

BCT 22

" Piezoresistive Pressure Sensor "



- Piezoresistive pressure sensor
- 22 mm body diameter
- Different models from 0...100mbar to 0...600BAR
Different vacuum models from 0...-100mbar to 0...-1BAR
- Analog 4 ... 20mA / 0 ... 10VDC etc. different analog outputs or CANopen output option
- G1/4, G1/2, NPT1/4, NPT1/2, M14x1, M20x1.5, UNF7/16X20 etc. process connection options
- EMC and reverse polarity protection
- High accuracy and stabilityLong-term excellent work
- Stainless steel housing

ATEK BCT 22 series Pressure transmitters offer high performance for demanding commercial and heavy industry applications.

Our products with piezoresistive working principle can be used in water, air, oil etc. applications.

The standard stainless steel housing with IP65 / IP67 protection can work in harsh environments.

The BCT 22 series, which is not affected by electrical fluctuations and reverse connections due to over voltage and reverse polarity protection, has a long life.

APPLICATIONS

- Pneumatic Systems
- Hydraulic Systems
- Machines Equipments
- Air Cooling – Heating Systems
- Water Technologies
- Automation Applications

TECHNICAL FEATURES

ELECTRICAL DATA

Measurement Principle	Piezoresistive	
Measurement Type	Relative ambient pressure measurement (optional: absolute pressure) Air, Water, Oil, Non-explosive gases	
Measurement Range	Diffrent models from 0...100mbar to 0...600Bar Different vacuum models from 0... -100mbar to 0...-1Bar	
Maximum Pressure Strength	300%F.S. \leq 700mbar, 200%F.S. $<$ 250Bar 150%F.S \geq 250Bar *Can be 3 or 5 times.	
Oring – Sealing	Standard NBR, optional FKM(Viton) or EPDM	
Output Signal	4...20mA (2 Wire), 0...20mA (3 Wire) 0...10VDC, 1...5VDC, 0...5VDC, Ratiometric CANopen	
Load	4-20mA, 0-20mA	250Ω
	0-5VDC, 1-5VDC	\geq 2.5K
	0-10VDC	\geq 5K
	Ratiometric	\geq 2.5K
Supply Voltage	4-20mA	8 ... 32 V _{DC}
	0-20mA	12 ... 30 V _{DC}
	0-10VDC, 0-5VDC, 1-5VDC	12 ... 30 V _{DC}
	Ratiometric	5 V _{DC}
	CANopen	8...26 V _{DC}
Operating Current	30 mA max.	
Accuracy	\pm 0,5 FS @25°C \pm 1 FS @0...+70°C \pm 2 FS @-40...+85°C	
Resolution	12 bit	
Response Time	Standard: 25ms %10...%90 nominal pressure Optional: 1ms, 5ms, 125ms (1ms response time is only available for current output, not for voltage output models)	

MECHANICAL DATA

Sensor	Ceramic or Silicon
Process Connection	G1/4, G1/8, G1/2, NPT1/4, NPT1/8, NPT1/2, M14x1, M20x1.5, UNF7/16X20M, UNF7/16X20F
Mounting / Tightening Torque	15 ... 20 Nm
Electrical Connection	DIN43650-A, DIN43650-C, M12, Packard, Circular connector or 3 x 0.14mm ² PVC cable
Housing Material	Stainless Steel - 1.4305 (AISI303) Optional Stainless Steel 316L or Titanium

ENVIRONMENTAL DATA

Operating Temperature	-40°C ... +85°C
Storage Temperature	-40°C ... +85°C
Humidity	Max. %95 non-condensing
Protection Class	IP65 or IP67 ** IP67 protection is provided if M12 connector models are equipped with press-printed connectors.

EMC PROTECTION

Immunity	IEC 61000-6-2
Emission	IEC 61000-6-3

CANopen SPECIFICATIONS

Communication Profile	CiA 301
Device Type	CANopen, CiA DS404
Node ID	Can be set from 1 to 127 with LSS or SDO (Default Node ID:1)
Baud Rate	10 kBit/s, 20 kBit/s, 50 kBit/s, 100 kBit/s, 125 kBit/s, 250 kBit/s, 500 kBit/s, 800 kBit/s, 1 Mbit/s Default Baud Rate:125 kBit/s
PDO Data Rate	1000 ms
Error Control	Heartbeat, Emergency Message
PDO	4 Tx PDO
PDO Modes	Event/Time triggered, Synch/Asynch
SDO	1 server
Position Information	Object Dictionary 0x6/7/8/9130
Termination Resistance	Optional

* Product life will be shortened when more pressure is given than working pressure

According to the product, it may be damaged at high pressure of 3-5 times.

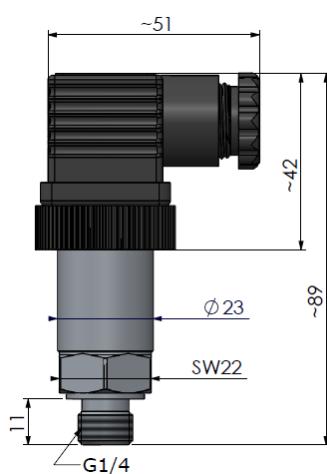
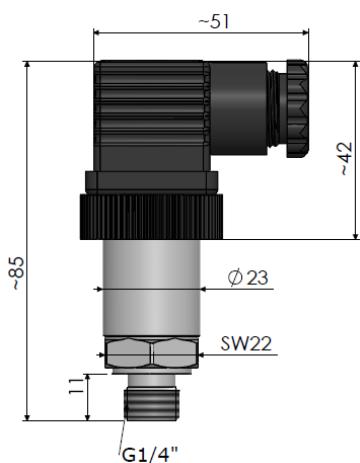
** IP67 protection is provided if M12 connector models are equipped with press-printed connectors.

MECHANICAL DIMENSIONS (mm)

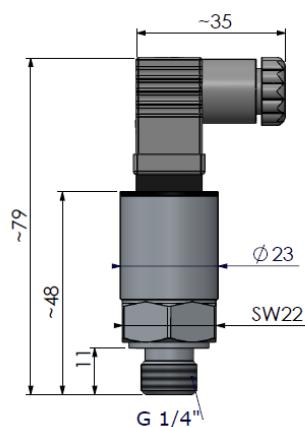
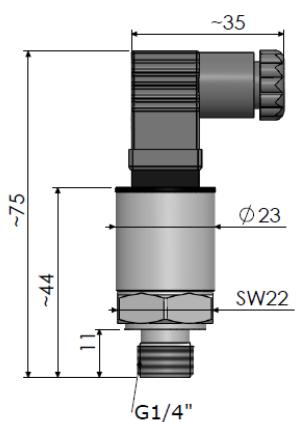
From -100 miliBar to 600 Bar (Analog Output)

From 2 Bar to 400 Bar (Analog Output)

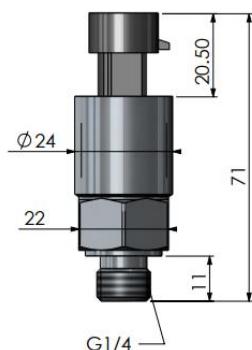
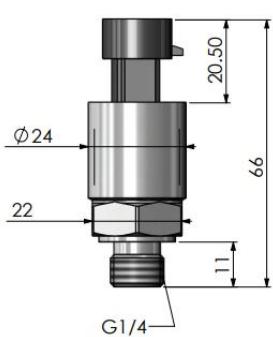
S30 CONNECTOR : DIN43650-A



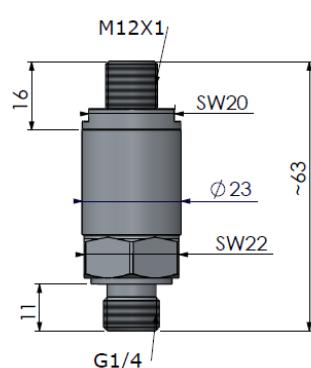
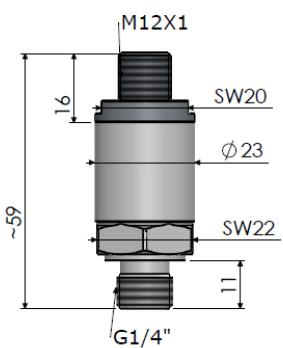
S31 CONNECTOR : DIN43650-C



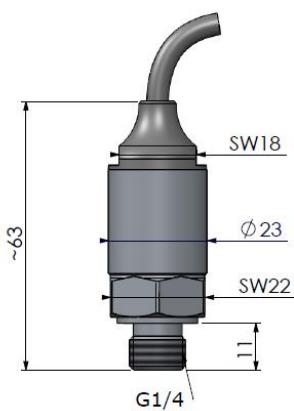
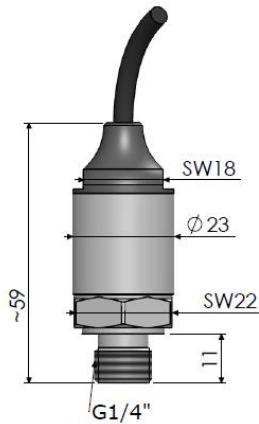
S32 CONNECTOR : PACKARD



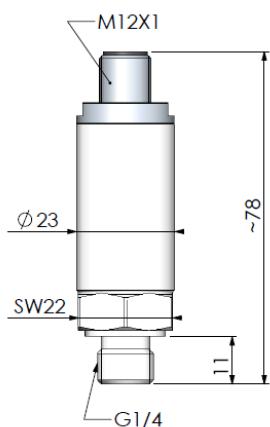
S12/S15 CONNECTOR : M12



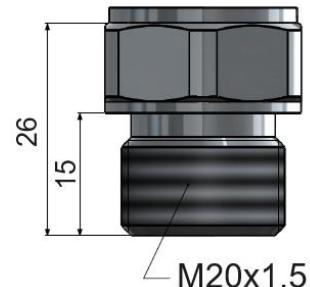
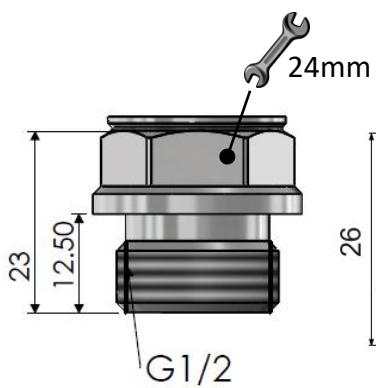
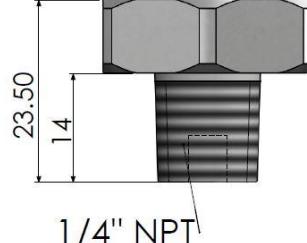
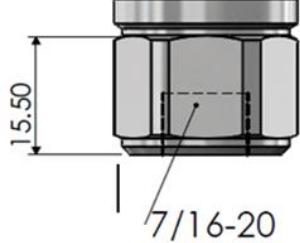
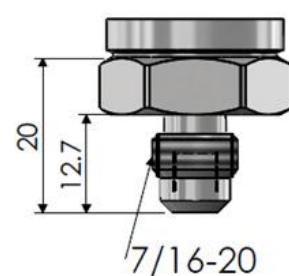
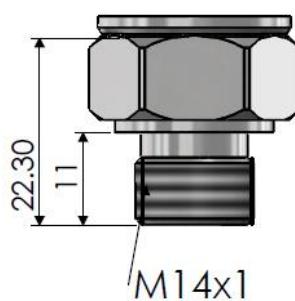
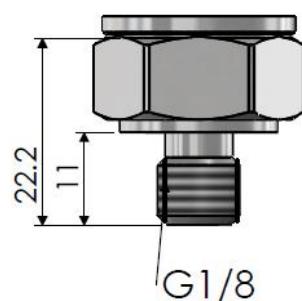
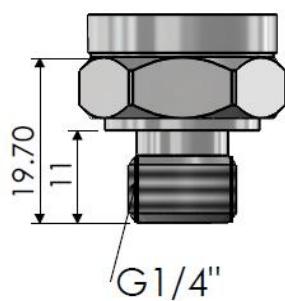
CABLE



Mechanical Dimensions for CANopen Output



PROCESS CONNECTION OPTIONS

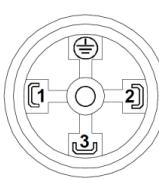
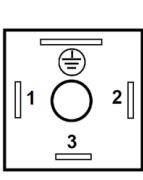
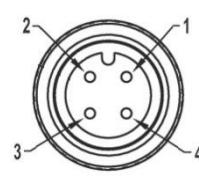
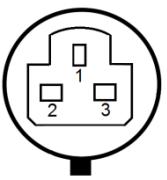
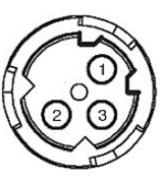


* In the case of the G1/2 model, the dimension of key slot is 24mm. All other models are 22mm.

** Do not turn the product by holding from connector during installation. Otherwise, the product may be damaged.

ELECTRICAL CONNECTION

ELECTRICAL CONNECTION FOR ANALOG OUTPUTS

						CABLE	
	S30	S31	S12 S15	S32	S33	COLOR	
	PIN NO	PIN NO	PIN NO	PIN NO	PIN NO		
CURRENT OUTPUT	+Vcc	2	2	2	B (2)	1	RED
	Analog Out	1	1	1	C (1)	2	BLACK
VOLTAGE OUTPUT	+Vcc	2	2	2	B (2)	1	RED
	GND	1	1	1	C (1)	2	BLACK
	Analog Out	3	3	3	A (3)	3	YELLOW

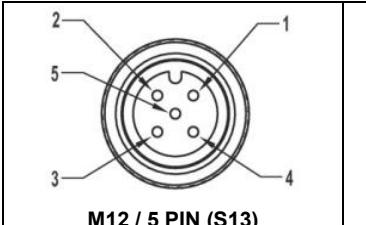
* For IP67 protection at model with M12 connector, press-printed cable should be used. Otherwise, it can not be used under IP67 conditions.

** PVC cable is used as standard in the model with cable.

*** On models with the PACKARD connector, the letter of pin numbers are 1(C) , 2(B) , 3(A).

**** Only S30 connector type can be selected for 0-20mA analog output. Other connector types or wired models cannot be selected.

ELECTRICAL CONNECTION FOR CANOPEN OUTPUTS

		CABLE
CAN_SHIELD	Pin 1	SHIELD
V+ (8...26V)	Pin 2	RED
GND (0V)	Pin 3	BLACK
CAN_H	Pin 4	YELLOW
CAN_L	Pin 5	GREEN

WARNING

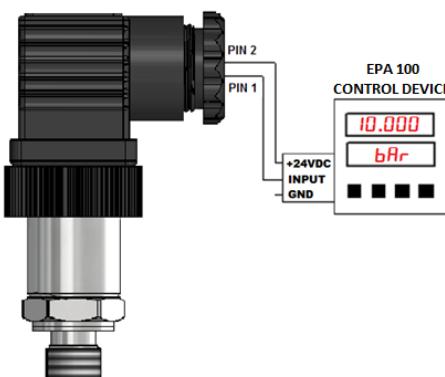
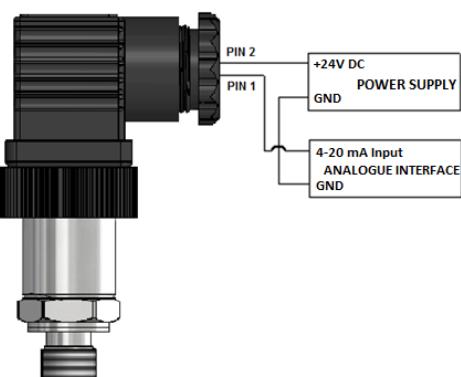
Wrong connections may damage the sensor.

If the transmitter is used for water pressure measurement, do not remove the integrated M5 valve.

Otherwise, pressure peaks caused by the water pump may damage the transmitter.

SAMPLE CONNECTIONS

2 Wire 4-20mA Connection Connector Pin No	Signal
1	4...20mA Analogue Output
2	+8...32 VDC (Supply)

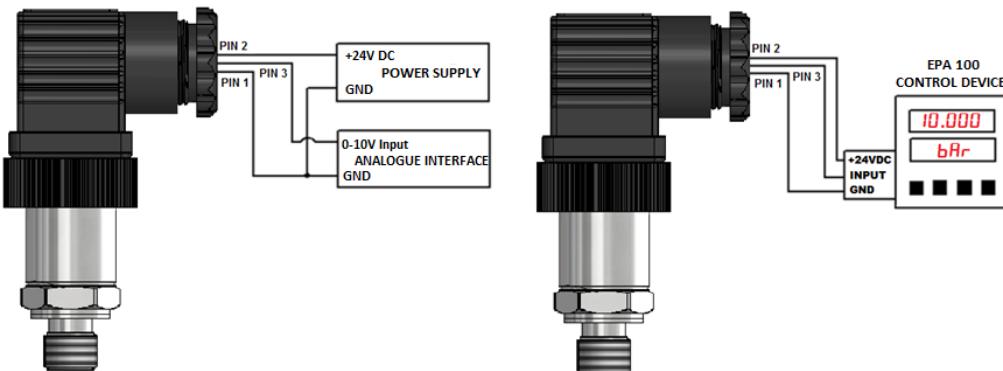


3 Wire 0-10VDC or 0-20 mA Connection

Connector Pin No

Signal

1	GND
2	+12...30 VDC (Supply)
3	0...10VDC or 0-20 mA Output

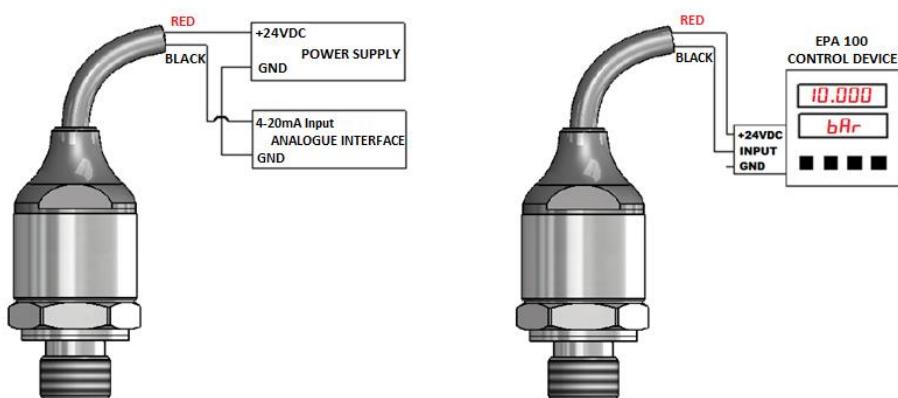


2 Wire 4-20mA Connection

Cable Color

Signal

BLACK	4...20mA Analogue Output
RED	+8...32 VDC (Supply)

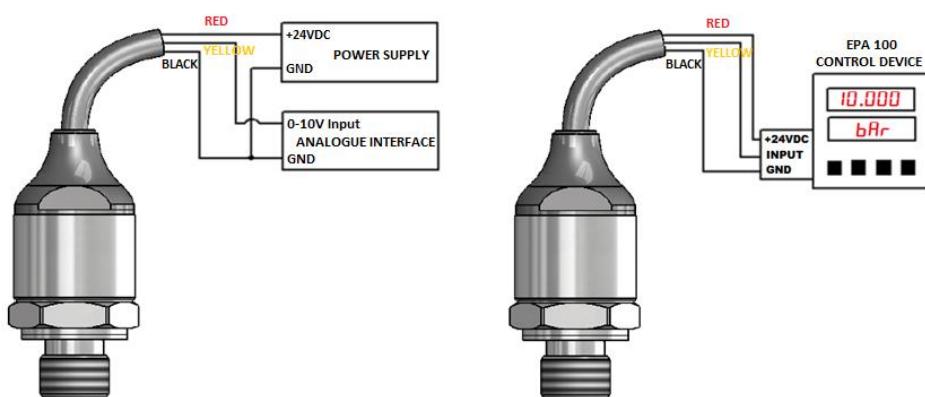


3 Wire 0-10VDC Connection

Cable Color

Signal

BLACK	GND
RED	+12...30 VDC (Supply)
YELLOW	0...10VDC Output



ORDER CODE

Model

BCT 22 - 10Bar - A - G1/4 - S30 - -

Pressure Range

0...-100mBar : Vacuum 0...-100mbar
 -1...0Bar : Vacuum -1...0BAR
 0...1Bar : Vacuum (Reverse Calibration)

100mBar : 0...100mbar
 250mBar : 0...250mbar
 400mBar : 0...400mbar
 600mBar : 0...600mbar

1Bar : 0...1BAR
 10Bar : 0...10BAR
 16Bar : 0...16BAR
 25Bar : 0...25BAR
 100Bar : 0...100BAR
 160Bar : 0...160BAR
 250Bar : 0...250BAR
 400Bar : 0...400BAR
 600Bar : 0...600BAR

* Ask for other options.

Process Connection

G1/4 : G1/4 Connection
 G1/8 : G1/8 Connection
 G1/2 : G1/2 Connection
 NPT1/4 : NPT1/4 Connection
 NPT1/8 : NPT1/8 Connection
 NPT1/2 : NPT1/2 Connection
 M14 : M14x1 Connection
 M20x1.5 : M20x1.5 Connection
 7/16M : UNF7/16x20M Connection
 7/16F : UNF7/16x20F Connection

* Ask for other options.

Body Material/ Custom Coding

Empty : Stainless 303
 E316 : Stainless 316L

* Ask for other options.

Output Signal

Voltage Output Product
 V : 0-10VDC (standard)
 V1 : 0-5VDC
 V2 : 1-6VDC
 V3 : 0,5-4,5VDC
 V4 : 0,5-5,5VDC
 V5 : 1-5VDC
 V6 : 1-10VDC

Ratiometric Products
 V8 : Ratiometric 0.5-4.5VDC
 V9 : Ratiometric 0-5VDC

Current Output Products
 A : 4-20mA (2-wire) (standard)
 A0 : 0-20mA (3-wire)

CANopen Output Products
 C: CANopen

* Ask for other options.

Electrical Connection

S12 : M12x1 4 pin connector
 S13 : M12x1 5 pin connector (for CANopen output)
 S15 : M12x1 4 pin (1 supply, 3 output)
 S30 : DIN43650-A type large type connector
 S31 : DIN43650-C type small type connector
 S32 : Packard connector
 S33 : Circular connector
 2M : 2 meters cable

*Only S30 connector can be selected for 0-20mA (A0) analog output. Other connector types or wired models cannot be selected.

* Ask for other options.

RECOMMENDED PRODUCTS

BSS Series Pressure Transmitter Coolers

[Max. 300 °C](#)



EPA Series Process Control Devices

[48x48mm model EPA 100](#)

[74x74mm model EPA 200](#)

[96x48mm model EPA 300](#)

