

**ACCURACY**

0 to 20% of Range:  $\pm(0.04\%$  of Full Scale)

20% to 110% of Range:  $\pm(0.2\%$  of Reading)

Vacuum:  $\pm(0.25\%$  of Full Scale\*)

\* Full Scale = -1.0 bar

*Includes all effects of linearity, hysteresis, repeatability, temperature, and stability for two years.*

*All models indicate vacuum, but vacuum specification applies to 2 bar, 10 bar, and 20 bar models only.*

*Not recommended for continuous use below -1.0 bar. Refer to [XP2i-DP data sheet](#) for gauges that are intended for continuous high vacuum use.*

**OPERATING TEMPERATURE**

Temperature Range: **-10 to 50° C (14 to 122° F)**

*Non-condensing. No change in accuracy over operating temperature range. Gauge must be zeroed to achieve rated specification.*

**DISPLAY**

Screen: **5 digits, 16.8 mm (0.66") high**

Display Rate: **4 readings/second**

*LCD readable in sunlight with bright backlight.*

**POWER**

2 x AA: **900 hours, typical**

Extended Battery Life: **1 reading/15 seconds: 3,000 hours**

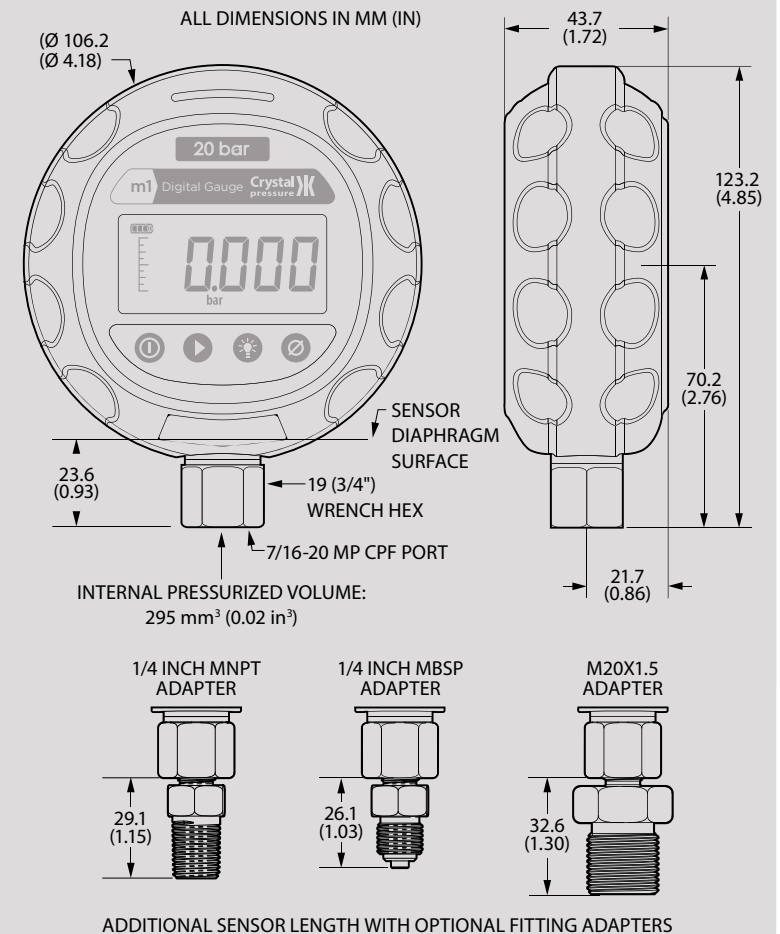
**1 reading/30 seconds: 6,000 hours**

**1 reading/60 seconds: 10,000 hours**

**1 reading/5 minutes: 25,000 hours**

**1 reading/10 minutes: 30,000 hours**

*Uses 2 alkaline AA (LR6) batteries. Use of backlight reduces operating time. Extended battery life is keypad selectable. Do not overtighten rear cover when replacing batteries.*



## ENCLOSURE

Weight: **331 g (11.7 oz)**

Rating: **IP65**

Housing: **Polyester/Polycarbonate Blend**

Keypad and Labels: **UV Resistant Polyester**

*Weight includes batteries and protective boot.*

*Water resistant housing incorporating o-ring seals [IEC 60529].*

*LCD protected from impact damage by polycarbonate lens under polyester window.*

*Skydrol® compatible.*

## 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, with a permanently filled diaphragm seal.*

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

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

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

*♦U.S. Patent No. 8,794,677*

## STORAGE TEMPERATURE

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

*Batteries should be removed if stored for more than one month.*

## SPECIAL FEATURES

Averaging: **Smooths unsteady readings (2 to 20 samples)**

Vertical Bar Graph: **Percent pressure indication for quick reference**

Capture: **Minimum (LO) and Maximum (HI)**

## CERTIFICATIONS



m1 complies with the Electromagnetic Compatibility and Pressure Equipment Directives. Refer to the EC Declaration of Conformity for specific details.



m1 is approved for use as a portable test instrument for Marine use and complies with Det Norsjke Veritas' Rules for Classification of Ships, High Speed & Light Craft, and Offshore Standards.



**RANGE & RESOLUTION TABLE**

P/N	Range (bar)	Over-Pressure	Display Resolution									
			bar	mbar	kPa	MPa	psi	in H <sub>2</sub> O	in Hg	mm Hg	mm H <sub>2</sub> O	kg/cm <sup>2</sup>
2BAR	2	3.0 x	0.0001	0.1	0.01		0.001	0.1	0.01	0.1	1	0.0001
10BAR	10	2.0 x	0.001	1	0.1	0.0001	0.01	0.1	0.01	1		0.001
20BAR	20	2.0 x	0.001	1	0.1	0.0001	0.01		0.1	1		0.001
100BAR	100	2.0 x	0.01		1	0.001	0.1		0.1			0.01
200BAR	200	1.5 x	0.01		1	0.001	0.1		1			0.01
700BAR	700	1.5 x	0.1			0.01	1		1			0.1

**ORDERING INFORMATION\***

Model	P/N	Adapter Type	CPF* Fitting Kits	Pump System**	Liquid (Systems C-H)	Carrying Case~
M1	—	—	—	—	—	—
Standard:	NPT . . . . . (omit)	No . . . . . (omit)	No Pump . . . . . (omit)			
Optional:	G 1/4 B . . . . -BSP	NPT Kit (4013) . . . -N	System A (pneumatic) 0 to 2 bar . . . . . -AXX	Full . . . . . (omit)	Aluminum . . . (omit)	
	M20x1.5 . . . -M20	BSP Kit (4015) . . . -B	System A (pneumatic) 0 to 40 bar . . . . . -AHX	Drained . . . . . -E	Waterproof . . . . -W	
			System B (pneumatic) -0.91 to 2 bar . . . . . -BXX			
			System B (pneumatic) -0.91 to 40 bar . . . . . -BHX			
			System C (oil) 0 to 200 bar . . . . . -CXX			
			System C (oil) 0 to 350 bar . . . . . -CHX			
			System D (oil) 0 to 350 bar . . . . . -DOX			
			System D (water) 0 to 350 bar . . . . . -DWX			
			System E (oil) 0 to 700 bar . . . . . -EOX			
			System F (oil) 0 to 1000 bar . . . . . -FOV			
			System F (water) 0 to 1000 bar . . . . . -FWV			
			System G (oil) 0 to 1000 bar . . . . . -GOX			
			System G (water) 0 to 1000 bar . . . . . -GWX			
			System H (oil/pneumatic) -0.91 to 40 bar and 0 to 350 bar . . . . . -HOX			

\* CPF Fitting Kits can **only** be ordered as part of a Pump System. All fittings are rated to 700 bar, with the exception of the MPF-1/2QTF rated to 350 bar.

\*\* Refer to the following page for a more detailed description of each Pump System.

~ The Waterproof Case is an **option** for Systems A, B, and Conly. The Waterproof Case is **the only option** for Systems G and H.

**SAMPLE PART NUMBERS**

M1-20BAR . . . . . 20 bar standard gauge, with a 1/4" NPT pressure fitting.  
M1-100BAR-BSP . . . . . 100 bar gauge, with a 1/4" BSP pressure fitting.  
M1-200BAR-N-CXX-E-W 200 bar standard gauge with an NPT CPF fitting kit; a System C pump system; no liquid; and a waterproof carrying case.

**► Ordering a Pump System Only**

Any pump system, carrying case, and connection fittings for an m1 pressure gauge may be ordered separately from the gauge. Enter M1-NONE followed by the Pump System part number and the Carrying Case option code.

**SAMPLE PART NUMBER**

M1-NONE-GOX-W . . . . . System G pump system with a waterproof carrying case.

\* BAR versions available in USA direct from factory only.



900 Series



600 Series



P-018-CPF



P014



T-1-CPF



GaugeCalHP

## PUMP SYSTEMS

All pump systems for the m1 include 1/4 NPT and BSP female fittings and a carrying case with custom insert. Additional fittings and accessories included with individual systems are listed below.

- ▶ **Systems A...** AXX (T-960), AHX (T-970)  
MPH-1 hose, bonded seals, o-ring kit, and teflon tape.
- ▶ **Systems B...** BXX (T-965), BHX (T-975-CPF)  
MPH-1 hose, bonded seals, o-ring kit, and teflon tape.
- ▶ **Systems C...** CXX (T-620), CHX (T-620H-CPF)  
MPH-1 hose, MPF-CAP, MPM-PLUG, bonded seals, o-ring kit, and teflon tape.
- ▶ **Systems D...** DOX and DWX (P-018-CPF)  
Bonded seals, o-ring kit, and teflon tape.
- ▶ **System E...** EOX (P014)  
Bonded seals, o-ring kit, and teflon tape.
- ▶ **Systems F...** FOV and FWV (T-1-CPF)  
Bonded seals, o-ring kit, and teflon tape.
- ▶ **Systems G ...** GOX and GWX (GaugeCalHP)  
Carrying case hold-down straps.
- ▶ **System H...** HOX (T-975-CPF and T-620H-CPF)  
MPF-CAP, MPM-PLUG, bonded seals, o-ring kit, and teflon tape.

## CPF FITTING KITS

- ▶ **NPT Kit...** -N (4013)  
Includes MPF-1/8QTF, MPF-1/4QTF, and MPF-1/2QTF.
- ▶ **BSP Kit...** -B (4015)  
Includes MPF-1/8BSPF, MPF-1/4BSPF, MPF-3/8BSPF, and MPF-1/2BSPF.

## ACCESSORIES



### Protective Boot P/N 3436 (included)

Protect your m1 from harsh environments with our form fitting chemical resistant thermoplastic boot (Skydrol fluid compatible).

## COMPLIMENTARY PRODUCTS

Crystal Engineering offers a wide range of products that work with the m1:

- [Fittings that connect without tools, safely and without leaks](#)
- [Lightweight, super flexible high pressure hoses](#)
- [Fitting kits and adapters](#)
- [Pneumatic hand pumps](#)
- [Hydraulic hand pumps](#)
- [Portable pressure comparators](#)