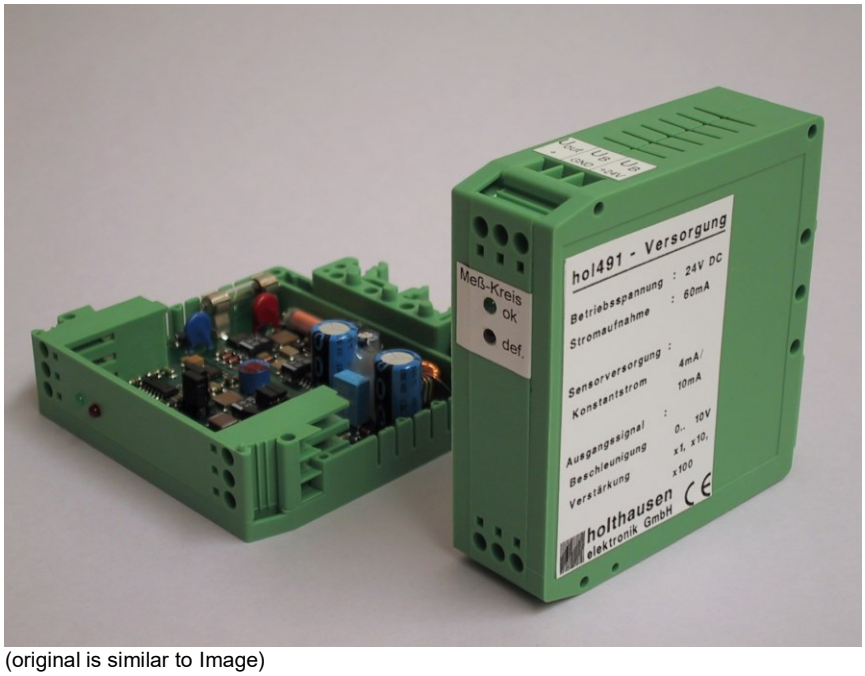
holthausen
elektronik GmbH

User Manual



(original is similar to Image)

Constant current -Sensor supply

Sensor supply_ (hol496)

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Technical changes reserved!

Holthausen elektronik GmbH is certified according to DIN EN ISO 9001.

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Important information

Please read these instructions in full before commissioning the device and observe the instructions contained therein.

In the event of non-observance or non-compliance with the instructions for use, no claim can be asserted for the resulting damages on the part of the manufacturer.

Interventions on thedevice, other than those described in these instructionsforuse, will result in the expiration of the warranty and the exclusion of liability.

The device is intended exclusively for the purpose described below. In particular, it is not intended for the direct or indirect protection of persons.

holthausen elektronik GmbH does not assume any warranty with regard to suitability for a specific purpose.

If you have any questions, please contact us by phone or in writing so that we can help you.

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1. General basic safety instructions

Do not use this device as the only monitoring device if a failure of the device can cause damage to goods or people.

Make sure that the device with its technical data matches the measuring object and the quantities you want to monitor in order to achieve the desired result.

Electrical connection work must be carried out by persons instructed accordingly.
Errors in the connection can result in faulty function, failure or destruction of the sensor and electronics.

Powerful sources of interference, such as e.g. inverters in the immediate vicinity of the sensor, electronics or cabling, can lead to faulty behavior of the device due to interference.

Potential differences and balancing currents in the ground guide can also lead to faulty behaviour of the device.

2. Packaging and transport

Attention:

- Protect the electronics from moisture.
- In the event of a fall, pinching or squeezing, the housing, controls or board may be damaged.

Ensure that the electronics are protected against external influences during transport and storage by means of suitable packaging and appropriate warning stickers.

3. Short description

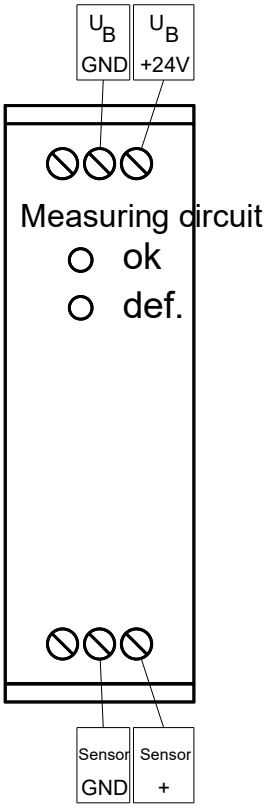
The sensor supply provides a constant current of 1mA.
This current is used to supply a sensor element in the form of a Wheatstone bridge.
The bridge circuit is balanced symmetrically at rest, the bridge voltage in the transverse branch is zero.
In measuring mode, the bridge becomes asymmetrical, in the transverse branch a Measuring voltage on, which is directly proportional to the detuning but also is proportional to the supply current.
Therefore, the sensor current must be extremely stable.

4. Function

The device contains a temperature-compensated power source. Immediately after switching on, the current is over 99.2%, after one minute over 99.5%. The voltage of the output current is monitored and the result is displayed on the front via LED. At values below 0.5V or above 8V, the red LED lights up, a short circuit or an interruption in the measuring circuit is to be suspected. At voltages between 0.5V and 8V the green LED is lit.
The output is permanently short-circuit-proof.
There is no galvanic isolation between supply voltage and Current output.

5. Views

Front view



6. Display elements

On the front of the sensor supply, in addition to the Connection terminals on the top and bottom also the light-emitting diodes for the status display of the measuring circuit monitoring.

GREEN : Measuring circuit error-free

RED : Measuring circuit defective

7. Maintenance

The sensor supply does not require any maintenance.
For safe function, only the observance of the assembly instructions is important.

8. Requirements for the use of the sensor supply

In order to be able to operate the ICP®I safely, some requirements must be met:

Mechanical requirements:

- Snap rail for mounting the ICP®I

Electrical requirements:

- Operating voltage 24V DC (±10%)

9. Assembly

The ICP®I is placed on a snap rail and the wiring is connected according to the labeling.
When mounting the sensor and the sensor cable, the regulations of the sensor manufacturer must be observed. The device must be mounted in such a way that it is protected from moisture and extreme temperatures as well as from mechanical stress and is not exposed to electric and magnetic fields.

10. Connectivity

The ICP®I is equipped as standard with screw terminals integrated into the housing, to which all components are connected.

Clamp	Meaning
UB +24V	Positive pole supply voltage
UB GND	Negative pole supply voltage
Sensor +	Power supply for sensor
Sensor GND	Ground connection for sensor

Any assignments other than those indicated above are not permitted and will at least lead to malfunctions, if not damage or destruction of the device.

11. Troubleshooting

Was is when...

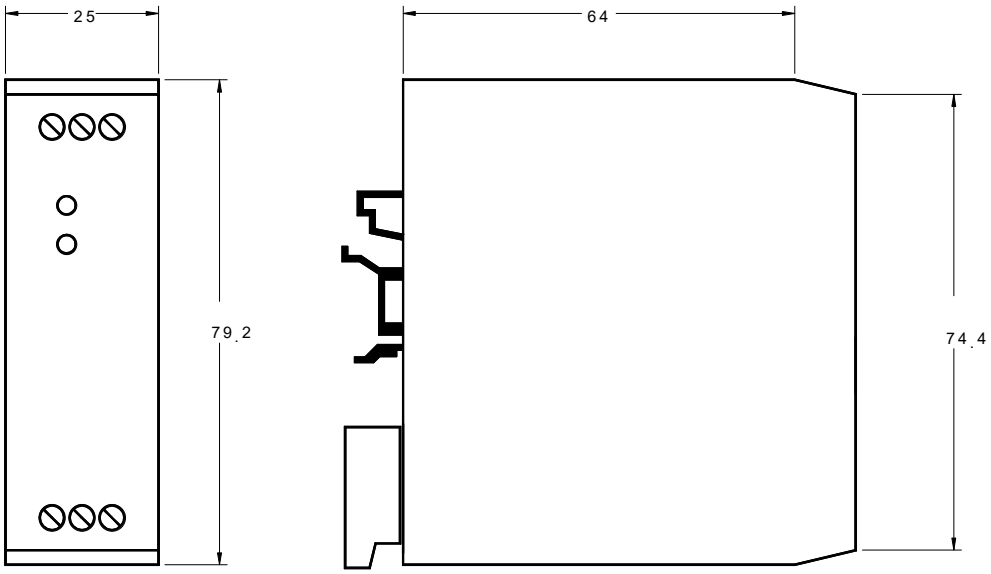
... after switching on, the red instead of the green LED lights up?

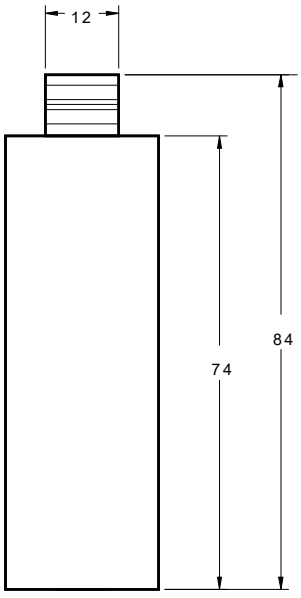
Sensor defective ?
Cable to the sensor interrupted?
Short circuit in the sensor line?

... neither of the two LEDs is lit?

Operating voltage available and properly connected?
Fuse defective?
Electronics defective?

12. Dimensional sketch





13. Technical data

Operation Voltage	24V DC (±10%)
Current consumption	max. 30mA
Operating temperature	0 to 70°C
Degree of Protection	IP 20
Housing	Plastic snap rail housing
Dimensions	80 x 25 x 74mm (B x H x T)
Fuse	Glass fuse 1A (5x20mm)
Sensor monitoring	means an offset between 1V and 10V
	Measuring circuit ok ⇨ green LED lights up
	outside this range, a defect in the
	Measuring circuit detected ⇨ red LED lights up
Output signal	1mA constant current
Output voltage	max. 22V DC
Load at output	0 - 18kΩ
Linearity error	0 -4.7k, < 0.1%
	0 -12k, < 0.2%
	0 -18k, < 0.5%

Technical data subject to change!
ICP® is a registered trademark of PCB Piezotronic INC.

holthausen
elektronik GmbH

EU-Konformitätserklärung
EU declaration of conformity

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gemäß der europäischen Richtlinien:
in conformity of the european directives:

2014//34/EU	ATEX-Richtlinie / ATEX-Directive
2014/30/EU	EMV-Richtlinie / EMC-Directive
2011/65/EU	Richtlinie zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten EU Directive for the restriction of the use of certain hazardous substances in elctrical and electronic equipment

erklären wir, dass die Bauart von:
we declare, that the construction of:

Sensor-Versorgung mit Signalaufbereitung
sensor supply with signal conditioning

ICP®-I_Konstantstrom-Sensorversorgung hol496
Model 682A02 mit dem Label IMI PCB Piezotronics

folgenden europäischen Richtlinien entspricht:
corresponding to the following european directives:

EN IEC 61000-6-2:2019	EMV-Störfestigkeit, Industrie-Bereich Immunity standard for industrieal environments
EN 61000-6-3:2011	EMV-Störaussendung, Wohnbereich Emission standard for reidential and commercial environments
EN 61326-1:2013	Elektrische Meß-Steuer-Regel u. Laborgeräte, EMV-Anforderungen EMC requirement, equipment for measurement, control and laboratory
DIN EN 61010-1:2020-03	Sicherheitsbestimmungen Meß-Steuer-Regel- u. Laborgeräte Safety requirements for electrical equipment for measurement
EN IEC 63000:2018	Technische Dokumentation zur Beurteilung von Elektro- u. Elektronik-geräten hinsichtlich der Beschränkung gefährlicher Stoffe. Technical documentation for the assessment of elektrical products with respect to the restriction of hazardous substances
QM-System Auditiert von	ISO9001 TÜV Rheinland CE0035

Geschäftsführer: Michael Holthausen
Manager:

Ort: Nettetal Datum: 13.12.2021 Unterschrift:
Place: Date: Sign: