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

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Operating Instructions
Passive DC signal isolator SINEAX TI 816

TI 816-5 Be 996 118 5000-10.00

Contents

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 **DC signal isolator** 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 ⊖►

DC current:	0…20 mA
Max. permissible current:	50 mA
Voltage limiter:	18 V ± 5% (with zener diode)
Voltage drop:	< 2 V (for 500 Ω burden)
Overshoot:	< 20 µA (typical 5 µA)

Output signal A ⊖►

DC current **or** DC voltage:	0…20 mA **or** 0…10 V
Limit:	Approx. 30 mA[1] Approx. 15 V[2]
Max. burden:	600 Ω[1]
Internal resistance:	500 Ω[2]
Residual ripple:	< 20 mV ss
Time constant:	Approx. 5 ms

Accuracy data

Error limits:	< ± 0,1%[1] (reference value 20 mA, linearity error included) < ± 0,2%[2] (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:	≤ 75% Standard climatic rating
Seismic test:	5 g, < 200 Hz, 2 h in each of 3 directions
Shock test:	**50 g,** 10 shocks in each of 3 directions

[1] With current signal
[2] 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.

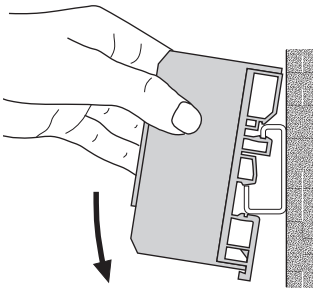

Fig. 3. Mounting onto the G-type rail.

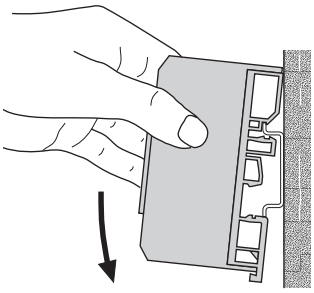

Fig. 4. Mounting onto the top-hat rail.

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 mm² (stranded wire) or 4 mm² (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 RiA in relation to the SINEAX TI 816 output impedance of **500** Ω! See "Output signal" in Section "5. Technical data"!

The error due to RiA 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!

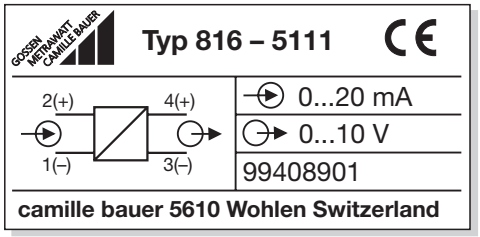

Fig. 5. Example of a nameplate.

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.

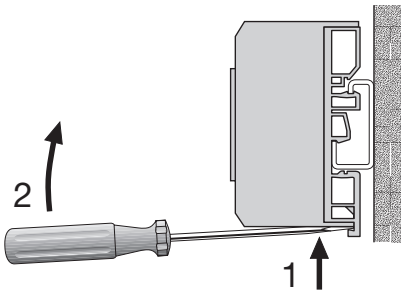

Fig. 7

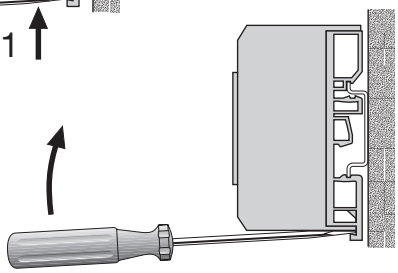

Fig. 8

10. Dimensional drawings

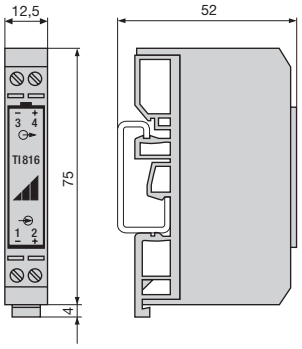

Fig. 9. SINEAX TI 816 on G-type rail EN 50 035 – G 32.

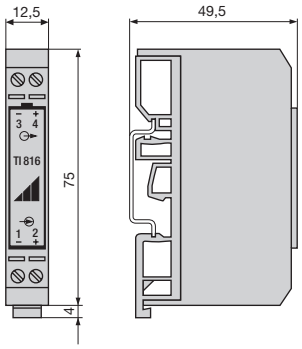

Fig. 10. SINEAX TI 816 on top-hat rail EN 50 022 – 35 × 7.5.