

Electronic Pressure Switches

Catalogue

Electronic Pressure Switches



Overview

Control
every move

Barksdale
CONTROL PRODUCTS

CRANE Barksdale, Inc./Barksdale GmbH
A Subsidiary of Crane Co.

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Overview



Model	UPA 2	UPA 2 - Ex	Series 600
Measuring ranges	-1...0 to 0...800 bar gauge 0...1 bar 0...10 bar absolute pressure	0...1 bar to 0...600 bar gauge	0...1 bar to 0...400 bar
Output signals	4... 20 mA (2-wire) 0... 10 VDC (3-wire)	4... 20 mA (2-wire)	4... 20 mA (2-wire)
Process connection	G1/4 M or G1/2 M (flush) stainless steel	G1/4 M or G1/2 M (also flush diagram), stainless steel 1/2" NPT or 1/4" NPT M, stainless steel	G1/4 M
Electrical connection	Plug, DIN EN 175 301-803-A (prev. DIN 43650)	Plug, DIN EN 175 301-803-A (prev. DIN 43650)	M12x1-plug, DIN EN 175 301-803-C (prev. DIN 43650)
Media temperature range	-25 °C... +100 °C	-25 °C... +100 °C	-40 °C... +85 °C
System of protection	IP67 with PG / IP65 with plug	IP65	NEMA 4X, IP65 / IP67
Sensor element	Piezoresistive silicone measuring cell with internal or flush stainless steel diaphragm	Polysilicone-thinfil sensor with internal or flush stainless steel diaphragm	Ceramic sensor technology
Features	Absolute pressure and gauge, variety of measuring ranges	Also with flush diaphragm, high long-term stability, intrinsically safe version acc. to ATEX EEx ibIIC T5/T6	Compact size
Applications	OEM applications, Hydraulic and pneumatic systems, measuring and testing equipment, shipbuilding and offshore applications	Process and chemical technology, pharmaceutical and food industry, machine and apparatus construction	OEM applications, Hydraulic and mobile hydraulics, pneumatic
Linearity error	typ. < 0.2% f.s. max. < 0.5% f.s.	typ. < 0.5% f.s. max. < 1.0% f.s.	typ. ≤ ± 0.5% f. s. max. ≤ ± 1.0% f. s.
Display	---	---	---
Switching outputs	---	---	---
Options	on request	on request	on request

Overview



Model	Switch 2000	UDS1 V2	UDS 7
Measuring ranges	0...1 bar to 0...600 bar gauge	0...10 bar to 0...600 bar gauge	-1...0 bar to 0...600 bar gauge 0...1 bar 0...10 bar absolute pressure
Output signals	4...20 mA 0...10 V DC	---	4...20 mA 0...10 V DC
Process connection	G1/4 M, stainless steel	G1/4 M	G1/4 M stainless steel, G1/2 M, flush
Electrical connection	Plug M12 x 1, 4-pin	Plug M12 x 1, 4-pin	Plug M12 x 1, 5-pin
Media temperature range	-25 °C... +100 °C	-25 °C... +100 °C	-25 °C... +100 °C
System of protection	IP65	IP65	IP67 with PG / IP65 with plug
Sensor element	Piezoresistive silicone measuring cell with internal or flush stainless steel diaphragm	Piezoresistive silicone or ceramic measuring cell	Piezoresistive silicone measuring cell with internal stainless steel diaphragm
Features	Rugged, compact dual pressure switch	Compact construction, housing 320° rotatable	Rugged, compact dual pressure switch, stainless steel
Applications	OEM applications, hydraulic systems, plant and steel construction, automobile industry, machine tool construction	OEM applications in hydraulic and pneumatic systems, press construction, lubricant monitoring, machine tool industry, injection molding machine	Hydraulic and pneumatic systems, test bed / apparatus construction, automation, Process / chemical technology
Linearity error	max. < 0.5 % f.s.	repeatability 1 % f. s.	max. < 0.5 % f.s
Display	3-digit 7-segment LED display	---	4-digit LED dot-matrix display, digit height 5 mm, green
Switching outputs	2x solid state output pnp NO/NC (programmable), adjustable switching time delay 0... 10 s	2x solid state output	2x solid state output pnp NO/NC (programmable), adjustable switching time delay 0... 10 s
Hysteresis / Deadband	freely adjustable	freely adjustable	freely adjustable

Overview



Model	UDS 7 - Ex	UDS 3 - V3	UAS 7
Measuring ranges	-1...0 bar to 0...600 bar gauge 0...1 bar 0...10 bar absolute pressure	-1...0 to 0...600 bar gauge 0...1 bar 0...10 bar absolute pressure	Display -9999... +9999, Current input 4...20 mA, Voltage input 0... 10 VDC
Output signals	4...20 mA	4...20 mA 0...10 V DC	4...20 mA 0... 10 VDC
Process connection	G1/4 M stainless steel, G1/2 M, flush	G1/4 female thread, bottom entry optional: G1/4" NPT female thread	Plug M12 x 1; 4-pin for analog input
Electrical connection	2 x plug M12 x 1; 4-pin	Screw terminals 14-pin; 1 x PG13.5 side entry	Plug M12 x 1, 4-pin or 5-pin
Media temperature range	0 °C... +60 °C	-25 °C... +100 °C	---
System of protection	IP65	IP65	IP65
Sensor element	Piezoresistive silicone measuring cell with internal stainless steel diaphragm	Piezoresistive silicone measuring cell with internal stainless steel diaphragm	---
Features	Dual pressure switch, stainless steel construction, intrinsically safe version acc. to ATEX	Pressure switch with 4 relay outputs and one analog output	Universal digital display with analog input/output and 2 transistor switching outputs
Applications	Gas compressors, injection moulding machines, test bed / apparatus construction, Process / chemical technology	OEM applications, hydraulic and pneumatic systems, heavy industry and plant construction, automobile industry	OEM applications, hydraulic and pneumatic systems, test bed and apparatus engineering, heavy industry
Linearity error	max. < 0,5 % v. M. E.	max. < 0.5% f.s.	max.< 0.2% f.s.
Display	4-digit LCD display, digit height 10 mm	8-digit 14-segment LCD display, digit height 12 mm, green, bargraph	4-digit 7-segment LED display, red, digit height 10 mm

Overview



Model	UAS 3 - V3	UAD 3 - V3
Measuring ranges	Display -9999... +9999, Current input 4... 20 mA, Voltage input 0... 10 VDC	Display -9999... +9999, Current input 4... 20 mA, Voltage input 0... 10 VDC
Output signals	4...20 mA 0... 10 VDC	4...20 mA 0... 10 VDC
Process connection	Plug 3-pin, DIN EN 175 301-803-A (prev. DIN 43650), incl. plug connector	2 x plug 3-pin, DIN EN 175 301-803-A (prev. DIN 43650)
Electrical connection	Screw terminals 14-pin; 1 x PG13.5 side entry	Screw terminals 16-pin; 1 x PG13.5 side entry
Media temperature range	---	---
System of protection	IP65	IP65
Sensor element	---	---
Features	Rugged, universal digital display with analog input/output and 4 relay contacts	Rugged, universal digital display with two analog inputs, two outputs and 4 relay outputs
Applications	OEM applications, hydraulic and pneumatic systems, test bed and apparatus engineering, heavy industry	OEM applications, hydraulic and pneumatic systems, test bed and apparatus engineering, heavy industry
Linearity error	max. < 0.2 % f.s.	max. < 0.2 % f.s.
Display	8-digit 14-segment LCD display, digit height 12 mm, green, bargraph	2 x 8-digit 14-segment LCD display, digit height 12 mm, red and green, bargraph
Switching outputs	4 x switching outputs with SPDT relays, adjustable switching time delay 0... 10 s	4 x switching outputs with SPDT relays, adjustable switching time delay 0... 10 s
Hysteresis / Deadband	---	---
Options	on request	on request
Temperature influence	< 0.05 % f. s. / 10 K from -10 °C... +70 ° C	< 0.05 % f. s. / 10 K from -10 °C... +70 ° C

Electronic Pressure Transducers

UPA2

Electronic pressure transducers for general measuring tasks,
with internal or flush
stainless steel diaphragm,
linearity error 0.5% and 0.25% f. s.

Features

Variety of measuring ranges
Absolute and gauge pressure ranges
Rugged stainless steel construction
GL approval (German Lloyd)

Measuring ranges

-1...0 bar to 0...800 bar gauge
0...1 bar 0...10 bar absolute pressure

Applications

OEM applications
Hydraulic and pneumatic systems,
test beds,
shipbuilding and offshore applications

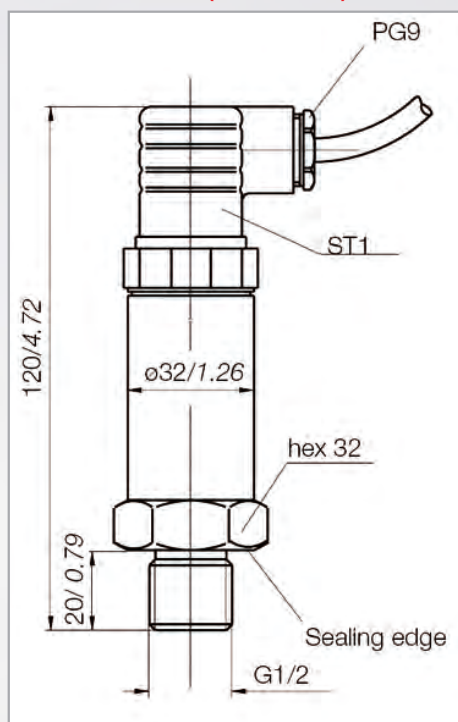


Technical Data

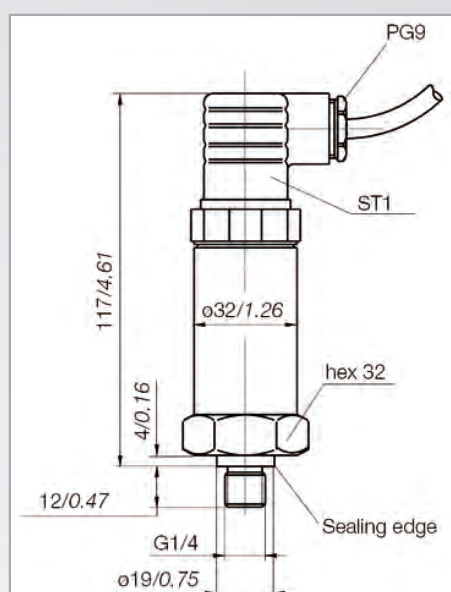
Sensor element:	Piezoresistive silicon measuring cell					
Materials:						
Wetted parts:	Stainless steel, mat. no. 1.4301					
Electronics housing:	Stainless steel, mat. no. 1.4301					
Seals:	FKM, EPDM					
System of protection:	IP67 with PG / IP65 with plug					
Protection class:	III					
Process connection:	G1/4 M, G1/2 M manometer connection or quasi flush diaphragm					
Dimensions:	Ø32 x approx. 120 mm (with plug connector)					
Weight:	250 g					
Measuring ranges [bar]:	-1... 0	-1...+1	0.2	0.4		
Overpressure [bar]:	2.5	2.5	2.5*	2.5		
Measuring ranges [bar]:	0.6	1	2	5	10	50
Overpressure [bar]:	2.5	3	4	7	15	75
Measuring ranges [bar]:	100	200	400	600	800	
Overpressure [bar]:	150	300	500	700	1000	
Linearity error:	≤±0.5 % f. s. (Option: ≤±0.2 % f. s.)					

Electrical connection:	Plug 4-pin, DIN EN 175 301-803-A (prev. DIN 43650)
Temperature influence:	≤±0.2 % f. s. / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	≤±0.1 % v. f. s.
Temperature range:	
Medium:	-25 °C... +100 °C
Electronics:	-25 °C... +80 °C
Storage:	-40 °C... +100 °C
Output signals:	4...20 mA (2 wire) 0...10 V DC (3 wire)
Power supply:	8... 30 V DC, 13... 30 V DC at 0... 10 V, reversed polarity protection (SELV, PELV)
Power consumption:	max. 25 mA at current output max. 5 mA at voltage output
Load:	≤(U _B -10 V) / 20 mA
Delay:	≤1 ms
Accessories:	Damping screw to limit pressure peaks
Approval:	GL optional

Dimensions (mm / inch)



Dimensions UPA2 G1/4



Electrical Connection

Connection	Current output 4... 20 mA (2-wire)			Voltage output 0... 10 V (3-wire)		
	Plug	Cable	GL cable	Plug	Cable	GL cable
+ Supply	1	brown	blue 1	1	brown	blue 1
- Supply	2	white	blue 2	2	blue	blue 2
+ Signal	---			3	white	white 1
- Signal	---			---		

Order Numbers

Standard pressure reducer DIN 43650, 4... 20 mA				
Measuring ranges [bar] relative pressure	Overpressure [bar]	Order No.		
		G1/2", flush	G1/4" M	
10	15	0431-032	0431-017	
50	75	0431-043	0431-441	
100	150	0431-036	0431-315	
200	300	0431-042	0431-010	
400	600	0431-038	0431-314	
600	780	0431-464	0431-238	

Further measuring ranges on request

Accessories

Order Number	Description
926-0420	Plug connector, 3-pin + PE, DIN EN 175 301-803-A (prev. DIN 43650)
907-0185	Plug connector, 5 pin M12 x 1, elbow
907-0177	Plug connector, 5 pin M12 x 1, straight
908-0361	Plug connector, 5 pin M12 x 1 incl. 2 m cable
998-9991	Manufacturer test certificate O DIN 55350 part 18 4.2.1
998-9992	Manufacturer test certificate M DIN 55350 part 18 4.2.2

Electronic Pressure Transducers (Ex)

UPA2-Ex

Electronic pressure transducer for applications in explosion-proof areas, with internal or flush stainless steel diaphragm, linearity error 0.5% and 1% f. s.

Features

Intrinsically safe EEx ibIIC T5/T6
High long-term stability
High shock and vibration stability
Flush diagram version available

Measuring ranges

0...1 bar to 0...600 bar gauge

Applications

Process and chemical technology
Machine and apparatus engineering

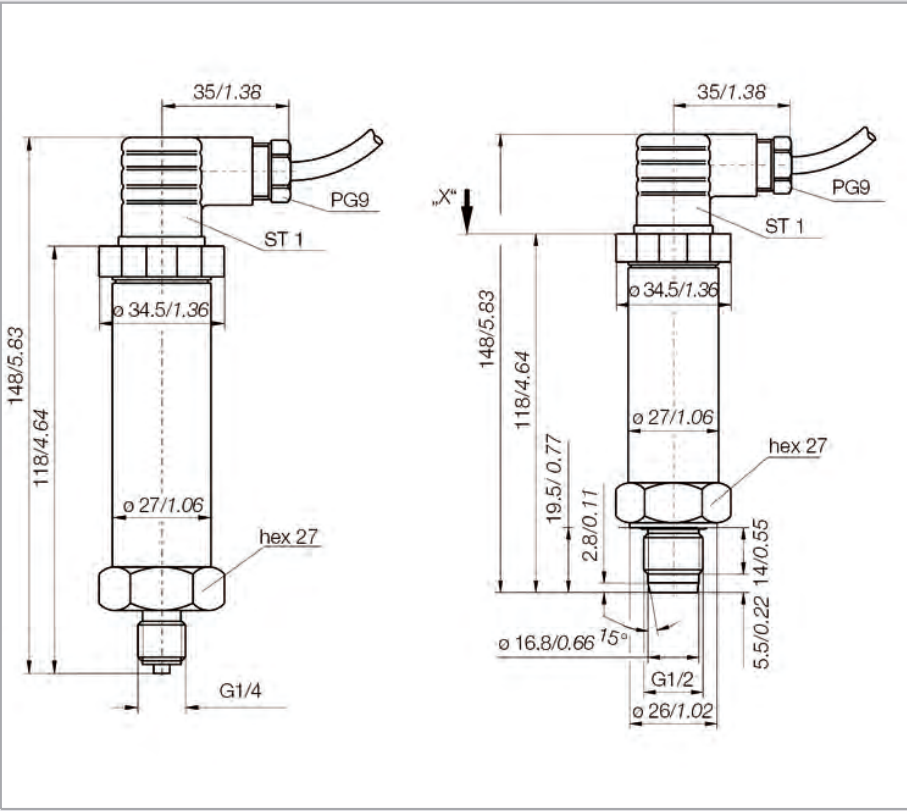


Technical Data

Sensor element:	Polysilicone measuring cell				
Materials:					
Wetted parts:	Stainless steel, mat. no. 1.4571				
Electronics housing:	Stainless steel, mat. no. 1.4301				
Seals:	FKM, EPDM, sealing cone				
System of protection:	IP65				
Protection class:	---				
Process connection:	G1/4 M, G1/2 M manometer connection or flush diaphragm with sealing cone 1/4" NPT M, 1/2" NPT M				
Dimensions:	ø27 x approx. 115 mm (without plug connector)				
Weight:	approx. 250 g				
Measuring ranges [bar]:	1	2	5	10	50
Proof pressure [bar]:	6	6	14	20	120
Measuring ranges [bar]:	100	200	400	600	
Proof pressure [bar]:	200	500	640	900	
Linearity error:	≤±0.5 % v. f. s.				

Electrical connection:	PG7 incl. 1.5 m cable; plug 3-pin, DIN EN 175 301-803-A (prev. DIN 43650)
Temperature influence:	≤±0.3 % f. s. / 10K
Compensation range:	0 °C... +50 °C
Repeatability:	≤±0.1 % v. f. s.
Temperature range:	
Medium:	-20 °C... +50 °C at 0.9 W (T6 EExib)
Electronics:	-20 °C... +60 °C at 0.6 W (T6 EExib)
Storage:	-40 °C...+100 °C
Output signal:	4... 20 mA (2-wire)
Power supply:	12... 26 V DC unregulated max. 10 % residual ripple reversed polarity protected acc. to ATEX
Power consumption:	approx. 25 mA at current output
Load:	≤(U _b -11.2 V) / 20 mA
Delay:	≤5 ms

Dimensions (mm / inch)



Electrical Connection

Connection	Current output 4... 20 mA (2-wire)	
	Plug	Cable
+ Supply	1	brown
- Supply	2	white
+ Signal	---	---
- Signal	---	---

Order Numbers

Standard pressure transducer DIN 43650, 4...20 mA, G1/4 AG		
Measuring ranges [bar] rel. pressure	Overpressure [bar]	Order No.
10	20	0431-124
50	120	0431-173
100	200	0431-460
200	500	0431-313
400	640	0431-122
600	900	0431-198

others measuring ranges on request

Electronic Pressure Transducer

Series 600

for OEM applications

Features

- Compact size
- Rugged stainless steel construction
- Ceramic sensor technology

Measuring ranges

0...10 bar to 0...400 bar

Applications

- OEM applications
- Stationary and mobile hydraulics
- Pneumatics



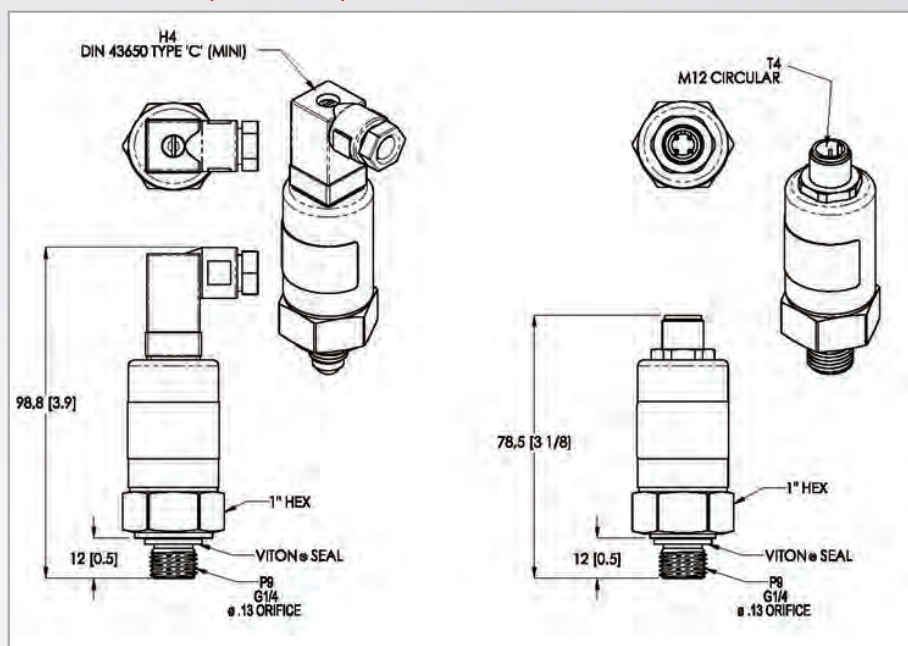
Technical Data

Linearity error:	≤±1 % f.s. ≤±0.5 % typical f.s.
Typical Life Cycle:	100 million cycles
Proof Pressure:	2 times rated pressure, or 600 bar max., whichever is less.
Power Supply:	8...30 V DC, reversed polarity protection (SELV, PELV)
Output:	4-20 mA (2-wire), other on request
Wetted Parts:	316 Stainless steel, ceramic and FKM O-ring
Protection class:	NEMA 4X IP65, IP67 (based on electrical connection)*
Process Connection:	G1/4", other on request

Electrical Connection:	M12x1-plug DIN-EN 175 301-803-C (prev. DIN43650)
Temperature Ranges:	
Media:	-40°C to +85°C
Electronics:	0°C to +55°C
Storage:	-40°C to +85°C
Temperature influence:	±0,06% FS/K over operating temperature range
Vibration:	15 g, 10-2000 Hz, MIL-STD 202
Shock:	50 g, 11 ms, MIL-STD 202 Method 213, Cond. G.,
Weight:	145 grams

* Mating connector must be properly installed to preserve enclosure rating

Dimensions (mm / inch)



Wiring code

Electrical Termination	Current Output	
	DIN-C	M12
1	Power Supply	+ Excitation
2	Not used	Common
3	Common	Not used
4	Case Ground	Case Ground

Order Numbers

Pressure range [bar] relative pressure	Electrical Connection DIN43650 C	Electrical Connection M12x1
10	0437-010	0437-018
20	0437-011	0437-019
50	0437-012	0437-020
60	0437-013	0437-021
100	0437-014	0437-022
200	0437-015	0437-023
250	0437-016	0437-024
400	0437-017	0437-025

Electr. Dual Pressure Switch

Switch 2000

Features

7-segment LED display, microprocessor controlled, self monitoring with error display, linearity error 0.5 % f.s., ceramic sensor

All parameters are configured by keypad, adjustable keypad lock, rugged construction, vibration and shock-proof, long-term stability

Measuring ranges

0...10 bar to 0...600 bar gauge

Applications

OEM applications in hydraulic and pneumatic systems, press construction, lubricant monitoring, apparatus engineering, machine/machine tool industry, automobile industry, injection molding machines

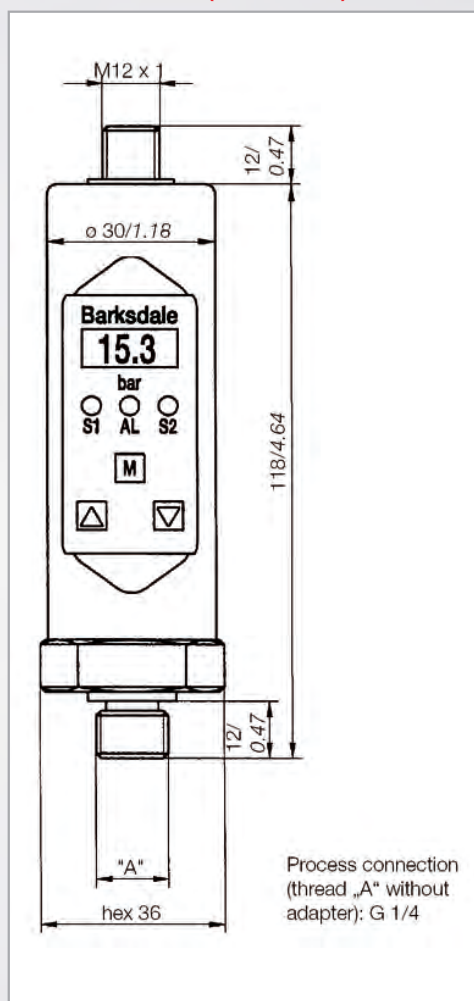


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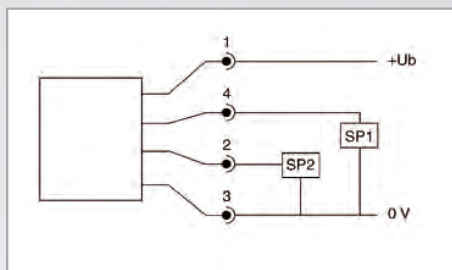
Measuring element:	Ceramic sensor optional: piezoresistive sensor; at 600 bar: only piezoresistive sensor					
Materials: Wetted parts:	Stainless steel, mat. no. 1.4301, ceramic Al ₂ O ₃ 96%					
Electronics housing: Seals:	Aluminum die-cast FKM					
Operating elements:	3 easy-response pushbuttons					
System of protection:	IP65					
Protection class:	III					
Process connection:	G1/4 M					
Dimensions:	36 x 130 mm (without plug connector)					
Weight:	approx. 200 g					
Measuring ranges [bar]:	10	50	100	200	400	600
Proof pressure [bar]:	15	75	150	300	600	800
Linearity error:	< ±0.5 % f. s. at +25 °C					
A/D converter: Resolution:	10 bit (1024 steps per measuring span)					
Scanning rate:	200 / s					
Electrical connection:	Plug M12 x 1, 4/5-pin					
Temperature influence:	< ±0.2 % f. s. / 10K					
Compensation range:	-10 °C... +70 °C					
Repeatability:	±0.1 % v. f. s.					
Temperature range: Medium:	-25 °C... +100 °C					
Electronics:	-10 °C... +70 °C					
Storage:	-30 °C... +80 °C					

Power supply:	15... 32 V DC, reversed polarity protected (SELV, PELV)
Digital display: Display range: Display rate:	3-digit 7-segment LED display, red, digit height 10 mm -1 ... 999 20 / s
Error display:	LED yellow and alphanumeric display
Power consumption:	approx. 50 mA (without load)
Analog output: Current output: Load:	4...20 mA max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub = 24 V DC
Load influence: Scanning rate: Voltage output: Rating: Adjustment range:	0.3 % / 100 Ohm 5 ms 0...10 V DC max. 10 mA 25 %... 100 % f. s.
Transistor switching outputs PNP: Switching function:	Normally open/normally closed, standard / window mode and diagnosis function adjustable
Adjustment range for switching point and hysteresis: Switching frequency: Load: Delay: Status display(s):	0 %... 125 % f. s. max. 100 Hz max. 500 mA, short-circuit proof 0.0 s ... 9.9 s adjustable LED(s) green
Accessories:	Adapter for pressure switch adjustment, damping screw, plug connector
Approvals:	cULus: file no. E42816, only for devices with piezoresistive sensor

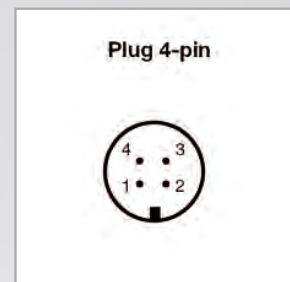
Dimensions (mm / inch)



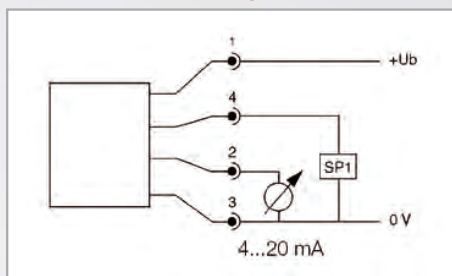
Connection Diagram 1



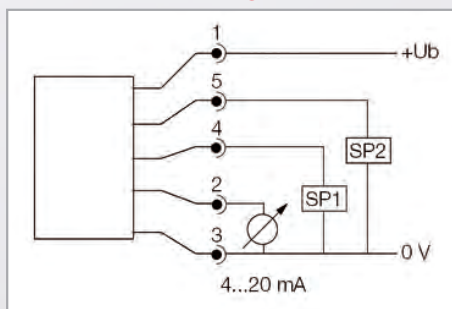
Plug



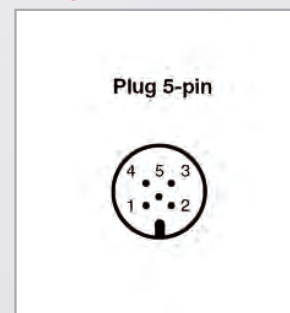
Connection Diagram 2



Connection Diagram 3



Plug 2



Order Code

Pressure range	0...10 bar	0...50 bar	0...100 bar	0...200 bar	0...400 bar	0...600 bar
2 switching outputs	0428-017	0428-018	0428-019	0428-020	0428-021	0428-022
1 switching output 1 analog output 4... 20 mA	0428-127	0428-128	0428-129	0428-130	0428-131	0428-132
2 switching outputs 1 analog output 4... 20 mA	0428-393	0428-394	0428-395	0428-396	0428-397	0428-398

Further measuring ranges on request

Accessories

Order Number	Description
0499-016	Adapter G1/4 IG - G1/4 male thread for optimum alignment of pressure switch
901-0677	Damping screw with 0.2 mm restriction against quick pressure changes and high pulsation rate
907-0357	Plug connector M12 x 1, 4-pin, with screw terminals, angled
907-0344	Plug connector M12 x 1, 4-pin, with screw terminals, straight

Electronic Pressure Switch

UDS1V2

Electronic pressure switch for pressure control with internal stainless steel diaphragm, with 2 solid state outputs or 1 solid state output with adjustable hysteresis.

Features

- Teach & Go
- Compact construction
- Housing 320° rotatable

Measuring ranges

0 ...10 bar to 0...600 bar

Applications

OEM applications in hydraulic and pneumatic systems, press construction, lubricant monitoring, apparatus engineering, machine/machine tool industry, automobile industry, injection molding machines



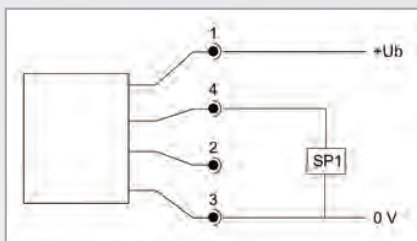
Technical Data

Sensor element:	Ceramic sensor optional: piezoresistive sensor; at 600 bar: only piezoresistive sensor
Materials:	
Wetted parts:	Steel, pass., Al2O3
Electronics housing:	PA 6.6
Seals:	FKM
Operating elements:	2 easy response push buttons
System of protection:	IP65
Protection class:	III
Process connection:	G 1/4" AG Others on request
Dimensions:	approx. Ø 28 x 100 mm (without plug connector)
Measuring ranges:	0...10 bar to 0...600 bar 0...150 to 0...9000 PSI
Electrical connection:	Plug M12x1, 4-pin

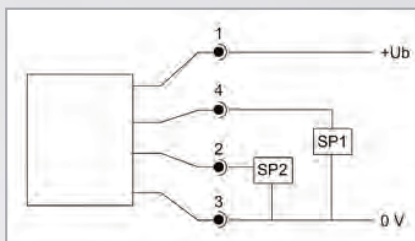
Temperature influence:	± 0.2 % f.s./10K
Compensation range:	-10 °C...+70 °C
Repeatability:	+/- 1 % f.s.
Temperature range:	
Medium:	-25 °C...+100 °C
Electronics:	-25 °C...+80 °C
Storage:	-30 °C...+80 °C
Power supply:	15...32 V DC, reversed polarity protected (SELV, PELV)
Transistor switching outputs PNP:	
Adjustment range for switching point- and hysteresis*:	0 % ...100 % f.s.
frequency:	Max. 100 Hz
current rating:	Max. 200 mA, short-circuit proof
Vibration	10 g/20...2000 Hz
Shock	100 g/11 ms

* only 1SP version (2SP version 15% hysteresis)

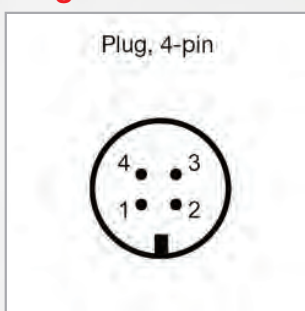
Connection Diagram 1



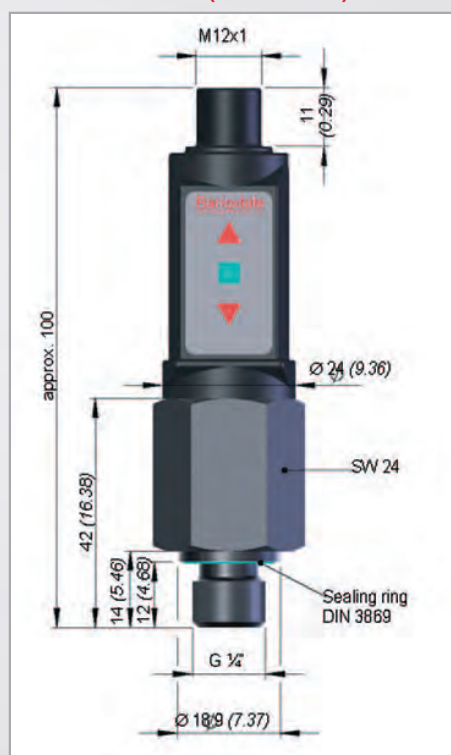
Connection Diagram 2



Plug



Dimensions (mm / inch)



Order Numbers

Pressure range	0...10 bar	0...100 bar	0...400 bar	0...600 bar
1 switching output with adjustable hysteresis	0421-060	0421-061	0421-062	0421-063
2 switching outputs with 15% hysteresis	0421-064	0421-065	0421-066	0421-067

Accessories

Order Number	Description
907-0357	Plug connector M12x1, 4-pin, with screw terminals, angled
907-0344	Plug connector M12x1, 4-pin, with screw terminals, straight

Electr. Dual Pressure Switch

UDS7

Electronic pressure switch for pressure control with internal or flush stainless steel diaphragm, digital display, 2 solid state contacts or solid state plus 1 analog output, linearity error 0.5 % f. s.

Features

Alphanumeric 4-digit dot-matrix display, microprocessor controlled, self monitoring with error display, scalable analog output. All parameters are configured by keypad, adjustable keypad lock, various access levels, rugged stainless steel construction, optional: rotatable display

Measuring ranges

0...1 bar 0...10 bar, absolute pressure
-1... 0 bar; 0...0.2 bar to 0... 600 bar; relative pressure

Applications

Hydraulic and pneumatic systems, process / chemical technology, test bed and apparatus construction, automation

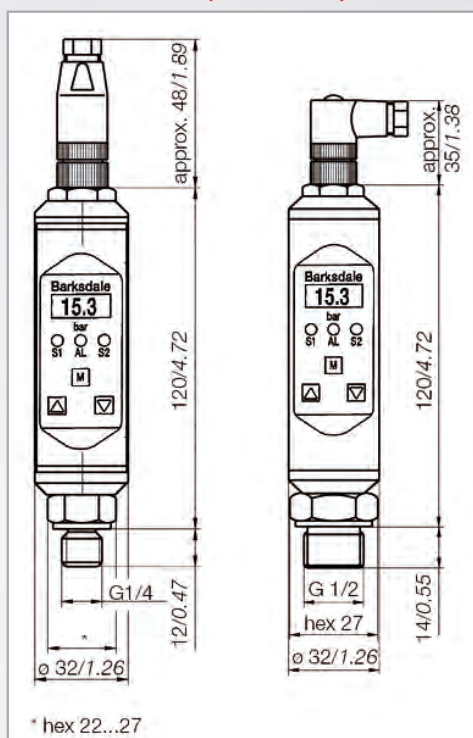


Technical Data

Sensor element:	Piezoresistive silicon measuring cell							
Materials:								
Wetted parts:	Stainless steel, material no. 1.4301							
Electronics hous.:	Stainless steel, material no. 1.4571							
Seals:	FKM							
Operating elements:	3 easy-response pushbuttons							
System of protection:	IP67 with PG / IP65 with plug							
Protection class:	III							
Process connection:	G 1/4 M; G 1/2, flush diaphragm for viscous media							
Dimensions:	32 mm x 120 mm (without plug connector)							
Weight:	approx. 350 g							
Measuring ranges [bar]:	0.2	0.4	0.6	1	2	5	10	50
Proof pressure [bar]:	2.5	2.5	2.5	3	4	7	15	75
Measuring ranges [bar]:	100	200	400	600	-1			
Proof pressure [bar]:	150	300	600	800	2.5			
Linearity error:	±0.5 % f. s. at 25 °C special calibration Option: ±0.25 % v. f. s.							
A/D converter:								
Resolution:	12 bit (4096 steps per measuring span)							
Scanning rate:	100 / s							
Electrical connection:	Plug M12 x 1, 5-pin							
Temperature influence:	±0.2 % f. s. / 10K							
Compensation range:	-10 °C... +70 °C							
Repeatability:	±0.1 % f. s.							

Temperature range:	
Medium:	-25 °C... +100 °C
Electronics:	-10 °C... +70 °C
Storage:	-30 °C... +80 °C
Power supply:	18... 32 V DC, reversed polarity protected (SELV, PELV)
Digital display:	4-digit dot-matrix display, digit height 5 mm, green
Display range:	-999... +999
Display rate:	5 / s
Delay:	0.0 s ... 9.9 s adjustable
Brightness:	20... 100 % adjustable
Error display:	LED red and alphanumeric display
Power consumption:	approx. 40 mA at $U_b = 24$ V DC (without load)
Analog output:	
Current output:	4...20 mA
Load:	max. $R_L = (U_b - 12 \text{ V}) / 20 \text{ mA}$ $R_L = 600 \text{ Ohm}$ at $U_b = 24 \text{ V DC}$
Load influence:	0.3 % / 100 Ohm
Voltage output:	0...10 V DC
Rating:	max. 10 mA, short-circuit proof
Adjustment range:	25 %... 100 % f. s.
Transistor switching outputs PNP:	
Switching function:	Normally open / normally closed, standard / window mode and diagnosis function adjustable
Adjustment range:	0 %... 125 % f. s.
Switching frequ.:	max. 100 Hz
Current rating:	max. 500 mA, short-circuit proof
Delay:	0.0 s ... 9.9 s adjustable
Display:	LED green
Accessories:	Damping screw, plug connector
Approval:	GL, cULus: file no. E42816

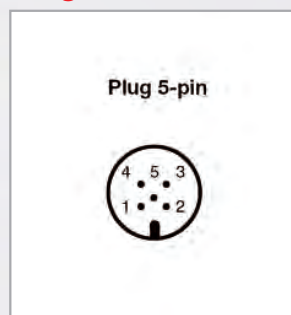
Dimensions (mm / inch)



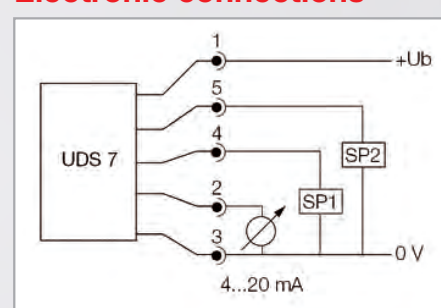
Connection chart Plug 1 (standard)

Plug M 12 x 1, 5-pin	Model with 2 switching outputs	Model with 2 switching outputs and 1 analog output
Pin 1	+Ub 18... 32 V DC	+Ub 18... 32 V DC
Pin 2	SP2 0.5 A max.	analog 4... 20 mA / 0...10 V DC
Pin 3	0 V	0 V
Pin 4	SP1 0.5 A max.	SP1 0.5 A max.
Pin 5	---	SP2 0.5 A max.

Plug



Electronic connections



Order Numbers

Pressure ranges	Process connection: G1/4 M		Process connection: G1/2, M, quasi flush	
	4...20 mA	0...10 V DC	4...20 mA	0...10 V DC
0... 1 bar abs.	0427-488	0427-729	---	---
0... 5 bar abs.	0427-489	0427-730	---	---
0... 10 bar abs.	0427-490	0427-731	---	---
0... 10 bar relative	0427-491	0427-735	0427-509	0427-736
0... 50 bar relative	0427-492	0427-737	0427-510	0427-738
0... 100 bar relative	0427-493	0427-739	0427-511	0427-740
0... 200 bar relative	0427-494	0427-741	0427-512	0427-742
0... 400 bar relative	0427-495	0427-743	0427-513	0427-744
0... 600 bar relative	0427-496	0427-745	0427-514	0427-746

Accessories

Order Number	Description
0499-016	Adapter G1/4 IG - G1/4 male thread for optimum alignment of pressure switch
906-0052	Adapter G1/4 IG - G1/2 male thread manometer connection
0499-002	Wall mounting brackets, stainless steel
901-0677	Damping screw with 0.2 mm restriction against quick pressure changes and high pulsation rate

Electr. Dual Pressure Switch (Ex)

UDS7 Ex

Electronic pressure switch for pressure control in explosion-proof areas with internal stainless steel diaphragm, digital display, 2 solid state contacts accord. to Namur DIN 19234 and 1 analog output, linearity error 0.5 % f. s.

Features

Intrinsically safe accord. to ATEX, alphanumeric 4-digit LCD display, microprocessor controlled, self monitoring with error display, all parameters are configured by keypad, adjustable keypad lock, various access levels, rugged stainless steel construction

Measuring ranges

0...1 bar 0...10 bar, absolute pressure
-1... 0 bar; 0...0.2 bar to 0... 600 bar; relative pressure

Applications

Gas compressors, process / chemical technology
test bed and apparatus engineering,
injection moulding machines

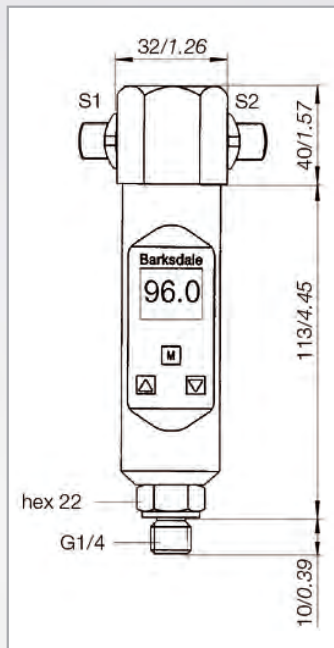


Technical Data

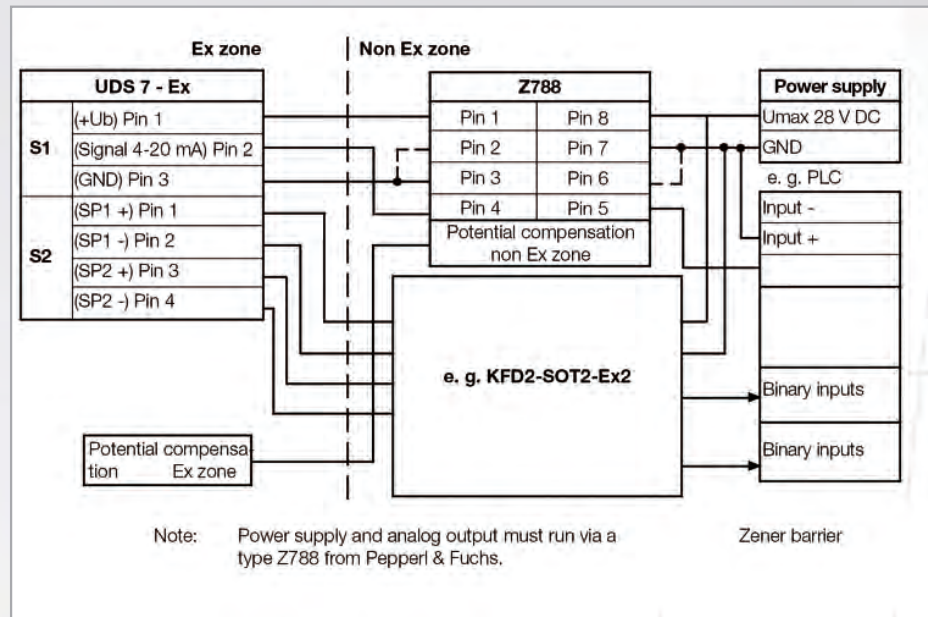
Sensor element:	Piezoresistive silicon measuring cell				
Materials:					
Wetted parts:	Stainless steel, mat. no. 1.4301				
Electronics housing:	Stainless steel, mat. no. 1.4571				
Seals:	FKM (standard), EPDM				
Operating elements:	3 easy-response pushbuttons				
System of protection:	IP65 plug				
Protection class:	---				
Process connection:	G1/4 M				
Dimensions:	32 x 163 mm				
Weight:	approx. 250 g				
Measuring ranges [bar]:	10	50	100	200	400
Proof pressure [bar]:	15	75	150	300	600
Linearity error:	±0.5 % v. f. s. at 25 °C				
A/D converter:					
Resolution:	12 bit (4096 steps per meas. span)				
Scanning rate:	100 / s (for peak value memory)				
Electrical connection:	Plug M12 x 1; 4-pin, female / male thread				
Temperature influence:	±0.2 % f. s. /10K (20 °C)				
Compensation range:	-10 °C... +70 °C				
Repeatability:	±0.1 % v. f. s.				
Temperature range:					
Medium:	0 °C... +60 °C				
Operating range:	0 °C... +60 °C				
Storage:	-10 °C... +65 °C				

Max. ambient temperature	-20 °C... +80 °C
Power supply:	18... 28 V DC, intrinsically safe acc. to ATEX
On-status display:	4-digit LCD display, digit height 10 mm
Display rate:	5 / s
Delay:	0.0 s ... 9.9 s adjustable
Error display:	on LCD display
Power consumption:	approx. 40 mA at Ub = 24 V DC
Analog output:	
Current output:	4...20 mA
Load:	max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub = 24 V DC
Load influence:	0.3 % / 100 Ohm
Adjustment range:	25 %... 100 % f. s.
Transistor switching outputs:	
Switching function:	acc. to Namur DIN 19234 Normally open / normally closed, standard / window mode and diagnosis function adjustable
Adjustment range:	0 %... 125 % f. s.
Switching frequency:	max. 100 Hz
Delay:	0.0... 9.9 s adjustable
Status display:	on LCD display
Item designation	II 1 / 2 G EEx ia IIC T4 category 1, 2
Certificate no.:	TÜV 02 ATEX 1879X

Dimensions (mm / inch)



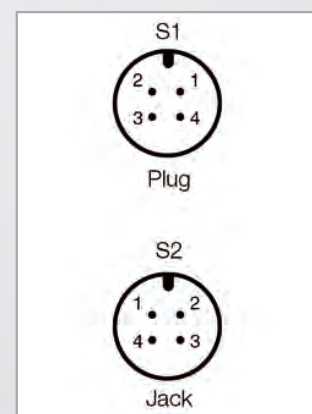
Electronic connections



Order Numbers

2 solid state outputs acc. to Namur DIN 19234, analog output 4... 20 mA, plug /load M12 x 1, 4-pin		
Measuring ranges	Process connection: G1/4 M	Process connection: G1/2 M
0... 10 bar relative	0427-818	0427-879
0... 50 bar relative	0427-819	0427-880
0... 100 bar relative	0427-820	0427-881
0... 200 bar relative	0427-821	0427-882
0... 400 bar relative	0427-822	0427-883
0... 600 bar relative	0427-866	0427-884

Plug UDS7-Ex



Accessories

Order Number	Description
0499-016	Adapter G1/4 IG - G1/4 male thread for optimum alignment of pressure switch
0499-002	Wall mounting brackets, stainless steel
901-0677	Damping screw with 0.2 mm restriction against quick pressure changes and high pulsation rate
907-0357	S1 plug M12 x 1, 4-pin, female thread, with screw terminals
907-0418	S2 plug M12 x 1, 4-pin, male thread, with screw terminals
909-0482	Zener barrier type Z788 with potential compensation
909-0483	Isolation amplifier type KFD2-SOT2-Ex2

Electr. Pressure Switch

UDS3V3

Electronic pressure switch for pressure control with internal stainless steel diaphragm, digital display, 4 switching outputs and 1 analog output, linearity error f. s.

Features

8-digit 14-segment LCD display with Bargraph and trend indication, microprocessor controlled, self monitoring, all parameters are configured by keypad, display unit selectable, adjustable keypad lock, high accuracy, quick scanning rate (1000/s)

Measuring ranges

0...1 bar 0...10 bar, absolute pressure
-1...0 bar to 0...600 bar gauge

Applications

OEM applications
hydraulic and pneumatic systems,
heavy industry and plant engineering,
automobile industry

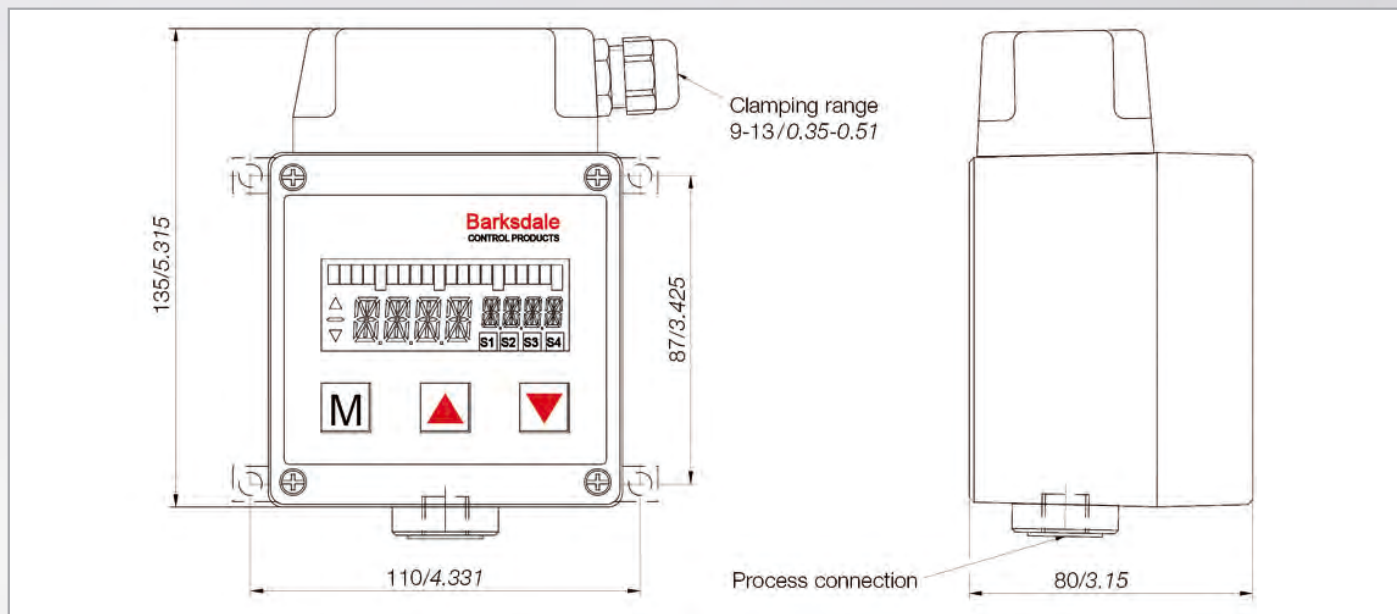


Technical Data

Sensor element:	Piezoresistive silicon measuring cell					
Materials:						
Wetted parts:	Stainless steel, material no. 1.4301					
Electronics housing:	Cast aluminum G AL SI 12					
Seals:	FKM, optionally: EPDM					
Keypad:	Polyester					
Operating elements:	Keypad with easy-response pushbuttons					
System of protection:	IP65					
Protection class:	I					
Process connection:	G1/4 female thread, bottom entry Option: 1/4" NPT female thread					
Dimensions:	100 x 135 x 80 mm (W x H x D)					
Weight:	approx. 1080 g					
Measuring ranges [bar]:	10	50	100	200	400	600
Proof pressure [bar]:	15	75	150	300	600	800
Linearity error:	±0.5 % f. s. at 25 °C					
A/D converter:						
Resolution:	12 bit (4096 steps per measuring span)					
Scanning rate:	1000 / s					
On-status display:	8-digit 14-segment LCD display, digit height 12 mm, green					
Bargraph:	20-segment for current value					
Trend arrows:	last changes					
Display range:	-9999... 9999					
Display rate:	4 / s					
Display unit:	bar / psi / psi x 10 / hPa / mbar switchable					
Electrical connection:	14-pin screw terminal for 1.5 mm2 AWG14, plug-in type					
Cable gland:	1 x PG13.5 side entry					

Temperature influence:	±0.2 % v. f. s. / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	±0.1 % v. f. s.
Temperature range:	
Medium:	-25 °C... +100 °C
Electronics:	-10 °C... +70 °C
Storage:	-30 °C... +80 °C
Power supply:	18... 32 V DC, reversed polarity protected (SELV, PELV)
Power consumption:	approx. 350 mA at Ub = 24 V DC (without load)
Analog output:	
Current output:	4...20 mA
Load:	max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub = 24 V DC
Load influence:	0.3 % / 100 Ohm
Scanning rate:	1 ms
Voltage output:	0...10 V DC
Rating:	max. 10 mA, short-circuit proof
Adjustment range:	25 %... 100 % f. s.
4x relay output(s) - change-over contacts (SPDT):	
Switching voltage:	max. 120 V DC / 250 V AC
Switching power:	max. 12 W / 1250 VA
Cycles:	1 mio. at 24 V DC / 2 A
Switching rate:	max. 20 / s
Delay:	0.0 s ... 9.9 s adjustable
Operation time:	1 ms
Status display:	S1... S4 on LCD display
Accessories:	Damping screw 0.2 mm; mounting traverse; vibration damper
Approval:	cULus: file no. E42816

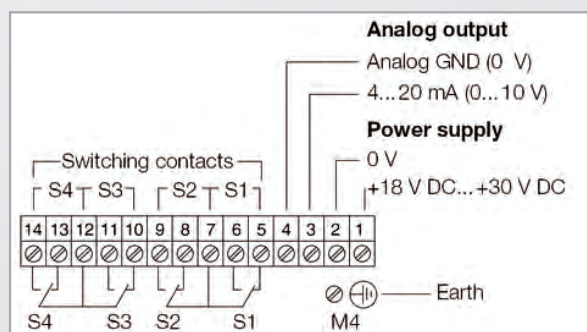
Dimensions (mm / inch)



Order Numbers

Pressure switch with digital display and 4 relays, G1/4 female		
Measuring ranges [bar]	Analog Output	Order No.
10	---	0423-129
10	4...20 mA	0423-117
10	0...10 V	0423-118
50	---	0423-130
50	4...20 mA	0423-119
50	0...10 V	0423-120
100	---	0423-131
100	4...20 mA	0423-121
100	0...10 V	0423-122
200	---	0423-132
200	4...20 mA	0423-123
200	0...10 V	0423-124
400	---	0423-133
400	4...20 mA	0423-125
400	0...10 V	0423-126
600	---	0423-134
600	4...20 mA	0423-127
600	0...10 V	0423-128

Electronic connections



Accessories

Order Number	Description
901-0677	Damping screw M4 x 0.2 for UDS 3, UDS 7, Switch 2000, material: brass
903-0681	Mounting traverse (1 set = 2 pcs)
914-0107	Vibration damper (1 pack = 4 pcs)

Electronic Display

UAS7

Trip amplifier for all physical quantities with digital display,
2 switching outputs and
1 analog output,
Linearity error 0.2 % f. s.

Features

4-digit 7-segment LED display, microprocessor-controlled,
self monitoring, all parameters are configured by
Keypad, display unit selectable, adjustable keypad lock, high
accuracy, quick scanning rate (1 ms)

Display range

freely scalable: -9,999...+9,999

Applications

OEM applications,
Hydraulics and pneumatics,
test bed and apparatus engineering,
heavy industry

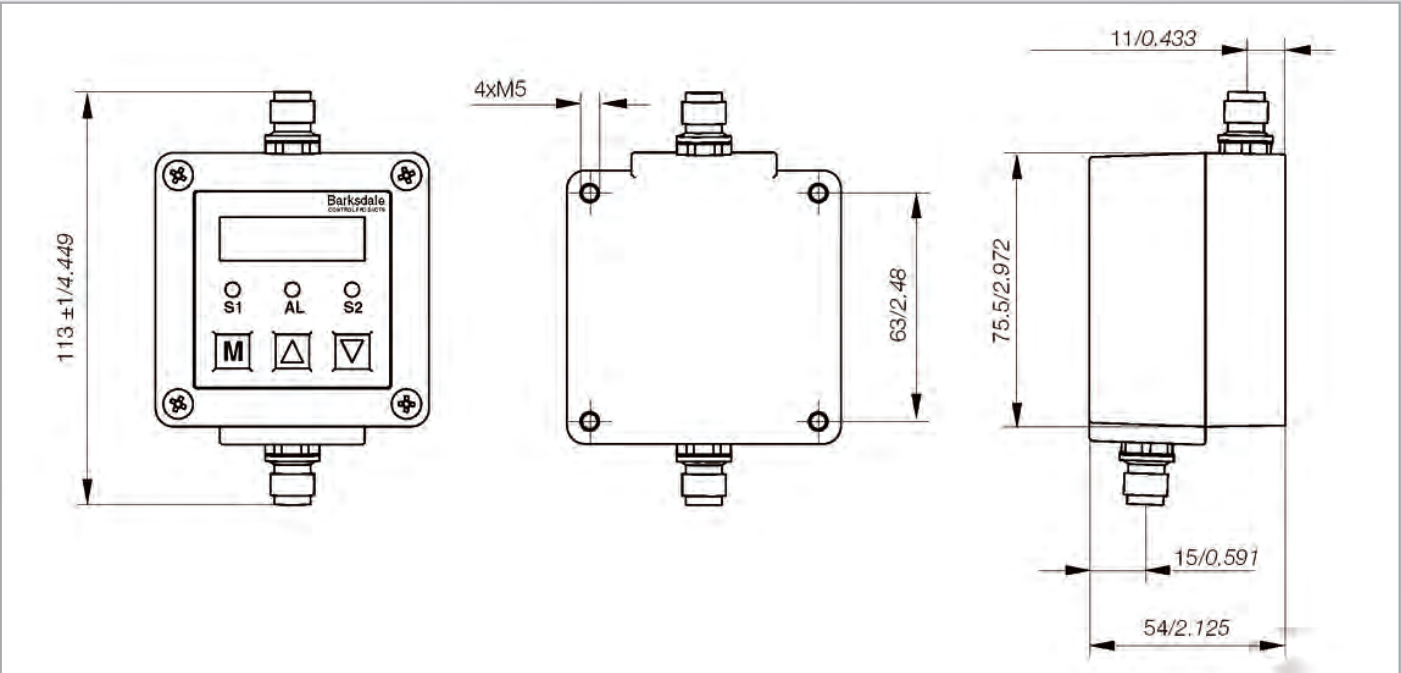


Technical Data

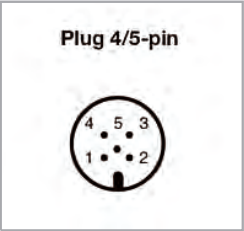
Measuring principle:	Amplifier with 10 bit A/D converter
Materials:	
Electronics housing:	Aluminum die-cast
Housing seal:	NBR
Keypad:	Polyester
Operating elements:	Keypad with easy-response pushbuttons
Protection system/class	IP65 / III
Dimensions:	75 x 75 x 55 mm (W x H x D)
Weight:	approx. 330 g
Analog measuring inputs:	
Current input:	4... 20 mA
Voltage input:	0... 10 V DC
Linearity error:	< ±0.2 % v. f. s. at 25 °C
A/D converter:	
Resolution:	10 bit (1024 steps per measuring span)
Scanning rate:	200 / s
On-status display:	4-digit 7-segment LED display, red, digit height 10 mm
Display range:	-9,999... +9,999
Display rate:	2 / s
Display unit:	all technical units
Sensor connection:	Plug M12 x 1, 4-pin
Electrical connection:	Plug M12 x 1, 4-pin or 5-pin

Temperature influence:	< 0.05 % v. f. s. / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	≤±0.05 % v. f. s.
Temperature range:	
Electronics:	-10 °C... +70 °C
Storage:	-30 °C... +80 °C
Power supply:	15... 32 V DC, reversed polarity protected (SELV, PELV)
Power consumption:	approx. 50 mA (without load)
Analog output:	
Current output:	4...20 mA
Load:	max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub = 24 V DC 0.3 % / 100 Ohm
Load influence:	
Scanning rate:	5 ms
Voltage output:	0...10 V DC
Rating:	max. 10 mA
Adjustment range:	25 %... 100 % f. s.
Transistor switching outputs PNP:	
Switching function:	Normally open / normally closed, standard / window mode and diagnosis function adjustable
Adjustment range:	0 %... 125 % f. s.
Switching frequency:	max. 100 Hz
Current rating:	max. 500 mA, short-circuit proof
Delay:	0.0 s ... 9.9 s adjustable
Status display(s):	LED(s) green
Accessories:	Plug connector

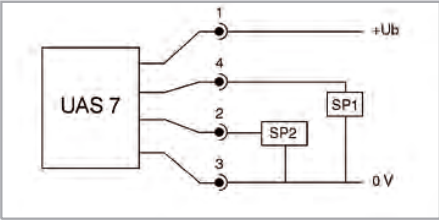
Dimensions (mm / inch)



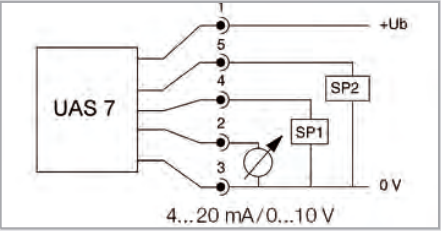
Plug



Connection Diagram 1



Connection Diagram 2



Sensor

M12 x 1

1 = +Ub
2 = Signal
3 = -Ub (*)

(*) Pin 2 is not needed with 2-wire connection.

Diagram of the M12 x 1 sensor connector. The pins are numbered 1, 2, 3.

Analog measuring input

Optional:
Current input: 4...20 mA
Voltage input: 0...10 V DC

Order Numbers

Electronic trip amplifier with 2 PNP outputs		
Analog Input	Analog Output	Order Number
4...20 mA	---	0001-004
4...20 mA	4...20 mA	0001-002
4...20 mA	0...10 V	0001-003
0...10 V	---	0001-007
0...10 V	4...20 mA	0001-005
0...10 V	0...10 V	0001-006

Electronic Display

UAS3V3

Trip amplifier for all physical quantities with digital display, 4 switching outputs and 1 analog output.
Accuracy 0.2 % v. M. E.

Features

8-digit 14-segment LCD display with bargraph and trend indication, microprocessor controlled, self monitoring, all parameters are configured by keypad, display unit selectable, adjustable keypad lock, high accuracy, quick scanning rate (1000/s)

Display range

freely scalable: -9,999...+9,999

Applications

OEM applications,
Hydraulics and pneumatics,
test bed and apparatus engineering,
heavy industry

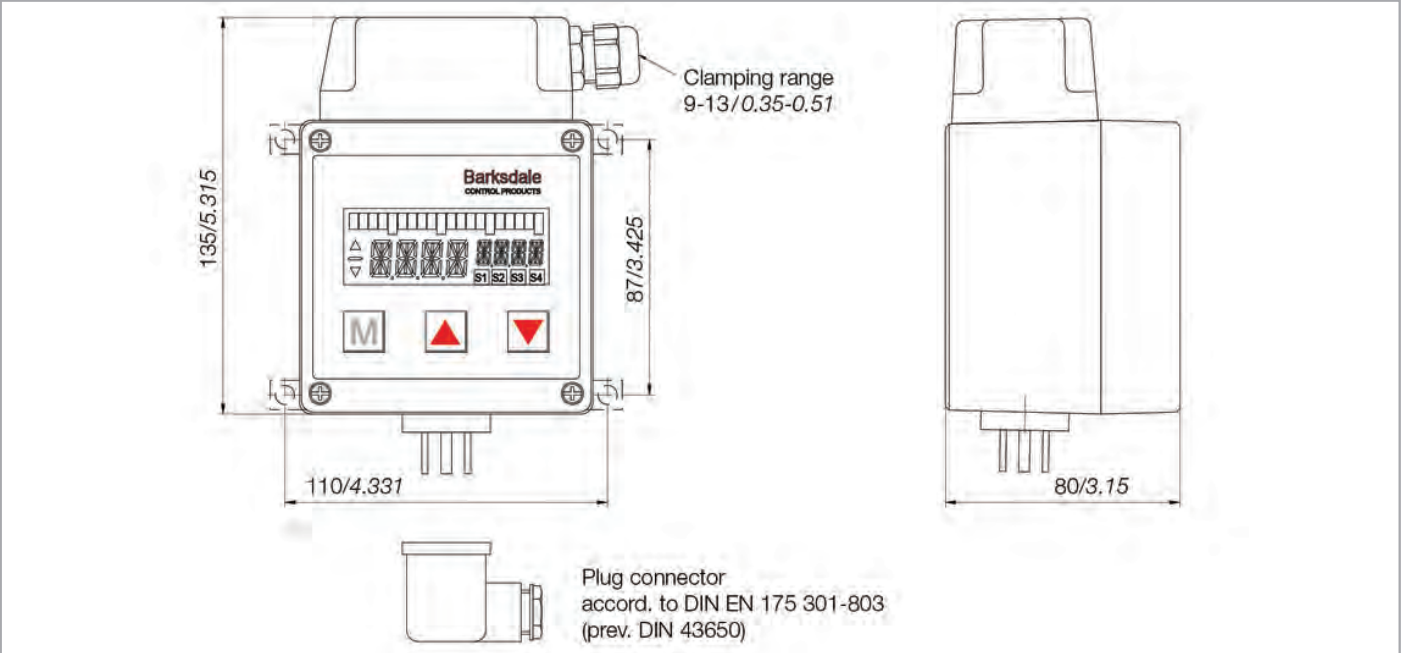


Technical Data

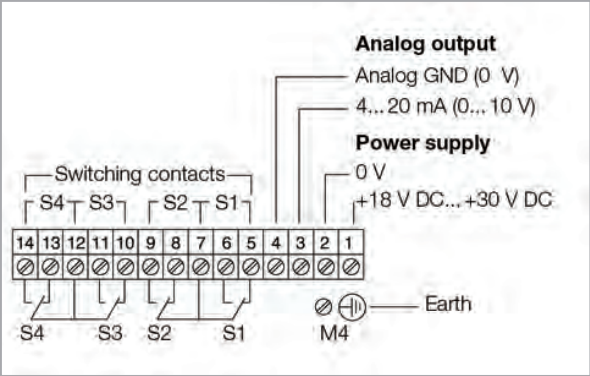
Measuring principle:	Amplifier with 12 bit A/D converter
Materials:	
Electronics housing:	Cast aluminum G AL SI 12
Housing seal:	CR
Keypad:	Polyester
Operating elements:	Keypad with easy-response pushbuttons
System of protection:	IP65
Protection class:	I
Dimensions:	100 x 135 x 80 mm (W x H x D)
Weight:	approx. 1080 g
Analog measuring inputs:	
Current input:	4...20 mA
Voltage input:	0...10 V DC
Linearity error:	< ±0.2 % v. f. s. at 25 °C
A/D converter:	
Resolution:	12 bit (4096 steps per meas. span)
Scanning rate:	1000 / s
On-status display:	8-digit 17-segment LCD display, digit height 12 mm, green
Bargraph:	20-segment for current value
Trend arrows:	last changes
Display range:	-9999... +9999
Display rate:	4/s
Display unit:	all technical units
Sensor connection:	Plug 3-pin, DIN EN 175 301-803-A (prev. DIN 43650), incl. plug connector
Electrical connection:	14-pin screw terminal for 1.5 mm ² AWG14, plug-in type

Cable gland:	
Standard:	1 x PG13.5 side entry
Option:	2 x PG13.5 top entry
Temperature influence:	< 0.05 % v. f. s. / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	≤±0.01 % f. s.
Temperature range:	
Electronics:	-10 °C... +70 °C
Storage:	-30 °C... +80 °C
Power supply:	18... 32 V DC, reversed polarity protected (SELV, PELV)
Power consumption:	approx. 350 mA at Ub = 24 V DC (without load)
Analog output:	
Current output:	4...20 mA
Load:	max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub = 24 V DC 0.3 % / 100 Ohm
Load influence:	1 ms
Scanning rate:	0...10 V DC
Voltage output:	max. 10 mA
Rating:	25 %... 100 % f. s.
Adjustment range:	
4x relay output(s) - change-over contacts (SPDT):	
Switching voltage:	max. 120 V DC / 250 V AC
Switching power:	max. 120 W / 1250 VA
Cycles:	1 mio. at 24 V DC / 2 A
Switching rate:	max. 20 / s
Delay:	0.0 s ... 9.9 s adjustable
Operation time:	1 ms
Status display:	S1... S4 on LCD display
Accessories:	Mounting traverse, vibration damper
Approval:	cULus: file no. E248549

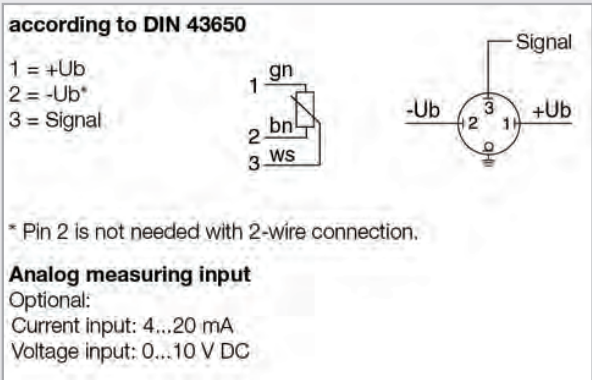
Dimensions (mm / inch)



Electronic connections



Sensor Connection



Order Numbers

Electronic trip amplifier with 4 relays, 1 input and multifunction display		
Analog Input	Analog Output	Order No.
4...20 mA	---	0003-026
4...20 mA	4...20 mA	0003-024
4...20 mA	0...10 V	0003-025
0...10 V	---	0003-032
0...10 V	4...20 mA	0003-030
0...10 V	0...10 V	0003-031

Accessories

Order Number	Description
903-0681	Mounting traverse (1 set = 2 pcs)
914-0107	Vibration damper (1 pack = 4 pcs)

Electronic Display

UAD3V3

Trip amplifier for all physical quantities with digital display, 4 switching outputs and 2 analog outputs.
Linearity error 0.2 % f. s.

Features

Two 8-digit 14-segment LCD displays with bargraph and trend indication, microprocessor controlled, self monitoring, all parameters are configured by keypad, display unit selectable, adjustable keypad lock, high accuracy, quick scanning rate (1000/s)

Display range

freely scalable: -9999...+9999

Applications

OEM applications,
hydraulic and pneumatic systems,
test bed and apparatus engineering,
heavy industry

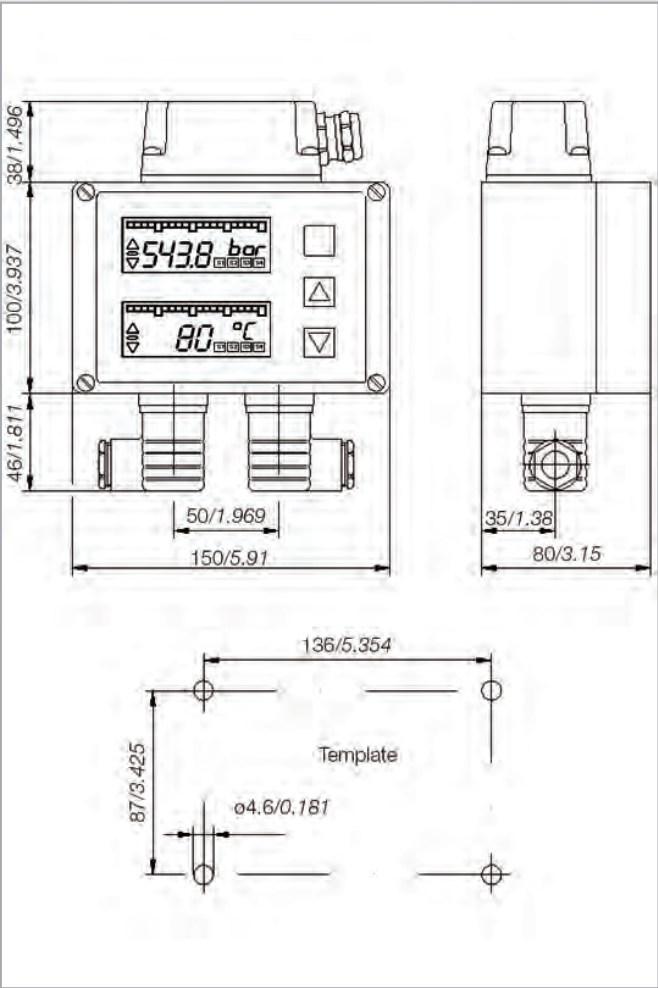


Technical Data

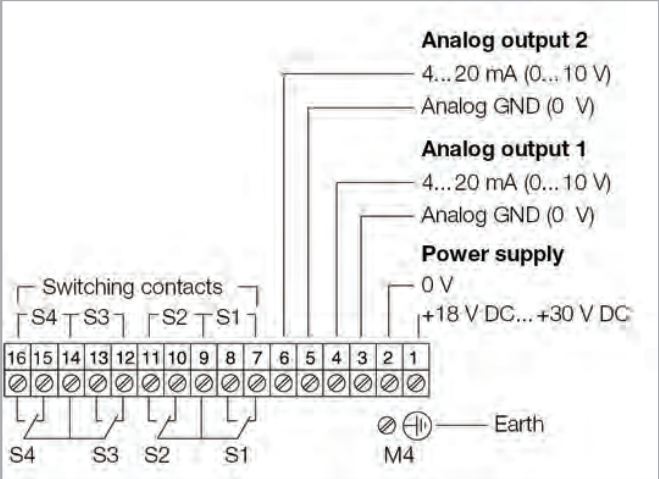
Measuring principle:	Amplifier with 12 bit A/D converter
Materials:	
Electronics housing:	Cast aluminum G AL SI 12
Housing seal:	CR
Keypad:	Polyester
Operating elements:	Keypad with easy-response push-buttons
System of protection:	IP65
Protection class:	I
Dimensions:	100 x 150 x 80 mm (W x H x D)
Weight:	approx. 1080 g
Analog measuring inputs:	
Current input:	4... 20 mA
Voltage input:	0... 10 V DC
Linearity error:	< ±0.2 % v. f. s. at 25 °C
A/D converter:	
Resolution:	12 bit (4096 steps per measuring span)
Scanning rate:	1000 / s
On-status display:	Two 8-digit 14-segment LCD displays, digit height 12 mm, red and green 20-segment for current value Bargraph: Trend arrows: Display range: Display rate: Display unit:
	last changes -9999... +9999 4 / s all technical units
Sensor connection:	2 plugs 3-pin, DIN EN 175 301-803-A (prev. DIN 43650), incl. plug connector
Electrical connection:	16-pin screw terminal for 1.5 mm ² AWG14, plug-in type

Cable gland:	
Standard:	1 x PG13.5 side entry
Option:	2 x PG13.5 top entry
Temperature influence:	< 0.1 % v. f. s. / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	≤±0.01 % v. f. s.
Temperature range:	
Electronics:	-10 °C... +70 °C
Storage:	-30 °C... +80 °C
Power supply:	18... 32 V DC, reversed polarity protected (SELV, PELV)
Power consumption:	approx. 250 mA at U _b = 24 V DC (without load)
Analog output:	
Current output:	4...20 mA
Load:	max. R _I = (U _b -12 V) / 20 mA R _I = 600 Ohm at U _b = 24 V DC
Load influence:	0.3 % / 100 Ohm
Scanning rate:	1 ms
Voltage output:	0...10 V DC
Rating:	max. 10 mA
Adjustment range:	25 %... 100 % f. s.
4x relay output(s)-change-over contacts (SPDT):	
Switching voltage:	max. 120 V DC / 160 V AC
Switching power:	max. 120 W / 1250 VA
Cycles:	1 mio. at 24 V DC / 2 A
Switching rate:	max. 20 / s
Delay:	0.0 s ... 9.9 s adjustable
Operation time:	1 ms
Status display:	S1... S4 on LCD display
Accessories:	Vibration damper

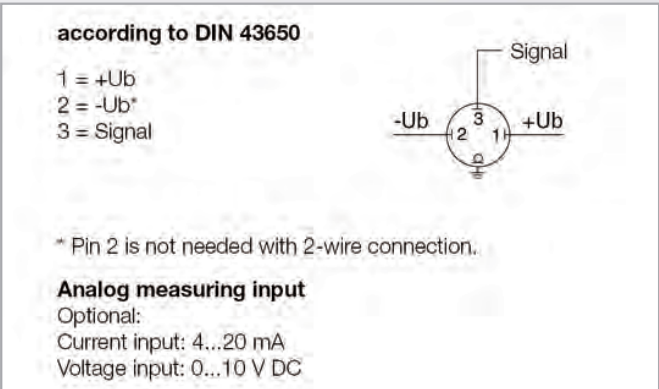
Dimensions (mm / inch)



Electronic connections



Sensor Connection UAD3-V3



Order Numbers

Electronic trip amplifier with 4 relays, 2 inputs and multifunction display		
Analog Input	Analog Output	Order No.
4...20 mA	---	0007-017
4...20 mA	4...20 mA	0007-018
0...10 V	---	0007-019
0...10 V	4...20 mA	0007-020

Accessories

Order Number	Description
914-0107	Vibration damper (1 pack = 4 pcs)

Notes

Notes

Lined area for notes.

Experts

Specialists for monitoring
and control of

- ▶ Pressure
- ▶ Temperature
- ▶ Level
- ▶ Flow

Barksdale develops market-focused solutions for customers in the fluid power, transportation and industrial equipment markets focusing on applications that include:

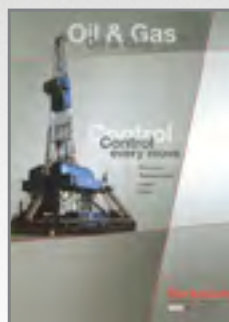
Sensors & Switches for
Wind Turbines



Shipbuilding



Oil and gas exploration



Truck, trailer and bus
suspensions



Sensors for Hydraulic
Power Packs



Product overview



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Index: 923-0862 C