

AS30 | AS50 Precision Thin-film Pressure Sensors

- ▣ Measurement ranges 0 ... 4 bar to 0 ... 1600 bar
- ▣ Gauge pressure; Series AS50 with additional temperature sensor
- ▣ Accuracy pressure output 0.25 % FS
- ▣ Output: voltage, ratiometric, 4 ... 20 mA



For applications that need consistent high levels of performance, reliability and stability the AS30/AS50 series sputtered thin film units offer unbeatable price performance ratio in a small package size with all stainless steel wetted parts in the volumes required. A wide choice of electrical outputs as well as both electrical and pressure connections means the unit is suitable for most applications without modification. The compact construction makes it ideal for installation where space is at a premium.

The sensors are available in series **AS30** with pressure signal and in series **AS50** with pressure and temperature signal (dual output).

▣ Features:

- Superior long-term stability
- High accuracy
- Rugged design
- Wetted part in stainless steel
- Low cost

▣ Applications:

- Hydraulic controls
- HVAC systems
- Engine controls (incl. Diesel)
- Industrial process controls
- Off-highway equipment controls
- Compressors and pumps

▣ Technical Data

Pressure range in [bar]:	0 ... 4	5	10	16	25	40	60	100	160	250	400	600	1000	1600
 vented gauge sealed gauge ...					
Proof pressure [factor FS]:	3x	3x	3x	3x	3x	2x	2x	2x	2x	2x	2x	2x	2x	1.4x
Burst Pressure [factor FS]:	40x	40x	40x	40x	40x	20x	20x	20x	10x	10x	10x	4x	4x	1.8x

Fatigue life:	Designed for more than 100 million cycles
Long-term drift:	0.2 % FS/year (non-cumulative)
Accuracy of pressure output:	0.25 % FS
Accuracy of temperature output (AS50 only):	3.5 % of temperature span
Thermal error, typical:	1.5 % FS/100 °C
Bandwidth:	AS30: DC ... 250 Hz AS50: DC ... 1 kHz
Compensated temperature range:	-40 ... +105 °C
Operating temperature range:	-40 ... +105 °C
Zero tolerance:	0.5 % of span
Span tolerance:	0.5 % of span
Pressure port	see table below
Wetted parts material:	17-4 PH stainless steel

Electrical connection:	see table below
Enclosure:	IP65 for electrical connection codes: 1 IP67 for electrical connection codes: 2, 3, 4, 5, 6, 7
Vibration:	40 g peak-peak, (vibration 20 ... 1000 Hz sinusoidal with 40 g peak per MIL-STD-810E)
Shock:	Withstands free fall to EC 68-2-32 procedure 1
EMC	100 V/m (radiated immunity)
Approvals:	CE, fully RoHS compliant
Weight:	35 grams

Individual Specifications:

Voltage output:

Output signal AS30:	1 ... 5 V, 1 ... 6 V, 0 ... 5 V, 0 ... 10 V, 0.5 ... 4.5 V (current 5.5 mA max.)
Output signal AS50:	1 ... 5 V, 1 ... 6 V, 0.5 ... 4.5 V (current 5.5 mA max.)
Supply voltage:	2 V above full scale to 30 VDC max. at 5.5 mA max.
Source and sinks	2 mA max.

Current output (4 ... 20 mA, 2-wire):

Output signal (AS30 only):	4 ... 20 mA
Supply voltage:	8 ... 30 VDC (24 VDC max. for temperature 100 °C and above)
Max. load resistance:	(Supply voltage - 8) x 50 Ohm
Min. load resistance:	(Supply voltage - 24) x 50 Ohm

Ratiometric output:

Output signal:	0.5 ... 4.5 V at 5.5 mA
Supply voltage:	5 VDC ±10 %

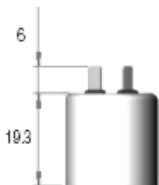
Pressure Ports

G1/4" male	G1/4" A integral face seal	7/16"-20 UNF with 37° flare	1/4"-18 NPT		
Code 01	Code 02	Code 04	Code 05		
M12 x 1,5	M12 x 1,5 HP metal washer seal	7/16"-20 UNF O-ring	1/8"-27 NPT	7/16" Schraeder	
Code 06	Code 07	Code 08	Code 09	Code 10	

Hex is 22 mm
 More ports on request.
 Dimensions in „mm“, all values are approx. values
 These drawings are for information only and not intended for construction purpose.
 Please contact us for detailed drawings.

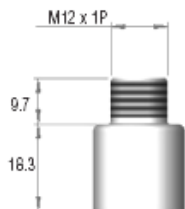
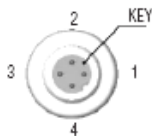
Electrical Connections

DIN43650C (Code 1)



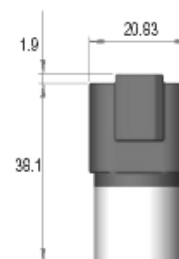
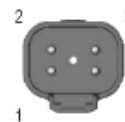
Pin	Voltage	Function	Current
1	+signal pressure	NC	
2	+supply voltage	+	
3	+signal temp.	NC	
4	ground	-	

M12 x 1P (Code 2)



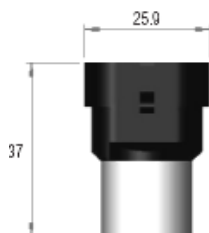
Pin	Voltage	Function	Current
1	+supply voltage	+	
2	+signal pressure	NC	
3	ground	-	
4	+signal temp.	NC	

Deutsch DT04-4P (Code 5)



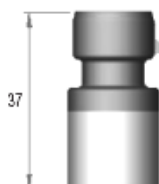
Pin	Voltage	Function	Current
1	ground	-	
2	+supply voltage	+	
3	+signal temp.	NC	
4	+signal pressure	NC	

Amp Superseal 1.5 (Code 3)



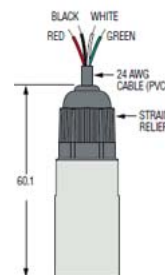
Pin	Voltage	Function	Current
1	+signal pressure	NC	
2	ground	-	
3	+supply voltage	+	

Packard MetriPack (Code 6)



Pin	Voltage	Function	Current
A	ground	-	
B	+supply voltage	+	
C	+signal pressure	NC	

Integral Cable (Code 7)



Colour	Voltage	Function	Current
Red	+supply voltage	+	
Black	Ground	-	
White	+signal pressure	NC	
Green	+signal temp.	NC	

Dimensions in „mm“, all values are approx. values
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Ordering Information

AS3	x	yy	z	0	MB	KA
AS5	x	yy	z	t	MB	KA

Output	Supply voltage	x =
1 ... 5 V	7 ... 30 VDC	2
0.5 ... 4.5 V	6.5 ... 30 VDC	3
0.5 ... 4.5 V ratiometr.	5 VDC	4
1 ... 6 V	8 ... 30 VDC	5
0 ... 5 V	7 ... 30 VDC	6
0 ... 10 V	12 ... 30 VDC	7
4 ... 20 mA 2-Leiter	8 ... 30 VDC	8

Pressure Ports:	yy =
G1/4 external, hex22, for seal ring	01
G1/4 external with integral O-ring, hex22	02
M14 x 1.5 per ISO 6149-2	03
7/16"-20 UNF, 37° flare (SAEJ514), hex22	04
1/4"-18 NPT, hex22	05
M12 x 1.5 (6G), hex22, for O-ring	06
M12 x 1.5 HP MB ≥1000 bar, hex22	07
7/16"-20 UNF for O-ring	08
1/8"-27 NPT, hex22	09
7/16" Schraeder	10
M14 x 1.5 external with 60° cone	11

Electrical Connections	z =
Mini-DIN43650C (4-pin)	1
M12 x 1 (4-pin)	2
Amp Superseal (3-pin)	3
Deutsch DTD4-4P (4-pin)	5
Packard Metri-Pack150 (3-pin)	6
integral cable	7

Notes:

- (1) Model AS50 available with voltage outputs 2, 3, 4 and 5 and limited to connections that have 4 pins like electrical codes 1, 2, 4 and 5. Accuracy is 3.5 % of temperature span. Requires additional 2 mA of power.
- (2) Ranges 1000 bar and above available with pressure port 07 (M12 x 1.5 HP) only
- (3) Range 4 bar not available with 4 ... 20 mA and 0 ... 10 V outputs.

To create a code for a customized version, we will use the code for the nearest standard version and add a -Zxxx number that defines exactly the specs of the customized version!

For sensors with individual calibration certificate, a "K" has to be added to the sensor code. (additional charge!)

Please order all mating connectors and cables separately!

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.

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ALTHEN
MESS- UND SENSORTECHNIK

Ranges:	MB =
4 bar V	BV0004 (3)
5 bar V	BV0005
10 bar V	BV0010
16 bar V	BV0016
25 bar V	BV0025
40 bar V	BV0040
60 bar V	BV0060
100 bar V	BV0100
160 bar S	BS0160
250 bar S	BS0250
400 bar S	BS0400
600 bar S	BS0600
1.000 bar S	BS1000 (2)
1.600 bar S	BS1600 (2)

V = vented to atmosphere
S = sealed

Temperature Output (1) (AS50):	t =
Temperature signal is a voltage output and the same as pressure output	
-40 ... +105 °C	T1
0 ... +100 °C	T2
0 ... +80 °C	T3

Cable Length	KA =
for sensors with integral cable only (electr. Connection 7)	
no cable	00
1 m	01
2 m	02
3 m	03
4 m	04
5 m	05