

Electrical connection	M12x1 metal (4-pin)		
Code	M10 / M20	M13 (17.620G)	
Supply +	1		1
Supply -	2		3
Signal + (for 3-wire)	3		2
Shield	4		plug housing

Electrical connection	Micro		
Code	C10	CB0 (17.620G)	
Supply +	1		1
Supply -	2		3
Signal + (for 3-wire)	3		2
Shield	ground pin		ground pin

Electrical connection	field housing	cable colours (IEC 60757)
Supply +	IN +	WH (white)
Supply -	IN -	BN (brown)
Signal + (for 3-wire)	OUT +	GN (green)
Shield		GYE (green-yellow)

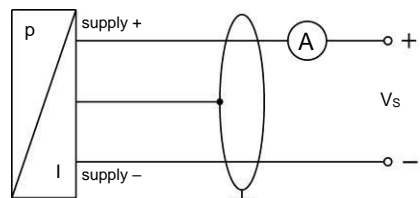
Electrical connection	Buccaneer (4-pin)	TRIM TRIO® (4-pin)
Supply +	1	1
Supply -	2	2
Signal + (for 3-wire)	3	3
Shield	4	4

Electrical connection	Bayonet MIL-C-26482 (10-6)		
	2-wire	3-wire	
Supply +	A	A	
Supply -	B	D	
Signal + (for 3-wire)	-	B	
Shield	pressure port		

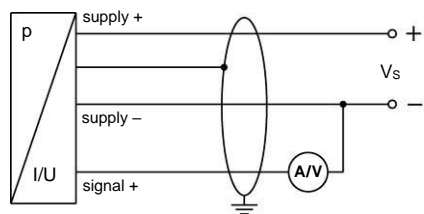
NOTE – The pin configuration for different electrical connections can be found on the manufacturing label.

Wiring diagrams:

2-wire-system (current)



3-wire-system (current/voltage)



5. Commissioning

	Danger of death from airborne parts, leaking fluid, electric shock
	- 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.

In case of highly precise devices with an accuracy of 0.1 % FSO, a microcontroller-controlled electronic system is used for signal processing. This electronic system is used for signal improvement. Due to the principle, the processing of measured values requires a longer time than with purely analogue sensors, which only comprise amplification circuitry. Due to the longer processing time, the output signal follows the measured value not continuously but in jumps. In case of relatively stable and slowly changing measured values, this property plays a minor role. Compare this with the information on the adjusting time in the data sheet.

In the case of i-devices with optional communication interfaces can also be configured by these electronics. Offset, span and damping are programmable within the limits given in the data sheet. For configuring the device, the programming kit CIS 510 consisting of Adapt 1, Windows® compatible programming software P-Scale 510, power supply and connecting cable is necessary. This can be ordered additionally from BD|SENSORS.

6. Maintenance

	Danger of death from airborne parts, leaking fluids, electric shock
	- Always service the device in a depressurized and de-energized condition!

	Danger of injury from aggressive fluids or pollutants
	- 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.

During the cleaning processes, note the compatibility of the cleaning media used in combination with the media-wetted materials of the pressure measuring devices. Permissible concentrations and temperatures must be observed. Verification/ validation by the user is essential.

For EHEDG certified devices in tanks, the cleaning device must be positioned in such a way that the sensor is directly assessed and wetted for cleaning. The device has been developed for Cleaning in Place (CIP) applications and must not be dismantled for cleaning.

Deposits or contamination may occur on the diaphragm/ pressure port in case of certain media. Depending on kind and quality of the process, suitable cyclical maintenance intervals must be specified by the operator. As part of this, regular checks must be carried out regarding corrosion, damage of diaphragm/seal(s) and signal shift. A periodical replacement of the seal(s) may be necessary.

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.

7. Troubleshooting

	Danger of death from airborne parts, leaking fluids, electric shock
	- If malfunctions cannot be resolved, put the device out of service (proceed according to chapter 8 up to 10)

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 <u>all</u> 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	

8. Removal from service

	Danger of death from airborne parts, leaking fluids, electric shock
	- Disassemble the device in a depressurized and de-energized condition!
	Danger of injury from aggressive media or pollutants
	- 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.

9. Service / repair

Information on service / repair:

- www.bdsensors.de
- info@bdsensors.de
- Service phone: +49 (0) 92 35 / 98 11 0

9.1 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.

9.2 Return

	Danger of injury from aggressive media or pollutants
	- 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:

info@bdsensors.de | phone: +49 (0) 92 35 / 98 11 0

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

10. Disposal

	Danger of injury from aggressive media or pollutants
	- 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!

11. 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.

12. EU declaration of conformity / CE

The delivered device fulfils all legal requirements. The applied directives, harmonised standards and documents are listed in the EC declaration of conformity, which is available online at: <http://www.bdsensors.de>.

Additionally, the operational safety is confirmed by the CE sign on the manufacturing label.

Notes:



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