ASHCROFT®
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OEM Pressure Transducer Type S1

FEATURES

- Compact and highly configurable; wide selection of pressure connections, electrical terminations and outputs
- Designed for mid-high volume OEM applications
- 17-4PH Stainless steel sensor element
- Field proven polysilicon thin film pressure sensor
- Ranges -1 to 700 bar

TYPICAL USES

- Off road vehicles
- Construction machinery
- Hydraulic and pneumatic sensing
- Performance racing & Transportation
- Agriculture implements
- Compressor control
- HVAC/R
- Process automation and control
- Pump monitoring
- Waste water

S1
Pressure Transducer

KEY BENEFITS

- **Compact & rugged design**
- **Variety of housing and connection material options**
- **High EMI/RFI immunity ratings**

PERFORMANCE SPECIFICATIONS

Reference Temperature:	21 °C ±1 °C
Accuracy Class:	±1.0% Span (±0.50% Optional): Includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors at reference temperature
Total Error Band Accuracy (TEB):	±1.0% of Span: From 0º C to 85 ºC ±2.0% of Span: From 85 ºC to 125 ºC ±2.0% of Span: From -40 ºC to -20 ºC Includes the combined effects of non-linearity (Terminal Point Method), hysteresis, non-repeatability, temperature and zero offset and span setting errors
Stability:	≤ ±0.25% of span/year
Durability:	50 million cycles
Approvals:	CE

ENVIRONMENTAL SPECIFICATION

Temperature Limits:	Storage:	-50 °C to 125 °C
	Operating:	-40 °C to 125 °C
	Media:	-40 °C to 125 °C
Effect of Humidity:	Typical ± 0,05 % within 0-100 % R.H.	
Ingress Rating: IP67 (NEMA 6X) IP65 (NEMA 4X)	Metri-Pack, Shielded cable, Deutsch DT, AMP Econoseal and M12 Hirschmann EN 175301-803 Form A & C (DIN 43650 A & C)	

FUNCTIONAL SPECIFICATIONS

Vibration: (IEC 60068-64)	Random: 20 g RMS 20-2000 Hz
Shock: (IEC 60068-2-27)	100 g, 6 ms
Drop:	Withstands 1 meter on concrete

FUNCTIONAL SPECIFICATIONS

Response Time:	< 5 ms
Warm-up Time:	< 20 ms
Position Effect:	< ± 0,015 % span typical

Overpressure (F.S.)	Proof	Burst
≤ 7 bar (100 psi)	2x Range	50x Range
≥ 7 bar (100 psi) up to 207 bar (3000 psi)	2x Range	5x Range
≥ 207 bar (3000 psi) up to 345 bar (5000 psi)	1,5x Range	4x Range
≥ 345 bar (5000 psi) up to 517 bar (7500 psi)	1,5x Range	3x Range
≥ 517 bar (7500 psi) up to 689 bar (10000 psi)	1,2x Range	3x Range

ELECTRICAL SPECIFICATIONS

Insulation Withstand Voltage:	500 Vac
Insulation Resistance:	> 100 MΩ at 100 Vdc
Circuit Protection:	Reverse polarity and miswire protection (excludes ratiometric output)

OUTPUT SIGNALS

Signals:	Supply Voltage: (unregulated)		
Voltage	Min.	Max	Current
0-5 Vdc (3-wire)	9 Vdc	32 Vdc	11 mA
0-10 Vdc (3-wire)	14 Vdc	32 Vdc	11 mA
1-5 Vdc (3-wire)	9 Vdc	32 Vdc	5 mA
1-6 Vdc (3-wire)	9 Vdc	32 Vdc	5 mA
0,5-4,5 Vdc (3-wire)	9 Vdc	32 Vdc	5 mA
Ratiometric			
0,5-4,5 Vdc (3-wire)	5 Vdc ± 0,5 Vdc		5 mA
Current			
4-20 mA (2-wire)	9 Vdc	32 Vdc	

ashcroft.eu
sales@ashcroft.com
+49 (0) 2401/808-0

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WETTED COMPONENTS	
Diaphragm:	17-4PH Stainless steel
Process Connection:	Aluminum, Brass, Low-carbon steel, Stainless steel 304 (1.4401)
NON-WETTED COMPONENTS	
Housing	Aluminum, Brass, Low-carbon steel, Stainless steel 304 (1.4401)
Weight:	~60 g
CONNECTION SPECIFICATIONS	
Electrical Connection:	Check ordering table at page 3
Process Connection:	Check ordering table at page 4

Contact us for pressure range options, other process connections, approvals and markings

TruAccuracy — What Does It Mean?

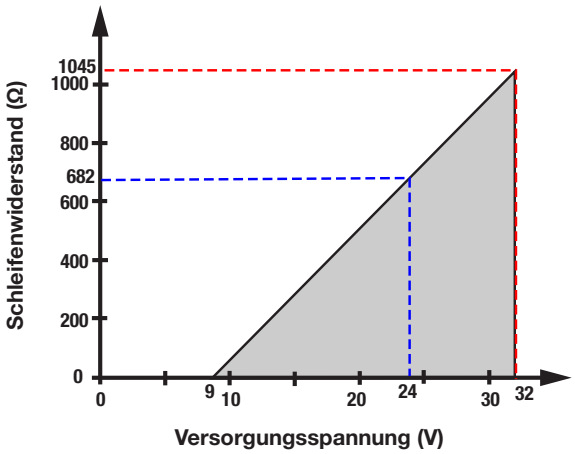
Ashcroft's TruAccuracy™ specification is exclusively based on terminal point methodology instead of statistically derived schemes like 'best fit straight line'.

TruAccuracy™ means the Ashcroft S1 has standard span accuracy of ± 1,0 % with option to purchase as ±0,5 % out of the box. Zero and span setting errors are already included in the standard ± 1,0 % of span accuracy spec.

The S1 is ready to be installed with no additional calibration adjustments required.

A unit from another manufacturer advertised as ±0.25% best fit straight line may actually be a ±1.25% to ±2.25% device. Using best fit straight line method, the accuracy spec does not include zero and span setting errors, which can be as much as ±1.00% each.

LOAD LIMITATIONS 4-20 MA OUTPUT ONLY



- - Maximal zulässiger Schleifenwiderstand für ein 32 VDC-Versorgungsnetz

- - Beispiel (Schleifenwiderstand von 682 Ω erfordert eine Mindestspannung von 24 V)

V_{MIN} = 9 V + [0.022 A* x (R_L)]
(*beinhaltet einen Sicherheitsfaktor von 10%)
$R_L = R_s + R_w$
R_L = Schleifenwiderstand (Ω)
R_s = Sensorwiderstand (Ω)

Ashcroft Instruments GmbH • sales@ashcroft.com • www.ashcroft.eu
Deutschland / Germany
Max-Planck-Str. 1
D-52499 Baesweiler
Tel.: +49 (0) 2401 808-0

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OEM Pressure Transducer
Type S1

ORDERING CODE	EXAMPLE:	S1	7	S	0	MGA	42	GN	10BR	XTU
Model										
S1	OEM Pressure Transducer	S1								
Accuracy										
5	0.50 % of span									
7	1.00 % of span		7							
Fitting Material										
A	Aluminum (max. pressure range 207 bar)									
B	Brass (max. pressure range 276 bar)									
C	Low carbon steel (max. pressure range									
S	Stainless steel (max. pressure range 689 bar)			S						
Fitting Finish										
B	Anodized blue (Fitting material Aluminum only)									
Z	Zinc Chromate (Fitting material low carbon only)									
C	Custom									
0	Without plating				0					
Pressure Connection (all available connection types see table “Pressure Connections” at page 4)										
MGA	G 1/4 A Male (DIN 3852 Form E)					MGA				
Output Signal										
05	0-5 Vdc									
10	0-10 Vdc									
15	1-5 Vdc									
16	1-6 Vdc									
42	4-20 mA						42			
RM	0.5-4.5 Vdc ratiometric									
45	0.5-4.5 Vdc									
Electrical Connection (all codes without mating connector)										
DC	Hirschmann “Mini” EN 175301-803 Form C (DIN 43650 Form C)									
DA	Hirschmann EN 175301-803 Form A (DIN 43650 Form A)									
EW	M12 (molded thread) with Pin 3 as common									
RW	M12 (molded thread) with Pin 4 as common									
EX	M12 (metal thread) with Pin 3 as common									
RX	M12 (metal thread) with Pin 4 as common									
FA	Shielded cable with PVC jacket and 24 AWG leads, Length 1 foot									
FB	Shielded cable with PVC jacket and 24 AWG leads, Length 1 m									
FC	Shielded cable with PVC jacket and 24 AWG leads, Length 10 feet									
FD	Shielded cable with PVC jacket and 24 AWG leads, Length 5 m									
FE	Shielded cable with PVC jacket and 24 AWG leads, Length 20 feet									
GN	Metri-Pack®							GN		
JN	AMP Econoseal									
DT	Deutsch DT-Series DT04-3P									
DU	Deutsch DT-Series DT04-4P									
DS	Deutsch DTM-Series DTM04-3P									
Ranges (all available ranges see at page 4)										
10BR	10 bar								10BR	
Options (If choosing an option(s) must include a “X”)										
TU	Throttle plug									XTU

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OEM Pressure Transducer
Type S1

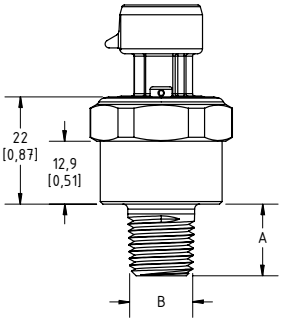
RANGE TABLE

	Range psi	Code	Range bar	Code
Compound	0/-14,7	VAC#	-1/0	VACBR
	15/-14,7	V&15#	-1/1	V_1BR
	30/-14,7	V&30#	-1/1,6	V_1P6BR
	45/-14,7	V&45#	-1/2,5	V_2P5BR
	60/-14,7	V&60#	-1/4	V_4BR
	75/-14,7	V&75#	-1/6	V_6BR
	100/-14,7	V&100#	-1/10	V_10BR
	150/-14,7	V&150#	-1/16	V_16BR
	200/-14,7	V&200#	-1/25	V_25BR
	300/-14,7	V&300#		
Positive Pressure	15	15#	0/1	1BR
	30	30#	0/1,6	1P6BR
	45	45#	0/2,5	2P5BR
	50	50#	0/4	4BR
	60	60#	0/6	6BR
	75	75#	0/10	10BR
	100	100#	0/16	16BR
	150	150#	0/25	25BR
	200	200#	0/40	40BR
	250	250#	0/60	60BR
	300	300#	0/100	100BR
	400	400#	0/160	160BR
	500	500#	0/250	250BR
	650	650#	0/400	400BR
	750	750#	0/600	600BR
	1,000	1000#		
	1,500	1500#		
	2,000	2000#		
	2,500	2500#		
	3,000	3000#		
	4,000	4000#		
	5,000	5000#		
	6,000	6000#		
	7,500	7500#		
	10,000	10000#		

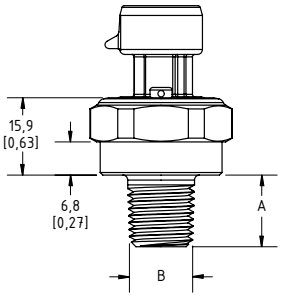
kg/cm², kPa, and MPa ranges also available

DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings



LOW PRESSURE
(RANGES LESS THAN 100 PSI)



HIGH PRESSURE
(RANGES GREATER THAN OR EQUAL TO 100PSI)

PRESSURE CONNECTION

Pressure Connection Code	Thread	Dimension A	Dimension B
FGA	G 1/4 A Female (DIN 3852 Form E)	19,7 [0,78]	22,1 [0,87]
FS7	7/16-20 UNF-2B Schrader Female	19,2 [0,75]	19,1 [0,75]
F02	1/4-18 NPT Female	17,3 [0,68]	19,1 [0,75]
MB1	M10x1.25 Banjo Single	20 [0,79]	9,9 [0,39]
MEK	7/16-20 UNF-2B SAE #4 Male	11 [0,43]	11,2 [0,44]
MEV	9/16-18 UNF-2A SAE #6 Male	12 [0,47]	14,2 [0,56]
MGA	G 1/4 A Male (DIN 3852 Form E)	14,7 [0,58]	13,2 [0,52]
MG1	G 1/8 B Male (EN837-1)	10 [0,39]	9,7 [0,38]
MG2	G 1/4 B Male (EN837-1)	15 [0,59]	13,2 [0,52]
M01	1/8-27 NPT Male	12 [0,47]	10,7 [0,42]
M02	1/4-18 NPT Male	14,7 [0,58]	13,5 [0,53]
M45	7/16-20 Flare 45°	14 [0,55]	11,2 [0,44]
M76	7/16-20 Flare 37°	14 [0,55]	14 [0,55]

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Type S1

DIMENSIONS IN MM [INCH]

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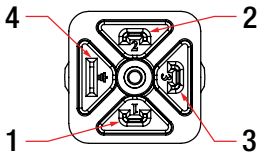
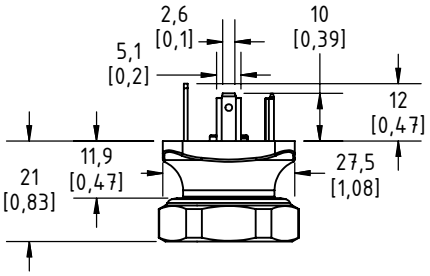
ELECTRICAL CONNECTION

EN 175301-803 FORM A (DIN 43650 FORM A)

Code: DA

Pin	Voltage Function	Current Function
1	V+	V+
2	V- (Common)	V-
3	Output	V-
4	Ground	Ground

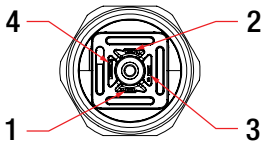


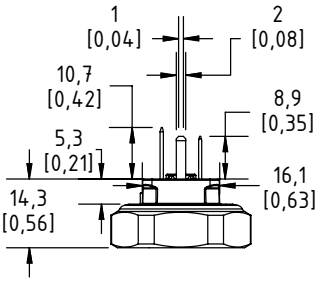


EN 175301-803 FORM C (DIN 43650 FORM C)

Code: DC

Pin	Voltage Function	Current Function
1	V+	V+
2	V- (Common)	V-
3	Output	V-
4	Ground	Ground

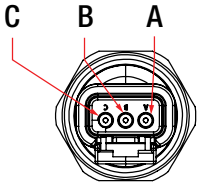


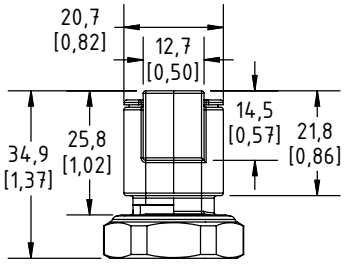


DEUTSCH DTM04-3P

Code: DS

Pin	Voltage Function	Current Function
A	V+	V+
B	V- (Common)	V-
C	Output	V-

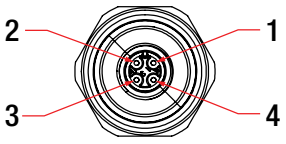


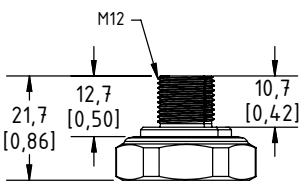


M12 (4 PIN) MOLDED THREAD (PIN 3 COMMON)

Code: EW

Pin	Voltage Function	Current Function
1	V+	V+
2	Ground	Ground
3	V- (Common)	V-
4	Output	V-

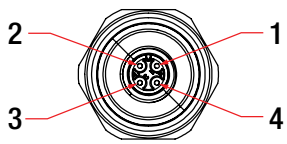


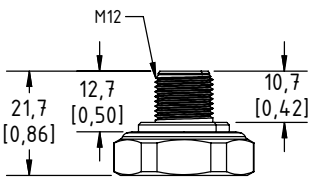


M12 (4 PIN) METAL THREAD (PIN 3 COMMON)

Code: EX

Pin	Voltage Function	Current Function
1	V+	V+
2	Ground	Ground
3	V- (Common)	V-
4	Output	V-

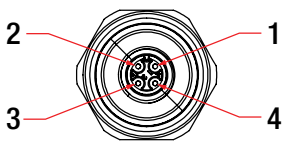


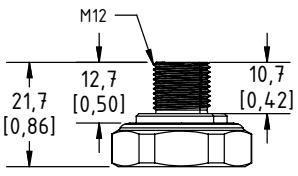


M12 (4 PIN) MOLDED THREAD (PIN 4 COMMON)

Code: RW

Pin	Voltage Function	Current Function
1	V+	V+
2	Output	V-
3	Ground	Ground
4	V- (Common)	V-





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OEM Pressure Transducer
Type S1

DIMENSIONS IN MM [INCH]

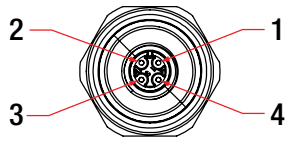
For reference only, consult Ashcroft for specific dimensional drawings

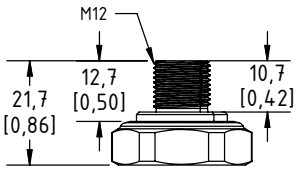
ELECTRICAL CONNECTION

M12 (4 PIN) METAL THREAD (PIN 4 COMMON)

Code: RX

Pin	Voltage Function	Current Function
1	V+	V+
2	Output	V-
3	Ground	Ground
4	V- (Common)	V-

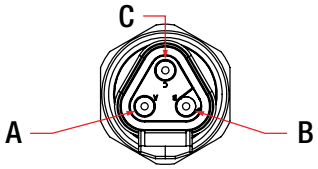


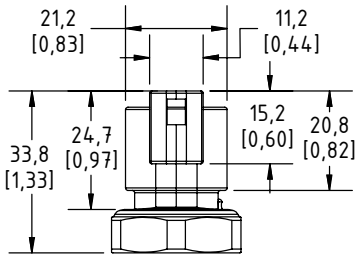


DEUTSCH DT04-3P

Code: DT

Pin	Voltage Function	Current Function
A	V+	V+
B	V- (Common)	V-
C	Output	V-

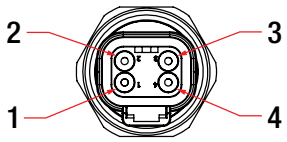


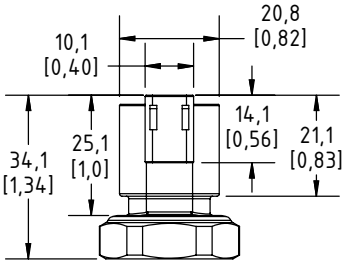


DEUTSCH DT04-4P

Code: DU

Pin	Voltage Function	Current Function
1	V- (Common)	V-
2	V+	V+
3	Ground	Ground
4	Output	V-

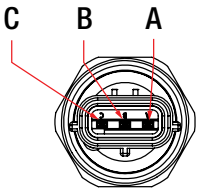


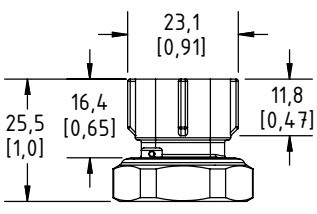


AMP ECONOSEAL

Code: JN

Pin	Voltage Function	Current Function
A	V+	V+
B	V- (Common)	V-
C	Output	V-

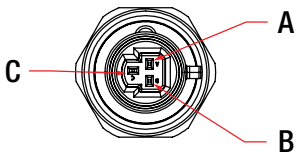


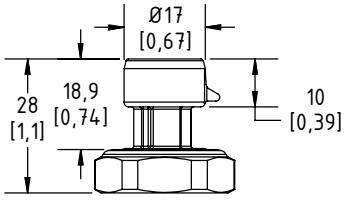


METRI-PACK®

Code: GN

Pin	Voltage Function	Current Function
A	V- (Common)	V-
B	V+	V+
C	Output	V-

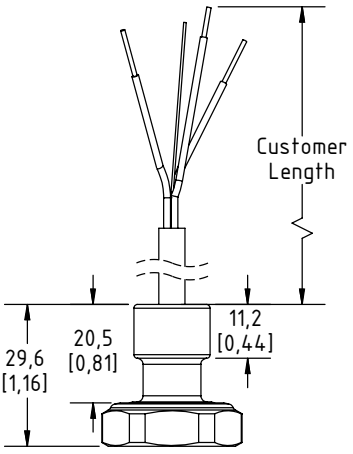




SHIELDED CABLE

Code: FA, FB, FC, FD and FE

Pin	Voltage Function	Current Function
Red	V+	V+
Black	V- (Common)	V-
White	Output	n/a
Drain	n/a	n/a



Ashcroft Instruments GmbH • sales@ashcroft.com • www.ashcroft.eu
Deutschland / Germany
Max-Planck-Str. 1
D-52499 Baesweiler
Tel.: +49 (0) 2401 808-0

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