10 V
Limit:	Approx. 30 mA <sup>1</sup> Approx. 15 V <sup>2</sup>
Max. burden:	600 $\Omega$ <sup>1</sup>
Internal resistance:	500 $\Omega$ <sup>2</sup>
Residual ripple:	< 20 mV ss
Time constant:	Approx. 5 ms

#### Accuracy data

Error limits:	< $\pm$ 0,1% <sup>1</sup> (reference value 20 mA, linearity error included)
	< $\pm$ 0,2% <sup>2</sup> (reference value 10 V, linearity error included)

#### Ambient conditions

Operating temperature:	-20 to + 65 °C
Storage temperature:	-40 to + 85 °C
Annual mean relative humidity:	$\leq$ 75% Standard climatic rating
Seismic test:	5 g, < 200 Hz, 2 h in each of 3 directions
Shock test:	<b>50 g</b> , 10 shocks in each of 3 directions

<sup>1</sup> With current signal

<sup>2</sup> With voltage signal

## 6. Mounting

The SINEAX TI 816 isolator is suitable for mounting on two different types of standard rails:

- onto the G-type rail EN 50 035-G32
- or
- onto the top-hat rail EN 50 022-35 × 7.5.



Note **“Ambient conditions”** in Section “5. Technical data” when determining the place of installation!

Simply clip the signal isolator onto the carrying rail acc. to Fig. 3 or Fig. 4.

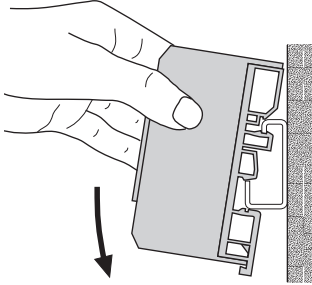


Fig. 3. Mounting onto the G-type rail.

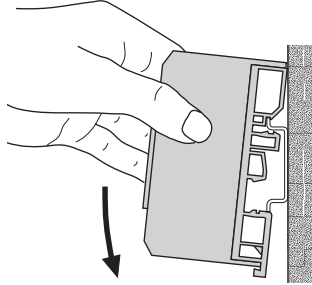


Fig. 4. Mounting onto the top-hat rail.

## 7. Electrical connections

Easily accessible screw terminals are provided at the front of the signal isolator (Fig. 6) which accept wire gauges up to 2.5 mm<sup>2</sup> (stranded wire) or 4 mm<sup>2</sup> (non-stranded wire).



Note that, ...

... the data required to perform the electrical insulation task agree with the data on the nameplate of the SINEAX TI 816 (⊖ input signal and ⊕ output signal, see Fig. 5)!

... in the case of isolators with **current** outputs 0...20 mA, the total resistance of the external leads (receiver plus leads) **does not** exceed the max. burden of **600 Ω**! See “output signal”, section “5. Technical data”!

... in the case of isolators with a **voltage** output 0...10 V, the external receiver connected across the output has a sufficiently **high** internal resistance  $R_{iA}$  in relation to the SINEAX TI 816 output impedance of **500 Ω**! See “Output signal” in Section “5. Technical data”!

The error due to  $R_{iA}$  is:

$$F [\%] = \frac{500 [\Omega] \cdot 100}{R_{iA} [\Omega]}$$

... that input and output cables should be twisted pairs and run as far as possible away from heavy current cables!

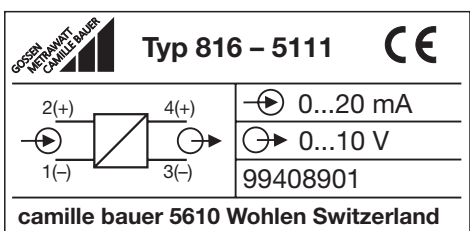


Fig. 5. Example of a nameplate.

Connect the input and output leads E and A according to Fig. 6.



Fig. 6. Terminal allocation.  
E = Input signal, A = Output signal.

## 8. Commissioning and maintenance

The device is in operation as soon as the input signal E is connected.

The signal isolator requires no maintenance.

## 9. Releasing the signal isolator

When dismantling the SINEAX TI 816 ...

... from **G rails** proceed according to Fig. 7. Firstly press the signal isolator upwards (manipulation 1) and tip it upwards at the same time (manipulation 2).

... from **top-hat rails** proceed according to Fig. 8. Tip the signal isolator upwards.

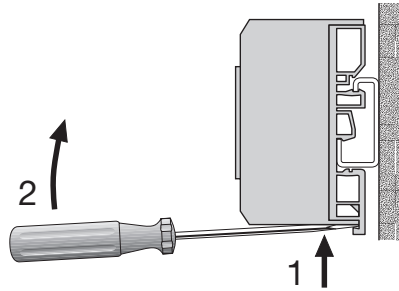


Fig. 7

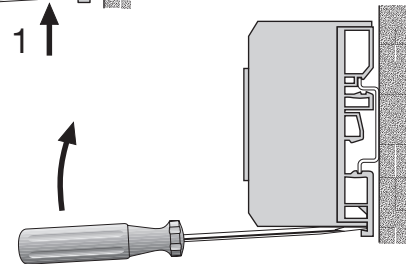


Fig. 8

## 10. Dimensional drawings

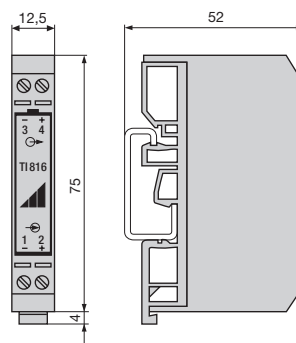


Fig. 9. SINEAX TI 816 on G-type rail EN 50 035 - G 32.

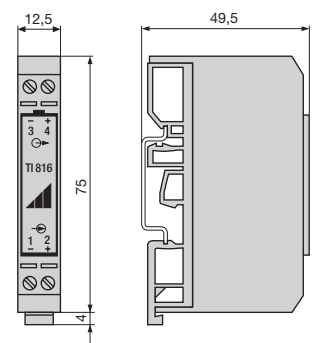


Fig. 10. SINEAX TI 816 on top-hat rail EN 50 022 - 35 × 7.5.