

ACCURACY - GAUGE PRESSURE

Standard Accuracy Version

- 0 to 40% of Range: $\pm (0.02\% \text{ of Full Scale}^*)$
- 40% to 110% of Range: $\pm (0.05\% \text{ of Reading})$
- Vacuum: $\pm (0.25\% \text{ of Full Scale}^{**})$

Includes all effects of linearity, hysteresis, repeatability, temperature, and stability for one year.

All models indicate vacuum, but vacuum specification applies to 1 bar, 2 bar, 7 bar, 20 bar, and 30 bar models only, and includes vacuum calibration points.

-S5 Accuracy Option

- Vacuum to 110% of Range: $\pm (0.05\% \text{ of Full Scale}^*)$

**Full Scale is 100% of the range*

-S2 Accuracy Option

- Vacuum to 110% of Range: $\pm (0.02\% \text{ of Full Scale}^*)$

***Full Scale = -1.0 bar*

ACCURACY - ABSOLUTE PRESSURE

1,1 barA Range

- S5 Option: $\pm (0.05\% \text{ of Full Scale}^*)$

All Absolute Ranges

Includes all effects of linearity, hysteresis, repeatability, temperature, and stability for one year.

Easily switch between gauge (sealed gauge) and absolute pressure measurement.

1,1 barA Range

Only available with -S5 accuracy option.

Calibrated in Vertical Orientation. Orientation Effect = $\pm 0.0003 \text{ bar}$.

70 barA Ranges and Above

All models indicate pressure from 0 barA to Full Scale, but are only specified from 1 barA to Full Scale.

**Full Scale is 100% of the range.*

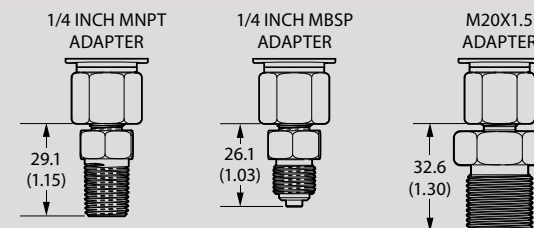
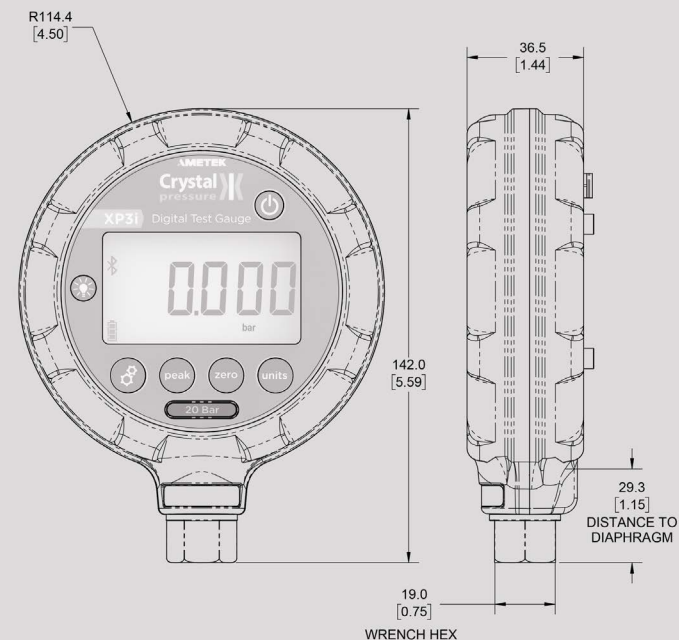
10 and 30 barA Range

- 0 to 40% of Range: $\pm (0.02\% \text{ of Full Scale}^*)$
- 40% to 110% of Range: $\pm (0.05\% \text{ of Reading})$
- S2 Option: $\pm (0.02\% \text{ of Full Scale}^*)$
- S5 Option: $\pm (0.05\% \text{ of Full Scale}^*)$

70, 140, 200, 300, 700, 1000 barA Ranges

- 1 barA to 40% of Range: $\pm (0.02\% \text{ of Full Scale}^*)$
- 40% to 110% of Range: $\pm (0.05\% \text{ of Reading})$
- S2 Option: $\pm (0.02\% \text{ of Full Scale}^*)$
- S5 Option: $\pm (0.05\% \text{ of Full Scale}^*)$

XP3i Pressure Gauge bar



ADDITIONAL SENSOR LENGTH WITH OPTIONAL FITTING ADAPTERS

OPERATING TEMPERATURE

Temperature Range: **-20 to 50° C (-4 to 122° F)**

Fully temperature compensated temperature range. No change in accuracy over the specified temperature range.

DISPLAY

Screen: **5.5 digits**

LCD readable in all conditions with two level backlight.

Single Line Display: **17 mm (0.68") high**

PSV mode is for Pressure Safety Valve testing. Configure using [CrystalControlWeb](http://CrystalControlWeb.com). (Configuration is available at crystalcontrolweb.com.)

Dual Line Display: **Main Display: 16.8 mm (0.66")**
Secondary Display: 7.1 mm (0.28")

Display Rate: **4 readings/second (standard)**

POWER / COMMUNICATION

3 x AA: **1500 hours, typical***

*Uses 3 alkaline AA (LR6) batteries. *Typical battery life when operating without backlight or Bluetooth communication.*

Ultra Low Power: **> 1 year, typical****

May be powered via the USB port when operating outside the hazardous environment. Optional USB adapter available.

Digital Interface: **USB Type C**

Bluetooth Low Energy: **Version 5.4, up to 100 feet typical**

***Enabled when datalogging interval is 20 minutes or longer.*

For hazardous location product warnings and approved batteries, refer to the operation manual.

ENCLOSURE

Weight: **580 g (20.7 oz)**

Weight includes batteries.

Rating: **IP66 and IP67**

Submersible to 1 m for 30 minutes [IEC 60529].

Housing: **Diecast aluminum**

Thick nickel plating over low copper, marine grade aluminum.

Vibration: **10-500 Hz, 50 m/s²**

LCD protected from impact damage by 1.5 mm (0.06") thick polycarbonate lens under polyester window - no glass.

Shock: **15 g, 11 ms**

Skydrol® compatible.

Protective Boot Option: **Fully static dissipative* to avoid build-up of electrostatic charge on portable equipment (incl. boot).****

Vibration and Shock tested to IEC 60068.

**Meeting EN IEC 60079-0:2018 requirements.*

***For hazardous location product warnings, refer to the operation manual.*

XP3i Pressure Gauge **bar**

CERTIFICATIONS



II 1G Ex ia IIC T3...T4 Ga
FTZU 23 ATEX 0015X



Ex ia IIC T3...T4 Ga
IECEx FTZU 23.0017X



CSA24CA80188655X - Exia Intrinsically Safe: Class I, Div 1, Grp A, B, C and D, T4/T3C. Class I, Zone 0, AEx ia IIC, T3C...T4 Ga. For hazardous location product warnings, refer to the operation manual.



XP3i complies with the ATEX, RoHS, Pressure Equipment, and Radio Equipment Directives. (Includes Bluetooth.)



XP3i complies with the Australian Radiocommunications (Electromagnetic Compatibility) Standard 2008. (Includes Bluetooth.)



Bluetooth, USA: **FCC ID: 2BD5G001**
Bluetooth, Canada: **IC: 31893-001**
Bluetooth, Japan: **205-240004**

MIL-STD-810H - Withstands 5 foot drop (without protective boot) and 10 foot drop (with boot) to steel plate for 6 orientations.

DATALOGGING

Capacity: **Greater than 200M data points**

Storage Type: **Non-volatile flash memory**

Minimum Interval: **5 Hz / five per second**

Maximum Interval: **24 hours**

Transfer Rates: **USB 5-10x faster than Bluetooth**

The One-Time Upgrade purchase allows the XP3i to log readings. This may be purchased at the time of order, or an upgrade package may be purchased afterwards.

Additional data features, and a demonstration mode are available at the link below:

CrystalControlWeb

SENSOR

Wetted Materials: (WRENCH TIGHT) **316 stainless steel**

(FINGER TIGHT) **316 stainless steel
and Viton® (internal o-ring)**

Diaphragm Seal Fluid: **Silicone Oil**

Connection: **Crystal CPF♦ Female**

All welded construction on sensors above 15 psi. (The 15 psi sensor has a Viton o-ring seal.)

Metal to metal cone seal; O-ring can be removed if necessary.

Optional connection on back.

1/4" male NPT adapter included unless BSP or M20 is specified.

1/4" medium pressure tube system compatible with HiP LM4 and LF4 Series, Autoclave Engr SF250CX Male and Female Series.

♦U.S. Patent No. 8,794,677

STORAGE TEMPERATURE

Temperature Range: **-40 to 75° C (-40 to 167° F)**

OVER-PRESSURE

Range	Specified to	Over-Pressure Warning	Potential Sensor Damage
1 bar/1.1 barA	1.1 bar/1.2 barA	1.27 bar/1.38 barA	3 bar/barA
2 bar	2.2 bar	2.3 bar	6 bar
7 bar	7.7 bar	8.1 bar	14 bar
20 bar	22 bar	23.0 bar	40 bar
30 bar	33 bar	34.5 bar	60 bar
70 bar	77 bar	80.5 bar	140 bar
140 bar	154 bar	161.0 bar	280 bar
200 bar	220 bar	230.0 bar	300 bar
300 bar	330 bar	345.0 bar	450 bar
700 bar	770 bar	805.0 bar	1050 bar
1000 bar	1100 bar	1150.0 bar	1300 bar

All ranges are specified to 110% of their range.

As a precaution, the "Over-Load Warning" will occur at 115% of the range, and the display will alternate between OL and the current reading until the pressure returns below 115% of the range.

The potential sensor damage is an estimated value, based on tests, at which permanent sensor damage is likely to occur.

XP3i Pressure Gauge **bar**

STANDARD DELIVERY

- XP3i Gauge
- Online Manual
- ISO 17025 Accredited Calibration Certificate, NIST Traceable. Includes Data at Multiple Temperatures, Covering the Full Temperature Compensated Range. (Proving temperature compensation - for each gauge individually.)
- Velcro Strap (except the -RP and -F4 options)
- 3 x AA Batteries
- CrystalConnect Mobile App (available in the app stores)
- Free PC Configuration at crystalcontrolweb.com
- CPF Connection Fitting (ranges 700 bar and lower)

ACCESSORIES

Protective Boot P/N 7095

Magnetic Hanging Strap P/N 5203

USB Cable USB-C/USB-A P/N 6885

USB Universal Adapter, Wall Mount, USB-A P/N 7190

Waterproof Carrying Case P/N 2888

COMPLEMENTARY PRODUCTS

Crystal Engineering offers a wide range of products that work with the XP3i:

- [Discounted three year calibration program](#)
- [Fittings that connect without tools, safely and without leaks](#)
- [Lightweight, super flexible high pressure hoses](#)
- [Pneumatic hand pumps](#)
- [Hydraulic hand pumps](#)
- [Portable pressure comparators](#)

*Autoclave Engineers Fluid Components is a division of Snap-tite, Inc. *HiP is High Pressure Equipment Company.

*Viton is a registered trademark of DuPont Performance Elastomers. *Skydrol is a registered trademark of Monsanto Chemical Corp.

RANGE & RESOLUTION TABLES

Gauge Pressure		Display Resolution									
P/N	Range (bar)	bar	mbar	in Hg	mm Hg	mm H ₂ O	kg/cm ²	psi	in H ₂ O	kPa	MPa
1BAR	1	0.0001	0.1	0.001	0.01	1	0.0001	0.001	0.01	0.01	0.00001
2BAR	2	0.0001	0.1	0.001	0.1	1	0.0001	0.001	0.01	0.01	0.00001
7BAR	7	0.0001	0.1	0.01	0.1	1	0.0001	0.01	0.1	0.01	0.00001
20BAR	20	0.001	1	0.01	1		0.001	0.01	0.1	0.1	0.0001
30BAR	30	0.001	1	0.1	1		0.001	0.01	1	0.1	0.0001
70BAR	70	0.001		0.1			0.001	0.1		0.1	0.0001
140BAR	140	0.01		0.1			0.01	0.1		1	0.001
200BAR	200	0.01		0.1			0.01	0.1		1	0.001
300BAR	300	0.01		1			0.01	0.1		1	0.001
700BAR	700	0.01					0.01	1		1	0.001
1KBAR	1000	0.01					0.01	1		1	0.001

Absolute Pressure		Display Resolution									
P/N	Range (barA)	bar	mbar	in Hg	mm H ₂ O	mm Hg	kg/cm ²	psi	in H ₂ O	kPa	MPa
A1,1BAR	1,1	0.0001	0.1	0.001	0.1	0.01	0.0001	0.001	0.01	0.01	0.00001
A10BAR	10	0.0001	0.1	0.01	1	0.1	0.0001	0.01	0.1	0.01	0.00001
A30BAR	30	0.001	1	0.1		1	0.001	0.01	1	0.1	0.0001
A70BAR	70	0.001		0.1			0.001	0.1		0.1	0.0001
A140BAR	140	0.01		0.1			0.01	0.1		1	0.001
A200BAR	200	0.01		0.1			0.01	0.1		1	0.001
A300BAR	300	0.01		1			0.01	0.1		1	0.001
A700BAR	700	0.01					0.01	1		1	0.001
A1KBAR	1000	0.01					0.01	1		1	0.001

CPF Adapter Fitting is not included with 1KBAR or A1KBAR models.

ORDERING INFORMATION

Model	P/N	Dual Display	Accuracy	Adapter Type	Connection Location	Data logging
XP3I-						
Standard:	No .. (omit)	0.05% of reading (omit)	NPT (omit)	Bottom (omit)	No (omit)	
Optional:	Yes -DD	0.02% of FS -S2	G 1/4 B -BSP	Back -RP	Yes -DL	
		0.05% of FS -S5	M20x1.5... -M20	Panel Mount .. -F4		

SAMPLE PART NUMBERS

XP3I-20BAR 20 bar standard gauge, with a 1/4" NPT pressure fitting.

XP3I-300BAR-S2-BSP-DL 300 bar gauge with 0.02% of FS accuracy, a 1/4" BSP pressure fitting, and Data logging.

XP3I-A700BAR-DD-GWX-W 700 bar absolute pressure Dual Display gauge with a System G pump system and a waterproof carrying case.

► Ordering a Pump System Only

Any pump system, carrying case, and connection fittings for an XP3i pressure gauge may be ordered separately from the gauge. Enter XP3I-NONE followed by the Pump System part number and the Carrying Case option code.

SAMPLE PART NUMBER

XP3I-NONE-BHX-W System B pump system with a waterproof carrying case.



Pump System*	Carrying Case~
No Pump.... (omit)	
System A.... -AXX	Aluminum ... (omit)
System A.... -AHX	Waterproof..... -W
System B.... -BXX	
System B.... -BHX	~ The Waterproof Case is an option for Systems A, B, and C only.
System C.... -CXX	
System C.... -CHX	The Waterproof Case is the only option for Systems G and H.
System D.... -DOX	
System D.... -DWX	
System E.... -EOX	
System F.... -FOV	
System F.... -FWV	
System G.... -GOX	
System G.... -GWX	

AMETEK offers a variety of solutions for pressure generation and measurement. Our line of products for pressure generation includes everything from small pneumatic hand pumps to a precision, hydraulic pressure comparator capable of generating up to 15 000 psi / 1000 bar / 100 MPa.

All of our pumps may be ordered as part of a Pump System, complete with an XP3i and delivered in a sturdy carrying case with custom insert.

* Refer to the following page for a more detailed description of each pump system.

PUMP SYSTEMS OVERVIEW

Pump System	Part Number	Pressure Range	Pneumatic	Hydraulic	Hand Pump	Bench Top	Included Pump	Case Options	
								Aluminum	Waterproof (Pelican Case)
System A	AXX	0 to 30psi / 2 bar	■		■		 T-960-CPF	■	■
	AHX	0 to 580 psi / 40 bar	■		■			(or)	■
System B	BXX	-25 inHg to 30 psi / -0.85 to 2 bar	■		■		 T-965-CPF	■	■
	BHX	-27 inHg to 580 psi / -0.91 to 40 bar	■		■			(or)	■
System C	CXX	0 to 3000 psi / 200 bar		■ (Oil)	■		 T-620-CPF	■	■
	CHX	0 to 5000 psi / 350 bar		■ (Oil)	■			(or)	■
System D	DOX	0 to 5000 psi / 350 bar		■ (Oil)		■	 P-018-CPF	■	
	DWX	0 to 5000 psi / 350 bar		■ (Water)		■		■	
System E	EOX	0 to 10 000 psi / 700 bar		■ (Oil)		■	 P014-CPF	■	
System F	FOV	0 to 15 000 psi / 1000 bar		■ (Oil)		■	 T-1-CPF	■	
	FWV	0 to 15 000 psi / 1000 bar		■ (Water)		■		■	
System G	GOX	0 to 15 000 psi / 1000 bar		■ (Oil)		■	 GaugeCalHP		■
	GWX	0 to 15 000 psi / 1000 bar		■ (Water)		■			■
System H	HOX	-27 inHg to 580 psi / -0.91 to 40 bar	■		■		 T-975-CPF (and) T-620H-CPF		■
		0 to 5000 psi / 350 bar		■ (Oil)	■				■