

Precision Digital Test Gauge

Models 2084/3084, 2086/3086 and 2089/3089

Piezoresistive sensor element
Accuracy 0,25 %, 0,1 % or 0,05 % F.S. **Total Error Band**
includes all effects of linearity, hysteresis, repeatability and
temperature from -18 up to 63 °C

Features

- Industry leading accuracy
- Big display with bar graph
- Rugged stainless steel case
- 12 Engineering units
- Min./max. recall
- 7 Languages
- Adjustable update and dampen modus
- Display backlight
- Field calibration capability
- Disable mode



Ranges

-1 ... 0 bar up to 0 ... 500 bar
-30 ... 0 in. Hg up to 0 ... 7000 psi

Technical specification	2084/3084	2086/3086	2089/3089
Measuring principle	Piezoresistive sensor element with internal stainless steel diaphragm		
Range	250 400 600	1 1,6 2,5 4 6 10 16 25 40 60	160 250 400 500 -1/0 -1/1 -1/2
	in mbar		in barabs
Overpressure limit	100 % F.S.		
Pressure type	Gauge, vacuum, compound and absolute		
Case size	3 inch (75 mm)		
Process connection	G 1/4 B according to EN 837-1, 1/4 NPT according to ANSI/ASME B1.20.1, 1/4 JIS, 1/4 SAE, others on request		
Connection orientation	Lower, optional 3 or 9 o'clock		
Material	Stainless steel 316 (1.4401)		
Process connection	Stainless steel 316 (1.4401)		
Sensor	300 series stainless steel, electropolished		
Case	Lexan		
Display			
Power supply	3 AAA alkaline batteries, battery life > 1000 hours		
Display	LCD with backlight		
Type	5 digit, 99.999 counts, 16 mm high		
Digits, resolution	Bar graph 0 ... 100 % F.S., battery level indicator, warning if pressure is out of range		
Features	0,25 % F.S. 0,1 % F.S. 0,05 % F.S.		
Accuracy	Terminal point, total error band (TEB)		
Method including	Linearity, hysteresis, repeatability and temperature (-18 ... 63 °C)		
Engineering units	psi, in. Hg, in. H ₂ O, ftSW, bar, mbar, kPa, MPa, mmHg, cmH ₂ O, mmH ₂ O, kg/cm ² (inches of water ranges for 3 reference temperatures: 4 °C, 20 °C and 60 °F)		
Update rate	4 options: 10, 5, 2 or 1 times per second		
Damping	5 options: none, average 2, 4, 6 or 8 readings		
Auto off	5 options: never, 2, 5, 15 or 30 minutes		
Language of setup menu	English, German, French, Spanish, Portuguese, Italian and Dutch		
Permissible	-18 ... 63 °C, temperature compensated		
Ambient temperature	-40 ... 82 °C		
Storage temperature	Intrinsically safe FM and CSA		
Approvals, explosion proof	Immunity according to EN 50 082-1 (March 1997)		
CE-mark/EMC	Emission according to EN 50 022 (1995)		
Mounting	Direct mounting, optional panel mounting		
Protection according EN 60 529/IEC 529	IP65		
Weight in kg	0,5		
Accessories, Options	Protective carrying pouch, optional 10 point individual calibration chart (standard on type 2089/3089), weatherproof ABS gauge carrying case, protective rubber boot (black or orange)		

All specification are subject to change without notice.

G6.2089/3089/E

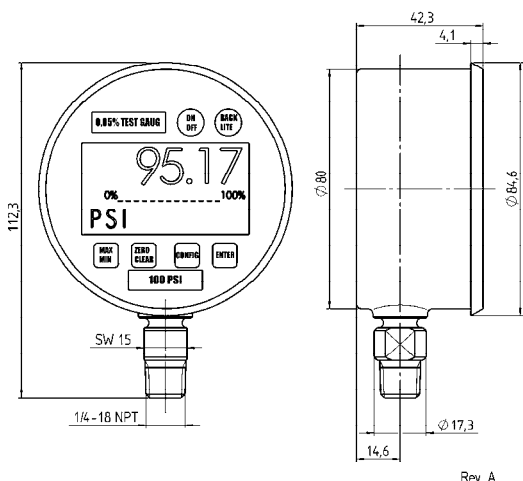
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General dimensions in mm



Rev. A

Accuracy full scale total error band (TEB) includes:

- Linearity
- Hysteresis
- Repeatability
- temperature influence from -18 up to 63 °C according terminal point method

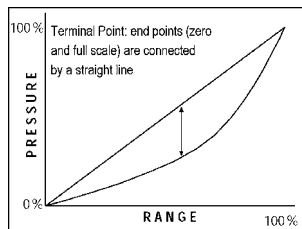
Ambient Temperature Changes

Other manufacturers of digital gauges may specify operating temperature range without specifying the additional error associated with changes in ambient temperature. Errors can range as high as 0.7%/10 K. A 15 K change from an ambient of 20 °C may add an additional 1% to the stated accuracy of the gauge!

The Ashcroft digital gauge with total error band ensures accuracy from -18...63 °C.

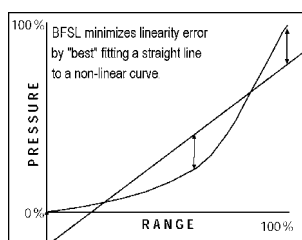
What you should know about digital gauge accuracy... Terminal Point versus Best Fit Straight Line Accuracy.

ASHCROFT/HEISE Precision digital test gauges with terminal point accuracy



- All points between zero and full-scale will be within stated accuracy.
- Allows zeroing of gauge at start-up to eliminate any sensor offset.

Competitive digital gauges with best fit straight line (BFSL) accuracy



- Linearity error minimized by "best" fitting a straight line to a non-linear curve.
- BFSL gauges have a zero offset at calibration that must be maintained to ensure accuracy throughout range.

PROBLEM

- Re-zeroing gauge may invalidate published accuracy specification
- Zero offset at start-up may be the result of either:
 - BFSL Calibration
 - Zero Drift

Order information

Size	Type	System material	Execution	Process connection	Connection orientation	Range	Engineering unit	Options		
(30) 3" (75 mm)	With Ashcroft Logo:	(S) 316 (1.4401)	(D) IP65	(02) 1/4 NPT male	(L) Lower	-1/ 0	(BAR)	(CD10) 10 point calibration certificate (standard with type 3089)		
						(2084) Accuracy 0,25 %			-1/ 1	
						(2086) Accuracy 0,1 %			-1/ 2	
						(2089) Accuracy 0,05 %			0/0,25	
	With HEISE Logo:					(3084) Accuracy 0,25 %			0/ 0,4	(E) 9 o'clock
						(3086) Accuracy 0,1 %			0/ 0,6	
						(3089) Accuracy 0,05 %			0/ 1	
									0/ 1,6	
									0/ 2,5	
									0/ 4	
	0/ 6	(BARABS)								
	0/ 10									
	0/ 16									
	0/ 25									
	0/ 40									
	0/ 60									
	0/100	(FF) Front flange								
	0/160									
	0/250									
	0/400									
	0/500									
			0/ 1							
			0/ 1,6							
			0/ 3,4							
			psi and others on request							

Order example

Size	Type	System material	Execution	Process connection	Connection orientation	Range	Engineering unit	Options
30	3089	S	D	02	L	0/16	BAR	S7

the 3089 mounted on the Pressure Test System TP1

