

4.3 Electrical Installation

Establish the electrical connection of the device according to the technical data shown on the manufacturing label, the following table and the wiring diagram.

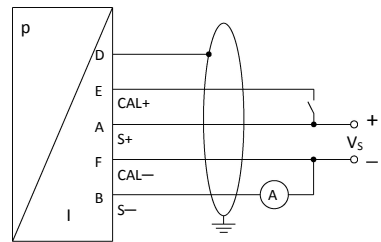
DX18 HU 300

Pin configuration:

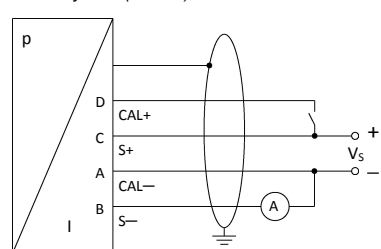
Electrical connections	MIL / Bendix (6-pin)	Glenair (4-pin)	cable colours (IEC 60757)
Supply +	pin A	pin C	WH (white)
Supply -	pin B	pin B	BN (brown)
Calibration +	pin E	pin D	PK (pink)
Calibration -	pin F	pin A	GY (grey)
Shield	cable shield / pin D	plug housing	GNYE (green / yellow)

Wiring diagrams:

2-wire-system (current) MIL / Bendix



2-wire-system (current) Glenair



Obtaining an 80 % calibration signal:

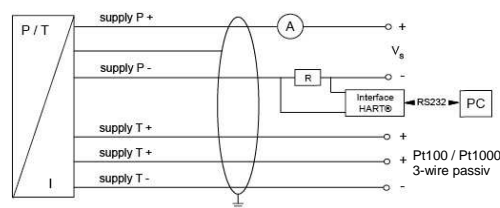
For producing an 80 % calibration signal, please apply in pressureless mode a voltage of min. 5 V to the connections CAL+ and CAL-. The max. voltage has to be equated with the device's max. allowed operating voltage. By applying the voltage to CAL+ and CAL-, an additional current of 12.8 mA is issued, resulting in a total current of 16.8 mA. For Ex devices, it has to be observed that the same source of supply has to trigger the calibration signal and supply the signal circuit.

DX18 HU 400

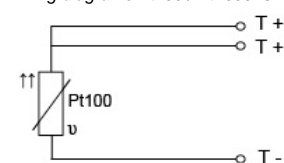
Pin configuration:

Electrical connection	field housing M20x1.5
Pressure	
Supply P+	IN+
Supply P-	IN-
Shield	⊖
Temperature	
Supply T+	T+
Supply T+	T+
Supply T-	T-

Wiring diagrams:



wiring diagrams Pt100 / Pt1000 3-wire system



Connection technique

Hereby two measuring circuits are established. By the third wire it is possible to find out and to compensate the resistance of wire.

5. HART® communication with DX18 HU 400

	Danger of death from explosion
	<ul style="list-style-type: none"> - when interrupting the intrinsically safe circuit where an explosion hazard exists - Only interrupt the intrinsically safe circuit for looping-in a HART® communication interface (HART® Communicator or HART® Modem) when no explosion hazard is present.

An additional signal as per HART® specification is superimposed on the analogue output signal. The device may be configured by means of a HART® communication device. In this regard, we recommend the CIS 150 programming kit (available as accessory).

In order to ensure trouble-free operation, the following requirements must be taken into account:

Maximum cable length between measuring device and supply:

$$L_{\max} = \frac{65 \cdot 10^6}{R_v \cdot C_v} - \frac{40 \cdot 10^6}{C_v}$$

Wherein L_{\max} : maximum length of cable in [m]
 R_v : resistance of cable together with load resistance in [Ω]
 C_v : capacity of cable in [pF/m]

Resistance R:

$$R = \frac{U - 12}{0,024} \Omega$$

wherein U: supply in [V_{DC}]

The resistance must be at least 240 Ω .

6. Commissioning

	Danger of death from explosion
	<ul style="list-style-type: none"> - Explosion hazard if the operating voltage is too high (max. 28 V_{DC})! - Operate the device only within the specification! (according to data sheet)

- ✓ The device has been installed properly.
- ✓ The device does not have any visible defect.
- ✓ The device is operated within the specification. (see data sheet and EC type-examination certificate).

7. Maintenance

	Danger of death from airborne parts, leaking fluids, electric shock
	<ul style="list-style-type: none"> - Always service the device in a depressurized and de-energized condition!
	Danger of injury from aggressive fluids or pollutants
	<ul style="list-style-type: none"> - Depending on the measured medium, this may constitute a danger to the operator. - Wear suitable protective clothing e.g. gloves, safety goggles.

If necessary, clean the housing of the device using a moist cloth and a non-aggressive cleaning solution.

The cleaning medium for the media wetted parts (pressure port/diaphragm/seal) may be gases or liquids which are compatible with the selected materials. Also observe the permissible temperature range according to the data sheet.

Deposits or contamination may occur on the diaphragm/pressure port in case of certain media. Depending on the quality of the process, suitable maintenance intervals must be specified by the operator. As part of this, regular checks must be carried out regarding corrosion, damage to the diaphragm and signal shift.

If the diaphragm is calcified, it is recommended to send the device to BD SENSORS for decalcification. Please note the chapter "Service/Repair" below.

NOTE – Wrong cleaning or improper touch may cause an irreparable damage on the diaphragm. Therefore, never use pointed objects or pressured air for cleaning the diaphragm

8. Troubleshooting

	Danger of death from airborne parts, leaking fluids, electric shock
	<ul style="list-style-type: none"> - If malfunctions cannot be resolved, put the device out of service.
	Danger of death from explosion
	<ul style="list-style-type: none"> - As a matter of principle, work on energized parts, except for intrinsically safe circuits, is prohibited while there is an explosion hazard.

In case of malfunction, it must be checked whether the device has been correctly installed mechanically and electrically. Use the following table to analyse the cause and resolve the malfunction, if possible.

Fault: no output signal	
Possible cause	Fault detection / remedy
Connected incorrectly	Checking of connections
Conductor/wire breakage	Checking of all line connections.
Defective measuring device (signal input)	Checking of ammeter (miniature fuse) or of analogue input of your signal processing unit

Fault: analogue output signal too low	
Possible cause	Fault detection / remedy
Load resistance too high	Checking of load resistance (value)
Supply voltage too low	Checking of power supply output voltage
Defective energy supply	Checking of the power supply and the supply voltage being applied to the device

Fault: slight shift of the output signal	
Possible cause	Fault detection / remedy
Diaphragm of sensor is severely contaminated, calcified or crusted	Checking of diaphragm; if necessary, send the device to BD SENSORS for cleaning

Fault: large shift of the output signal	
Possible cause	Fault detection / remedy
Diaphragm of sensor is damaged (caused by overpressure or mechanically)	Checking of diaphragm; when damaged, send the device to BD SENSORS for repair

Fault: wrong or no output signal	
Possible cause	Fault detection / remedy
Cable damaged mechanically, thermally or chemically	Checking of cable; pitting corrosion on the stainless-steel housing as a result of damage on cable; when damaged, send the device to BD SENSORS for repair

9. Removal from Service

	Danger of death from airborne parts, leaking fluids, electric shock
	<ul style="list-style-type: none"> - Disassemble the device in a depressurized and de-energized condition!
	Danger of injury from aggressive media or pollutants
	<ul style="list-style-type: none"> - Depending on the measured medium, this may constitute a danger to the operator. - Wear suitable protective clothing e.g. gloves, goggles.

NOTE – After dismantling, mechanical connections must be fitted with protective caps.

10. Service/Repair

Information on service / repair:

- www.bdsensors.cz
- sale@bdsensors.cz
- Service phone: +42 (0) 572 411 011

10.1 Recalibration

During the life-time of a transmitter, the value of offset and span may shift. As a consequence, a deviating signal value in reference to the nominal pressure range starting point or end point may be transmitted. If one of these two phenomena occurs after prolonged use, a recalibration is recommended to ensure furthermore high accuracy.

10.2 Return

	Danger of injury from aggressive media or pollutants
	<ul style="list-style-type: none"> - Depending on the measured medium, this may constitute a danger to the operator. - Wear suitable protective clothing e.g. gloves, goggles.

Before every return of your device, whether for recalibration, decalcification, modifications or repair, it has to be cleaned carefully and packed shatter-proofed. You have to enclose a notice of return with detailed defect description when sending the device. If your device came in contact with harmful substances, a declaration of decontamination is additionally required.

Appropriate forms can be downloaded from our homepage. Download these by accessing www.bdsensors.de or request them:

sale@bdsensors.cz | phone: +42 (0) 572 411 011

In case of doubt regarding the fluid used, devices without a declaration of decontamination will only be examined after receipt of an appropriate declaration!

11. Disposal

	Danger of injury from aggressive media or pollutants
	<ul style="list-style-type: none"> - Depending on the measured medium, this may constitute a danger to the operator. - Wear suitable protective clothing e.g. gloves, goggles.

The device must be disposed of according to the European Directive 2012/19/EU (waste electrical and electronic equipment). Waste equipment must not be disposed of in household waste!

NOTE - Dispose of the device properly!

12. Warranty Terms

The warranty terms are subject to the legal warranty period of 24 months, valid from the date of delivery. If the device is used improperly, modified or damaged, we will rule out any warranty claim. A damaged diaphragm will not be accepted as a warranty case. Likewise, there shall be no entitlement to services or parts provided under warranty if the defects have arisen due to normal wear and tear.