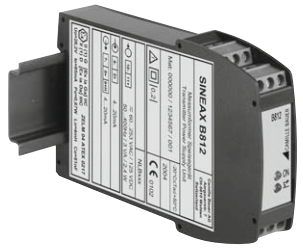


Operating Instructions

Transmitter Power Supply Unit SINEAX B812



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B 812 Be 152 025-03 09.12

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- The manufacturer is not liable for damage that is caused by improper handling, modifications, or improper use.
- Optional with intrinsically safe input (blue terminals). This is an “associated apparatus” and must not be installed in explosion hazardous areas. The output is not intrinsically safe.

1.3 Qualifications of the personnel

Mounting, installation, and commissioning must only be carried out by properly trained and authorized personnel, who have read and understood these operating instructions.

1.4 Repairs and modifications

Repairs and modifications must only be carried out at our factory. The housing must not be opened. There are no configuration or adjusting elements inside the housing. We reserve the right to make changes to improve the product.

2. Short description

The device supplies the passive 2-wire transducer (4...20 mA) which is connected to the input with a DC voltage, and transmits the signal current galvanically isolated 1:1 to the output. The current in the output circuit is also supplied by the device. Therefore a passive signal receiver (4...20 mA) must be connected.

The device is transparent for HART® signals in both directions. The 250 Ω resistor integrated in the output circuit permits communication with SMART transmitters.

Open circuit and short circuit in the input circuit are indicated locally by a red LED.

The device is single channel execution and is suitable for mounting on a top-hat rail.

1. Safety instructions

1.1 Symbols

The symbols used in this operating instruction indicate dangers and they have the following meanings:

Non-compliance could result in functional failures.

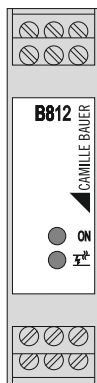
Non-compliance could result in functional failures and injury to personnel.

1.2 Proper use

- The device is a transducer power supply for the safe isolation of 4...20 mA signal circuits.
- The device is intended for mounting in industrial installations and fulfils the requirements according to EN 61010-1.

3. Indicator LEDs

There are two LEDs on the front of the device, which have the following meaning:



Meaning	Color	Meaning
ON	green	The LED is on when the power supply is on.
	red	The LED is on when the signal is outside the normal measuring range of 4...20 mA.

4. Installation instructions



The maximum ambient temperature must be observed.
There must be sufficient circulation of air.
Neighboring devices that produce heat must be mounted at a suitable distance.
The preferred mounting method is on a horizontal rail.
The device must be protected from vibrations.

5. Mounting the device

The SINEAX B812 device is mounted on a top-hat rail.
Snap the device housing onto the top-hat rail (EN 50022) (see Fig. 2).

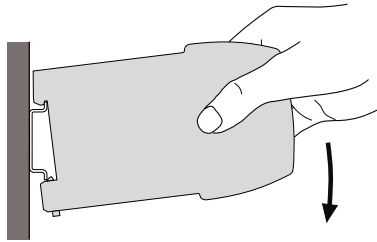


Fig. 2. Mounting on a top-hat rail 35×15 or 35×7.5 mm.

6. Removal of the device

Remove the device from the top-hat rail as shown in Fig. 3.

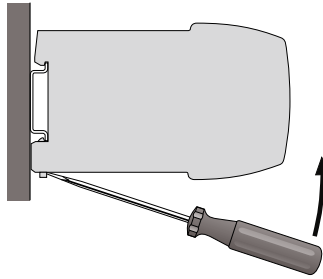


Fig. 3

7. Dimension drawings

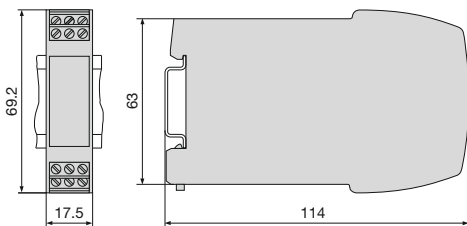


Fig. 4. The SINEAX B812 in a top-hat rail housing **P12/17** mounted on a top-hat rail (35 × 15 mm or 35 × 7.5 mm to EN 50022) with **fixed connection screw terminals**.

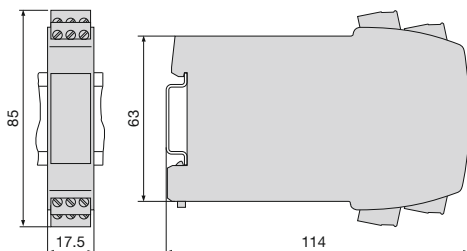


Fig. 5. The SINEAX B812 in a top-hat rail housing **P12/17 St** mounted on a top-hat rail (35 × 15 mm or 35 × 7.5 mm to EN 50022) with **plug-in connection screw terminals**.

8. Electrical connections



- Terminals without internal connections (1, 2, 3, 6 and 12) must remain free and must not be used for other purposes.

- Ex devices may only be operated with a DC power supply of upto $U_m = 125 \text{ V DC}$.



- In the case of “**Intrinsically safe**” explosion-proof, the supplementary information given on the type examination certification, the EN 60079-14 and also local regulations applicable to electrical installation in explosion hazard areas must be taken into account!

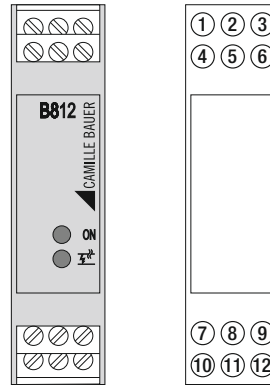
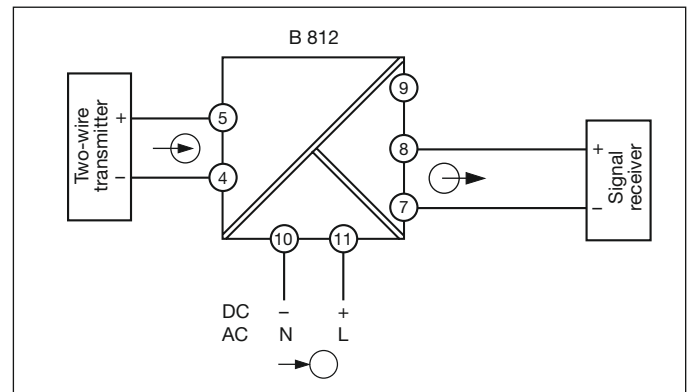


Fig. 6. Arrangement of the terminals

8.1 Connection without HART® terminal

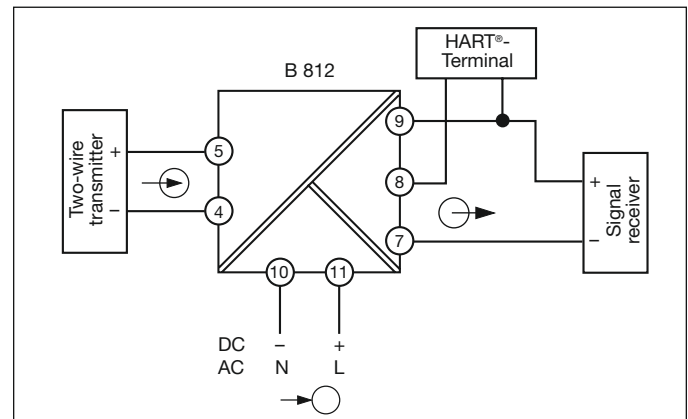


8.2 Connection with HART® terminal

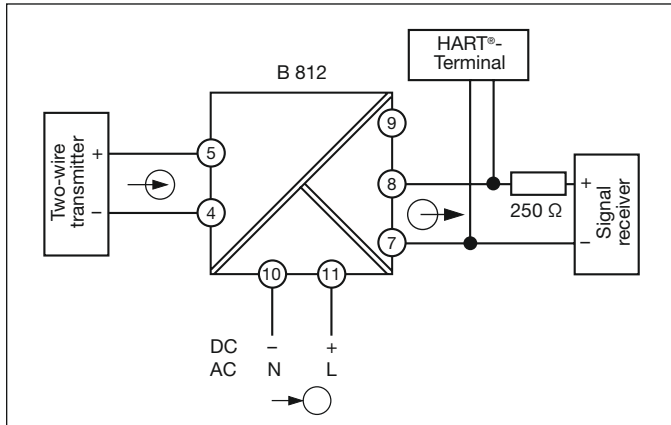


For the correct functioning of the communication, a 250 Ω communication resistor is required in series with the measuring circuit. Please observe that the maximum load on the B812 output resulting from additional devices and the resistance of the wires is not exceeded.

Internal communication resistor



External communication resistor



9. Commissioning

The installation and wiring must be checked before commissioning, and in particular the permitted power supply voltage must be checked (see the rating label).

10. Technical data

10.1 Input

Signal range	4...20 mA
Power supply voltage (I = 20 mA)	18.0 V ± 1 V
No-load voltage (I = 0 mA)	25.5 V ± 1 V
Short circuit current limitation	25 mA ± 2 mA
Source resistance	330 Ω ± 5 Ω
Open circuit detection	3.5 mA ± 0.1 mA
Short circuit detection	21.2 mA ± 0.2 mA

10.2 Intrinsically safe input (Ex version)

Provisional data

U_o	28,2 V
I_o	95 mA
P_o	0.67 W
Type of protection	[Ex ia Ga] IIC and [Ex ia Da] IIIC
Marking	II (1) G [Ex ia Ga] IIC II (1) D [Ex ia Da] IIIC
Type examination certificate	ZELM 04 ATEX 0217 1st supplement

10.3 Output

Signal range	4...20 mA
No load voltage (I = 0 mA)	17.0 V ± 1 V
Internal communication resistor R_c	250 Ω
Permitted load	0...750 Ω 0...500 Ω (via R_c)

10.4 Accuracy

Reference conditions	$T_{amb} = 23^\circ\text{C}$, load = 300 Ω Warm up time 20 minutes Power supply = 24 V DC or 230 V AC Range = 16 mA \cong 100%
Error tolerance incl. linearity error under reference conditions	0.2%
Effect of output load	0.1%
Temperature effect	0.1% / 10°K
Effect of power supply	0.05%

10.5 Power supply

Universal power supply for DC and AC

	Low-range version	High-range version
Voltage range AC/DC	24 – 60 V ± 15 %	85 – 230 V ± 15 % *)
Switching-on current \hat{I} / τ	2.5 A / 1.0 ms at 24 V DC	20 A / 0.15 ms at 325 V DC
Frequency range AC	50 ... 400 Hz	
Power consumption max.	3 VA / 2.4 W	

*) Voltages > 125 V DC require external protection with max. 10 A trip current. For the Ex version, the data in the EC type examination certificate are valid ($U_m = 253$ V AC or 125 V DC).

10.6 Transfer

Signal current over-range	10 %
Response time	< 0.3 ms
HART®	Transparent for HART® signals in both directions

10.7 Galvanic isolation

All three circuits (input / power supply / output) are galvanically isolated from each other.

Electrical safety	To EN 61010-1 Double isolation Measuring and overvoltage category III Contamination level 2
Working voltage	300 V
Test voltage	3.6 kV / 50 Hz

10.8 Ambient conditions

Operating temperature	- 20 ... +50 °C
Storage temperature	- 20 ... +70 °C
Rel. humidity average	≤ 75%, without condensation
Protection type	IP 20, EN 60523
EMV	EN 61000-6-2 / -4

10.9 Various

Weight	100 g
Terminal cross section	2.5 mm ²
Plug-in terminals (alternative)	Coded to prevent incorrect connection

11. Versions

Device Ex-versions [Ex ia Ga] IIC and [Ex ia Da] IIIC

Power supply	Connection terminals	Order number
60 – 253 V AC / 125 V DC	not plugable	155 102
60 – 253 V AC / 125 V DC	plugable	155 144
20 – 70 V AC/DC	not plugable	155 095
20 – 70 V AC/DC	plugable	155 136



Device standard versions

Power supply	Connection terminals	Order number
60 – 265 V AC/DC	not plugable	155 087
60 – 265 V AC/DC	plugable	155 128
20 – 70 V AC/DC	not plugable	155 079
20 – 70 V AC/DC	plugable	155 110

12. Maintenance

The device is maintenance free. Recalibration of the measured signal is not possible.

13. Declaration of conformity

 EG - KONFORMITÄTSERKLÄRUNG EC DECLARATION OF CONFORMITY		 CAMILLE BAUER
Dokument-Nr./ Document.No.:	B812_CE-konf.DOC	
Hersteller/ Manufacturer:	Camille Bauer AG Switzerland	
Anschrift / Address:	Aargauerstrasse 7 CH-5610 Wohlen	
Produktbezeichnung/ Product name:	Messumformer Speisegerät Transmitter Power Supply Unit	
Typ / Type:	Sineax B 812	
<p>Das bezeichnete Produkt stimmt mit den Vorschriften folgender Europäischer Richtlinien überein, nachgewiesen durch die Einhaltung folgender Normen: The above mentioned product has been manufactured according to the regulations of the following European directives proven through compliance with the following standards:</p>		
Richtlinie / Directive	2004/108/EG(CE) Elektromagnetische Verträglichkeit - EMV-Richtlinie Electromagnetic compatibility - EMC directive	
Norm / Standard	EN 61000-6-4: 2007 Fachgrundnormen - Störaussendung für Industriebereiche Generic standards - Emission standard for industrial environments EN 61000-6-2: 2005 Fachgrundnormen - Störfestigkeit für Industriebereiche Generic standards - Immunity for industrial environments	
Prüfungen / Tests	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-11	EN 55011
Richtlinie / Directive	2006/95/EG(CE) Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen – Niederspannungsrichtlinie – CE-Kennzeichnung : 95 Electrical equipment for use within certain voltage limits – Low Voltage Directive – Attachment of CE marking : 95	
Norm / Standard	EN 61010-1: 2001 Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte – Teil 1: Allgemeine Anforderungen Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements	
<p>Die explosionsgeschützte Ausführung stimmt mit folgender Richtlinie überein: The explosion protected variant accords to the following directive:</p>		
Richtlinie / Directive	94/9/EG(CE) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen Equipment and protective systems intended for use in potentially explosive atmospheres	
Norm / Standard	EN 60079-0: 2009 / -11: 2012 / -26:2007 Explosionsfähige Atmosphäre / Explosive atmospheres – - 0: Geräte - Allgemeine Anforderungen / General requirements - 11: Geräteschutz durch Eigensicherheit "i" / Equipment protection by intrinsic safety "i" - 26: Betriebsmittel mit Geräteschutzniveau (EPL) Ga / Equipment with equipment protection level (EPL) Ga	
Nachweis / Proof	ZELM 04 ATEX 0217 Notified Body No. 0102: PTB D-38116 Braunschweig.	
Ort, Datum / Place, date:	Wohlen, 23. Juli 2012	
Unterschrift / signature:	