

**ACCURACY-PRESSURE MEASUREMENT**

0 to 110% of Range: **±(0.05% of Reading + Floor Term)**  
 Floor Term: **0.005% of FS or display resolution, whichever is greater**  
 Vacuum: **±(0.25% of Reading + Vacuum Floor Term)**  
 Vacuum Floor Term: **0.004 psi for 16 and 36 psi**  
**0.01 psi for 300 psi**

*Includes all effects of linearity, hysteresis, repeatability, temperature, and stability for one year.*  
 All models indicate vacuum, but vacuum specification applies to 16 psi, 36 psi, and 300 psi models only.  
 Not recommended for continuous use below -14.5 psi. Refer to [XP2i-DP data sheet](#) for gauges that are intended for continuous high vacuum use.

**ACCURACY-MILLIAMPERES**

Accuracy: **±(0.025% of Reading + 0.001 mA)**  
 Range: **0 to 55 mA**  
 Resolution: **0.001 mA**  
 Connection: **4 mm jacks, 19 mm (0.75") spacing**

*Includes all effects of linearity, hysteresis, repeatability, temperature, and stability for one year.*  
 mA can be displayed as a percentage, where 0 to 100% corresponds to either 4 to 20 mA or 10 to 50 mA.  
 Jacks are compatible with safety sheathed banana plugs.

**OPERATING TEMPERATURE**

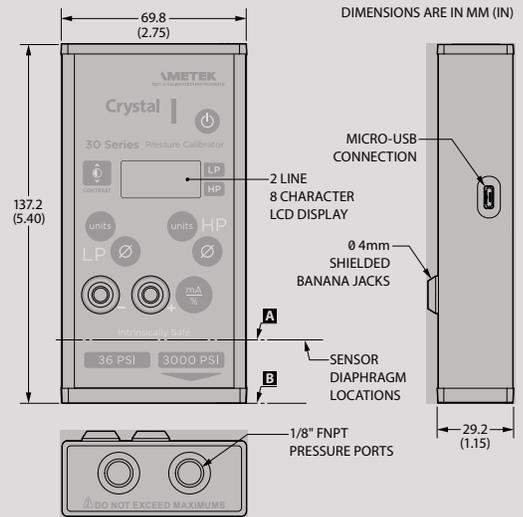
Temperature Range: **0 to 50° C (32 to 122° F)**

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

**DISPLAY**

Screen: **2 lines of up to 6 digits, 5 mm (0.2") high**  
 Display Rate: **2 readings/second (Adjustable to 1, 3, or 3.7 readings/second)**

*LCD readable in sunlight.*



**PRESSURE PORT VOLUMETRIC DATA:**  
 LP distance to diaphragm (A to B): 22.4 (0.88")  
 LP volume: 2 ml (0.13 cubic inches)  
 HP distance to diaphragm (A to B): 17.8 (0.70")  
 HP volume: 1 ml (0.06 cubic inches)

**POWER**

The 30 Series is Intrinsically Safe only if powered by one of the following battery types.

ATEX/IECEx:	Approved Battery Type	Ta=	Marking
	Duracell Alkaline 9V, MN 1604	0 to 50° C	Ex ia IIC T4 Gb
	Energizer Alkaline 9V, 522		
	Energizer Lithium 9V, L522		
	Varta High Energy Alkaline 9V, 4922	0 to 45° C	

CSA:	Approved Battery Type	Marking
	Duracell Alkaline 9V, MN 1604	Class I, Division 1, A, B, C, D T4
	Energizer Alkaline 9V, 522	
	Energizer Lithium 9V, L522	
	Varta High Energy Alkaline 9V, 4922	Class I, Division 1, A, B, C, D T3C

1 x 9V: **90 hours, typical**

Uses one alkaline 9V battery. Use of USB interface reduces operating time.

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

**DATA/COMMUNICATION**

Digital Interface: **micro-USB**

Free Labview drivers available online.

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

**ENCLOSURE**

Model 31 ≤300 psi: **342 g (12.0 oz)**

Weight includes batteries.

\*Model 31 ≤300 psi: **428 g (15.0 oz)**

\*SPSS optional manifold.

Model 31 ≥1500 psi: **360 g (13.0 oz)**

Nylon carry case included.

Model 33: **400 g (14.0 oz)**

\*Model 33: **485 g (17.0 oz)**

Housing: **Extruded aluminum**

Keypad and Labels: **UV resistant polyester**

**CERTIFICATIONS**



**II 2G Ex ia IIC T4**  
FTZU 06 ATEX 0010X



**II 2G Ex ia IIC T4 Gb**  
IECEx FTZU 10.0018X



Exia Intrinsically Safe and Non-incendive for Hazardous Locations: Class I, Division 1, Groups A, B, C and D, Temperature Code T4 or T3C. For hazardous location product warnings, refer to the operation manual.



30 Series complies with the Electromagnetic Compatibility and the Pressure Equipment Directives.



30 Series complies with the Australian Radiocommunications (Electromagnetic Compatibility) Standard 2008



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

### SENSOR ≥ 1500 psi

Wetted Materials: **316 stainless steel** *All welded with a permanently filled diaphragm seal.*  
Diaphragm Seal Fluid: **Silicone Oil**  
Connection: **Bottom, 1/8" female NPT**

### SENSOR ≤ 300 psi

Wetted Materials: **316 stainless steel, Viton® (o-ring)** *Viton o-ring is internal.*  
**Anodized aluminum penetrated with PTFE (polytetrafluoroethylene)** *All welded with a permanently filled diaphragm seal.*  
Diaphragm Seal Fluid: **Silicone Oil**  
Connection: **Bottom, 1/8" female NPT**

### STORAGE TEMPERATURE

Temperature Range: **-20 to 70° C (-4 to 158° F)** *Batteries should be removed if stored for more than one month.*

### SPECIAL FEATURES

The following requires the use of [ConfigM30](#) software

- User Defined Unit: **Allows the user to define and display any pressure units not included, or to use the gauge to display force, level, or other pressure related parameters. Reduce or increase displayed resolution.**
- Remove: **Unwanted pressure units from Units button.**
- Password Protect: **Changes to configuration or userspan calibration factor(s).**
- Save: **Configuration to a file.**
- Copy: **Configuration to other calibrators.**

### STANDARD DELIVERY

- 30 Series Calibrator
- CD Manual
- ISO 17025 Accredited Calibration Certificate, NIST Traceable
- Carry Case and Strap (P/N 2490)

### ACCESSORIES

- Magnetic Hanging Strap** [P/N 5203](#)
- Test Lead Kit** [P/N 1351](#)
- USB A to Micro USB Cable** [P/N 4431](#)
- Waterproof Carrying Case** [P/N 2888](#)

### COMPLEMENTARY PRODUCTS

Crystal Engineering offers a wide range of products that work with the 30 Series:

- [Fittings that connect without tools, safely and without leaks](#)
- [Lightweight, super flexible high pressure hoses](#)
- [Pneumatic hand pumps](#)
- [Hydraulic hand pumps](#)
- [Portable pressure comparators](#)
- [Software, for the quickest way to calibrate pressure transmitters and gauges](#)

Viton is a registered trademark of DuPont Performance Elastomers.

**RANGE & RESOLUTION TABLE**

P/N	Range (psi)	Over-pressure	Display Resolution										
			psi	in H <sub>2</sub> O	in Hg	mm Hg	mm H <sub>2</sub> O	cm H <sub>2</sub> O	kg/cm <sup>2</sup>	bar	mbar	kPa	MPa
16	16	6.5 x	0.001	0.01	0.001	0.01	1		0.0001		0.1	0.01	
36	36	3.0 x	0.001	0.01	0.001	0.01	1		0.0001		0.1	0.01	
300	300	2.0 x	0.01	0.1	0.01	0.1		1	0.001	0.001		0.1	
1500	1500	2.0 x	0.1						0.01	0.01		1	0.001
3000	3000	1.5 x	0.1						0.01	0.01		1	0.001
5000	● 5000	1.5 x	0.1						0.01	0.01		1	0.001

● Model 31 calibrators are not available in this range.

**DUAL PRESSURE SENSORS**

Model 33 calibrators have dual pressure sensors. This chart shows all of the available sensor combinations. ■

First Pressure Ranges	Second Pressure Ranges			
	300 psi	1500 psi	3000 psi	5000 psi
16 psi	■	■	■	■
36 psi	■	■	■	■
300 psi		■	■	

**ORDERING INFORMATION**

Intrinsic Safety	Model	1st Pressure Range P/N	2nd Pressure Range P/N	Pressure Unit	Pressure Manifold
IS				PSI	
	Single Sensor....31				Standard.....(omit)
	Dual Sensor....33				Stainless Steel....SPSS

Pump System*	Carrying Case~
No Pump....(omit)	
System A....-AXX	Aluminum...(omit)
System A....-AHX	Waterproof.....-W
System B....-BXX	
System B....-BHX	
System C....-CXX	
System C....-CHX	
System D....-DOX	
System D....-DWX	
System E....-EOX	
System F....-FOV	
System F....-FWV	
System G....-GOX	
System G....-GWX	
System H....-HOX	

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

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 a 30 Series and delivered in a sturdy carrying case with custom insert.

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

**SAMPLE PART NUMBERS**

- IS31-36PSI ..... Calibrator with one sensor (36 psi).
- IS33-16/1500PSI-SPSS ..... Calibrator with two sensors (16 psi and 1500 psi) with two stainless steel manifolds.
- IS33-36/3000PSI-SPSS-HOX-W ..... Calibrator with two sensors (36 psi and 3000 psi) and two stainless steel manifolds with a System H pump system and a waterproof carrying case.

**Ordering a Pump System Only**

Any pump system, carrying case, and connection fittings for a 30 Series calibrator may be ordered separately from the calibrator. Enter IS30-NONE followed by the Pump System part number and the Carrying Case option code.

**SAMPLE PART NUMBER**

- IS30-NONE-HOX-W ..... System H pump system with a waterproof carrying case.

**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	■		■		 T-970-CPF	■	■
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	■		■		 T-975-CPF	■	■
System C	CXX	0 to 3000 psi /200 bar		■ (Oil)	■		 T-620-CPF	■	■
	CHX	0 to 5000 psi /350 bar		■ (Oil)	■		 T-620H-CPF	■	■
System D	DOX	0 to 5000 psi /350 bar		■ (Oil)		■	 P-018-CPF	■	
	DWX	0 to 5000 psi /350 bar		■ (Water)		■	 P-014-CPF	■	
System E	EOX	0 to 10 000 psi /700 bar		■ (Oil)		■	 T-1-CPF	■	
System F	FOV	0 to 15 000 psi /1000 bar		■ (Oil)		■	 GaugeCalHP	■	■
	FWV	0 to 15 000 psi /1000 bar		■ (Water)		■	 GaugeCalHP	■	■
System G	GOX	0 to 15 000 psi /1000 bar		■ (Oil)		■	 T-975-CPF		■
	GWX	0 to 15 000 psi /1000 bar		■ (Water)		■	 T-620H-CPF		■
System H	HOX	-27 inHg to 580 psi /-0.91 to 40 bar	■		■		 T-975-CPF		■
		0 to 5000 psi /350 bar		■ (Oil)	■		 T-620H-CPF		■



## 30 Series Calibrator bar

### ACCURACY—PRESSURE MEASUREMENT

- 0 to 110% of Range:  $\pm(0.05\%$  of Reading + Floor Term)
- Floor Term: **0.005% of FS or display resolution, whichever is greater**
- Vacuum:  $\pm(0.25\%$  of Reading + Vacuum Floor Term)
- Vacuum Floor Term: **0.0003 bar for 1 and 2 bar**  
**0.001 bar for 20 bar**

*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, and 20 bar models only.*

*Not recommended for continuous use below -1 bar. Refer to [XP2i-DP data sheet](#) for gauges that are intended for continuous high vacuum use.*

### ACCURACY—MILLIAMPERES

- Accuracy:  $\pm(0.025\%$  of Reading + 0.001 mA)
- Range: **0 to 55 mA**
- Resolution: **0.001 mA**
- Connection: **4 mm jacks, 19 mm (0.75") spacing**

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

*mA can be displayed as a percentage, where 0 to 100% corresponds to either 4 to 20 mA or 10 to 50 mA.*

*Jacks are compatible with safety sheathed banana plugs.*

### OPERATING TEMPERATURE

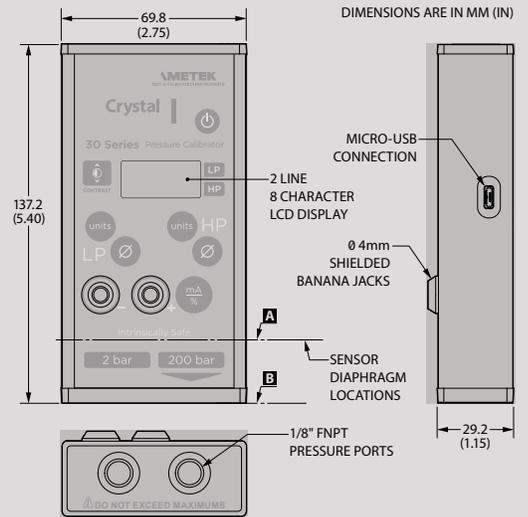
- Temperature Range: **0 to 50° C (32 to 122° F)**

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

### DISPLAY

- Screen: **2 lines of up to 6 digits, 5 mm (0.2") high**
- Display Rate: **2 readings/second (Adjustable to 1, 3, or 3.7 readings/second)**

*LCD readable in sunlight.*



#### PRESSURE PORT VOLUMETRIC DATA:

LP distance to diaphragm (A to B): 22.4 (0.88")

LP volume: 2 ml (0.13 cubic inches)

HP distance to diaphragm (A to B): 17.8 (0.70")

HP volume: 1 ml (0.06 cubic inches)

**POWER**

The 30 Series is Intrinsically Safe only if powered by one of the following battery types.

ATEX/IECEx:	Approved Battery Type	Ta=	Marking
	Duracell Alkaline 9V, MN 1604	0 to 50° C	Ex ia IIC T4 Gb
	Energizer Alkaline 9V, 522		
	Energizer Lithium 9V, L522		
	Varta High Energy Alkaline 9V, 4922	0 to 45° C	

CSA:	Approved Battery Type	Marking
	Duracell Alkaline 9V, MN 1604	Class I, Division 1, A, B, C, D T4
	Energizer Alkaline 9V, 522	
	Energizer Lithium 9V, L522	
	Varta High Energy Alkaline 9V, 4922	Class I, Division 1, A, B, C, D T3C

1 x 9V: **90 hours, typical**

Uses one alkaline 9V battery. Use of USB interface reduces operating time.

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

**DATA/COMMUNICATION**

Digital Interface: **micro-USB**

Free Labview drivers available online.

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

**ENCLOSURE**

Model 31 ≤20 bar: **342 g (12.0 oz)**

Weight includes batteries.

\*Model 31 ≤20 bar: **428 g (15.0 oz)**

\*SPSS optional manifold.

Model 31 ≥100 bar: **360 g (13.0 oz)**

Nylon carry case included.

Model 33: **400 g (14.0 oz)**

\*Model 33: **485 g (17.0 oz)**

Housing: **Extruded aluminum**

Keypad and Labels: **UV resistant polyester**

**CERTIFICATIONS**



**II 2G Ex ia IIC T4**  
FTZU 06 ATEX 0010X



**II 2G Ex ia IIC T4 Gb**  
IECEx FTZU 10.0018X



Exia Intrinsically Safe and Non-incendive for Hazardous Locations: Class I, Division 1, Groups A, B, C and D, Temperature Code T4 or T3C. For hazardous location product warnings, refer to the operation manual.



30 Series complies with the Electromagnetic Compatibility and the Pressure Equipment Directives.



30 Series complies with the Australian Radiocommunications (Electromagnetic Compatibility) Standard 2008



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

### SENSOR ≥ 100 bar

Wetted Materials: **316 stainless steel**

*All welded with a permanently filled diaphragm seal.*

Diaphragm Seal Fluid: **Silicone Oil**

Connection: **Bottom, 1/8" female NPT**

### SENSOR ≤ 20 bar

Wetted Materials: **316 stainless steel, Viton® (o-ring)**

*Viton o-ring is internal.*

**Anodized aluminum penetrated with PTFE (polytetrafluoroethylene)**

*All welded with a permanently filled diaphragm seal.*

Diaphragm Seal Fluid: **Silicone Oil**

Connection: **Bottom, 1/8" female NPT**

### STORAGE TEMPERATURE

Temperature Range: **-20 to 70° C (-4 to 158° F)**

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

### SPECIAL FEATURES

The following requires the use of [ConfigM30](#) software

User Defined Unit: **Allows the user to define and display any pressure units not included, or to use the gauge to display force, level, or other pressure related parameters. Reduce or increase displayed resolution.**

Remove: **Unwanted pressure units from Units button.**

Password Protect: **Changes to configuration or userspan calibration factor(s).**

Save: **Configuration to a file.**

Copy: **Configuration to other calibrators.**

### STANDARD DELIVERY

- 30 Series Calibrator
- CD Manual
- ISO 17025 Accredited Calibration Certificate, NIST Traceable
- Carry Case and Strap (P/N 2490)

### ACCESSORIES

**Magnetic Hanging Strap P/N 5203**

**Test Lead Kit P/N 1351**

**USB A to Micro USB Cable P/N 4431**

**Waterproof Carrying Case P/N 2888**

### COMPLEMENTARY PRODUCTS

**Crystal Engineering offers a wide range of products that work with the 30 Series:**

- [Fittings that connect without tools, safely and without leaks](#)
- [Lightweight, super flexible high pressure hoses](#)
- [Pneumatic hand pumps](#)
- [Hydraulic hand pumps](#)
- [Portable pressure comparators](#)
- [Software, for the quickest way to calibrate pressure transmitters and gauges](#)

Viton is a registered trademark of DuPont Performance Elastomers.

**RANGE & RESOLUTION TABLES**

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	cm H <sub>2</sub> O	kg/cm <sup>2</sup>
1	1	6.5 x	0.0001	0.1	0.01		0.001	0.01		0.01	1		0.0001
2	2	3.0 x	0.0001	0.1	0.01		0.001	0.01		0.01	1		0.0001
20	20	2.0 x	0.001		0.1		0.01	0.1	0.01	0.1		1	0.001
100	100	2.0 x	0.01		1	0.001	0.1						0.01
200	200	1.5 x	0.01		1	0.001	0.1						0.01
300	300	1.5 x	0.01		1	0.001	0.1						0.01

○ Model 31 calibrators are not available in this range.

**DUAL PRESSURE SENSORS**

Model 33 calibrators have dual pressure sensors. This chart shows all of the available sensor combinations. ■

First Pressure Ranges	Second Pressure Ranges			
	20 bar	100 bar	200 bar	300 bar
1 bar	■	■	■	■
2 bar	■	■	■	■
20 bar		■	■	

**ORDERING INFORMATION\***

Intrinsic Safety	Model	1st Pressure Range P/N	2nd Pressure Range P/N	Pressure Unit	Pressure Manifold
IS				BAR	
	Single Sensor....31				Standard.....(omit)
	Dual Sensor....33				Stainless Steel....SPSS

Pump System*	Carrying Case~
No Pump....(omit)	
System A....-AXX	Aluminum...(omit)
System A....-AHX	Waterproof.....-W
System B....-BXX	
System B....-BHX	
System C....-CXX	
System C....-CHX	
System D....-DOX	
System D....-DWX	
System E....-EOX	
System F....-FOV	
System F....-FWV	
System G....-GOX	
System G....-GWX	
System H....-HOX	

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

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 a 30 Series and delivered in a sturdy carrying case with custom insert.

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

**SAMPLE PART NUMBERS**

- IS31-2BAR ..... Calibrator with one sensor (2 bar).
- IS33-1/100BAR-SPSS ..... Calibrator with two sensors (1 bar and 100 bar) with two stainless steel manifolds.
- IS33-2/200BAR-SPSS-HOX-W ..... Calibrator with two sensors (2 bar and 200 bar) and two stainless steel manifolds with a System H pump system and a waterproof carrying case.

**Ordering a Pump System Only**

Any pump system, carrying case, and connection fittings for a 30 Series calibrator may be ordered separately from the calibrator. Enter IS30-NONE followed by the Pump System part number and the Carrying Case option code.

**SAMPLE PART NUMBER**

- IS30-NONE-HOX-W ..... System H pump system with a waterproof carrying case.

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

**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	■		■		 T-970-CPF	■	■
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	■		■		 T-975-CPF	■	■
System C	CXX	0 to 3000 psi /200 bar		■ (Oil)	■		 T-620-CPF	■	■
	CHX	0 to 5000 psi /350 bar		■ (Oil)	■		 T-620H-CPF	■	■
System D	DOX	0 to 5000 psi /350 bar		■ (Oil)		■	 P-018-CPF	■	
	DWX	0 to 5000 psi /350 bar		■ (Water)		■	 P-014-CPF	■	
System E	EOX	0 to 10 000 psi /700 bar		■ (Oil)		■	 P-014-CPF	■	
System F	FOV	0 to 15 000 psi /1000 bar		■ (Oil)		■	 T-1-CPF	■	
	FWV	0 to 15 000 psi /1000 bar		■ (Water)		■	 T-1-CPF	■	
System G	GOX	0 to 15 000 psi /1000 bar		■ (Oil)		■	 GaugeCalHP		■
	GWX	0 to 15 000 psi /1000 bar		■ (Water)		■	 GaugeCalHP		■
System H	HOX	-27 inHg to 580 psi /-0.91 to 40 bar	■		■		 T-975-CPF		■
		0 to 5000 psi /350 bar		■ (Oil)	■		 T-620H-CPF		■



## 30 Series Calibrator kPa

### ACCURACY—PRESSURE MEASUREMENT

0 to 110% of Range:  $\pm(0.05\%$  of Reading + Floor Term)  
 Floor Term: **0.005% of FS or display resolution, whichever is greater**  
 Vacuum:  $\pm(0.25\%$  of Reading + Vacuum Floor Term)  
 Vacuum Floor Term: **0.03 kPa for 100 and 200 kPa**  
**0.1 kPa for 2000 kPa**

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

*All models indicate vacuum, but vacuum specification applies to 100 kPa, 200 kPa, and 2000 kPa models only.*

*Not recommended for continuous use below -100 kPa. Refer to [XP2I-DP data sheet](#) for gauges that are intended for continuous high vacuum use.*

### ACCURACY—MILLIAMPERES

Accuracy:  $\pm(0.025\%$  of Reading + 0.001 mA)  
 Range: **0 to 55 mA**  
 Resolution: **0.001 mA**  
 Connection: **4 mm jacks, 19 mm (0.75") spacing**

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

*mA can be displayed as a percentage, where 0 to 100% corresponds to either 4 to 20 mA or 10 to 50 mA.*

*Jacks are compatible with safety sheathed banana plugs.*

### OPERATING TEMPERATURE

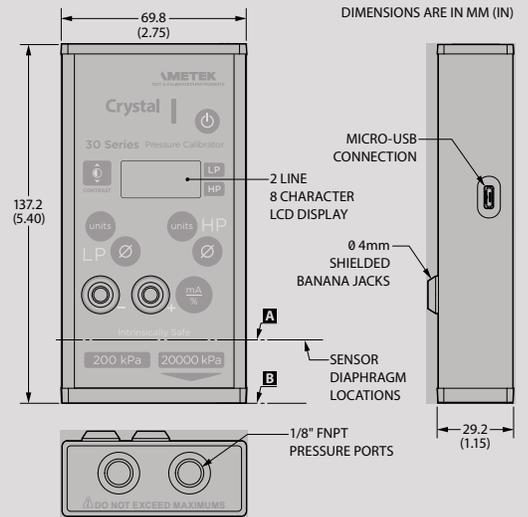
Temperature Range: **0 to 50° C (32 to 122° F)**

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

### DISPLAY

Screen: **2 lines of up to 6 digits, 5 mm (0.2") high**  
 Display Rate: **2 readings/second (Adjustable to 1, 3, or 3.7 readings/second)**

*LCD readable in sunlight.*



#### PRESSURE PORT VOLUMETRIC DATA:

LP distance to diaphragm (A to B): 22.4 (0.88")  
 LP volume: 2 ml (0.13 cubic inches)

HP distance to diaphragm (A to B): 17.8 (0.70")  
 HP volume: 1 ml (0.06 cubic inches)

**POWER**

The 30 Series is Intrinsically Safe only if powered by one of the following battery types.

ATEX/IECEx:	Approved Battery Type	Ta=	Marking
	Duracell Alkaline 9V, MN 1604	0 to 50° C	Ex ia IIC T4 Gb
	Energizer Alkaline 9V, 522		
	Energizer Lithium 9V, L522		
	Varta High Energy Alkaline 9V, 4922	0 to 45° C	

CSA:	Approved Battery Type	Marking
	Duracell Alkaline 9V, MN 1604	Class I, Division 1, A, B, C, D T4
	Energizer Alkaline 9V, 522	
	Energizer Lithium 9V, L522	
	Varta High Energy Alkaline 9V, 4922	Class I, Division 1, A, B, C, D T3C

1 x 9V: **90 hours, typical**

Uses one alkaline 9V battery. Use of USB interface reduces operating time.

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

**DATA/COMMUNICATION**

Digital Interface: **micro-USB**

Free Labview drivers available online.

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

**ENCLOSURE**

Model 31 ≤ 2000 kPa: **342 g (12.0 oz)**

Weight includes batteries.

\* Model 31 ≤ 2000 kPa: **428 g (15.0 oz)**

\* SPSS optional manifold.

Model 31 ≥ 10 000 kPa: **360 g (13.0 oz)**

Nylon carry case included.

Model 33: **400 g (14.0 oz)**

\* Model 33: **485 g (17.0 oz)**

Housing: **Extruded aluminum**

Keypad and Labels: **UV resistant polyester**

**CERTIFICATIONS**



**II 2G Ex ia IIC T4**  
FTZU 06 ATEX 0010X



**II 2G Ex ia IIC T4 Gb**  
IECEx FTZU 10.0018X



Exia Intrinsically Safe and Non-incendive for Hazardous Locations: Class I, Division 1, Groups A, B, C and D, Temperature Code T4 or T3C. For hazardous location product warnings, refer to the operation manual.



30 Series complies with the Electromagnetic Compatibility and the Pressure Equipment Directives.



30 Series complies with the Australian Radiocommunications (Electromagnetic Compatibility) Standard 2008



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

**SENSOR ≥ 10 000 kPa**

Wetted Materials: **316 stainless steel** *All welded with a permanently filled diaphragm seal.*  
Diaphragm Seal Fluid: **Silicone Oil**  
Connection: **Bottom, 1/8" female NPT**

**SENSOR ≤ 2000 kPa**

Wetted Materials: **316 stainless steel, Viton® (o-ring)** *Viton o-ring is internal.*  
**Anodized aluminum penetrated with PTFE (polytetrafluoroethylene)** *All welded with a permanently filled diaphragm seal.*  
Diaphragm Seal Fluid: **Silicone Oil**  
Connection: **Bottom, 1/8" female NPT**

**STORAGE TEMPERATURE**

Temperature Range: **-20 to 70° C (-4 to 158° F)** *Batteries should be removed if stored for more than one month.*

**SPECIAL FEATURES**

The following requires the use of [ConfigM30](#) software

- User Defined Unit: **Allows the user to define and display any pressure units not included, or to use the gauge to display force, level, or other pressure related parameters. Reduce or increase displayed resolution.**
- Remove: **Unwanted pressure units from Units button.**
- Password Protect: **Changes to configuration or userspan calibration factor(s).**
- Save: **Configuration to a file.**
- Copy: **Configuration to other calibrators.**

**STANDARD DELIVERY**

- 30 Series Calibrator
- CD Manual
- ISO 17025 Accredited Calibration Certificate, NIST Traceable
- Carry Case and Strap (P/N 2490)

**ACCESSORIES**

- Magnetic Hanging Strap P/N 5203**
- Test Lead Kit P/N 1351**
- USB A to Micro USB Cable P/N 4431**
- Waterproof Carrying Case P/N 2888**

**COMPLEMENTARY PRODUCTS**

Crystal Engineering offers a wide range of products that work with the 30 Series:

- [Fittings that connect without tools, safely and without leaks](#)
- [Lightweight, super flexible high pressure hoses](#)
- [Pneumatic hand pumps](#)
- [Hydraulic hand pumps](#)
- [Portable pressure comparators](#)
- [Software, for the quickest way to calibrate pressure transmitters and gauges](#)

Viton is a registered trademark of DuPont Performance Elastomers.

**RANGE & RESOLUTION TABLE**

P/N	Range (kPa)	Over-pressure	Display Resolution			
			kPa	MPa	bar	mbar
100	100	6.5 x	0.01		0.0001	0.1
200	200	3.0 x	0.01		0.0001	0.1
2000	2000	2.0 x	0.1		0.001	
10 000	10 000	2.0 x	1	0.001	0.01	
20 000	20 000	1.5 x	1	0.001	0.01	
30 000	30 000	1.5 x	1	0.001	0.01	

Model 31 calibrators are not available in this range.

**DUAL PRESSURE SENSORS**

Model 33 calibrators have dual pressure sensors. This chart shows all of the available sensor combinations. ■

First Pressure Ranges	Second Pressure Ranges			
	2000 kPa	10 000 kPa	20 000 kPa	30 000 kPa
	100 kPa	■	■	■
200 kPa	■	■	■	■
2000 kPa		■	■	

**ORDERING INFORMATION\***

Intrinsic Safety	Model	1st Pressure Range P/N	2nd Pressure Range P/N	Pressure Unit	Pressure Manifold
IS				KPA	
	Single Sensor.... <b>31</b>				Standard.....(omit)
	Dual Sensor.... <b>33</b>				Stainless Steel.... <b>SPSS</b>

Pump System*	Carrying Case~
No Pump.... (omit)	
System A.... - <b>AXX</b>	Aluminum ... (omit)
System A.... - <b>AHX</b>	Waterproof..... - <b>W</b>
System B.... - <b>BXX</b>	
System B.... - <b>BHX</b>	
System C.... - <b>CXX</b>	
System C.... - <b>CHX</b>	
System D.... - <b>DOX</b>	
System D.... - <b>DWX</b>	
System E.... - <b>EOX</b>	
System F.... - <b>FOV</b>	
System F.... - <b>FWV</b>	
System G.... - <b>GOX</b>	
System G.... - <b>GWX</b>	
System H.... - <b>HOX</b>	

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 a 30 Series and delivered in a sturdy carrying case with custom insert.

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

**SAMPLE PART NUMBERS**

- IS31-200KPA ..... Calibrator with one sensor (200 kPa).
- IS33-200/20000KPA ..... Calibrator with two sensors (200 kPa and 20 000 kPa).
- IS33-200/30000KPA-SPSS-HOX-W ..... Calibrator with two sensors (200 kPa and 30 000 kPa) and two stainless steel manifolds with a System H pump system and a waterproof carrying case.

**Ordering a Pump System Only**

Any pump system, carrying case, and connection fittings for a 30 Series calibrator may be ordered separately from the calibrator. Enter IS30-NONE followed by the Pump System part number and the Carrying Case option code.

**SAMPLE PART NUMBER**

IS30-NONE-HOX-W ..... System H pump system with a waterproof carrying case.

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

**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	■		■		T-970-CPF	(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	■		■		T-975-CPF	(or)	■
System C	CXX	0 to 3000 psi /200 bar		■ (Oil)	■		 T-620-CPF	■	■
	CHX	0 to 5000 psi /350 bar		■ (Oil)	■		T-620H-CPF	(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)		■
		0 to 5000 psi /350 bar		■ (Oil)	■		T-620H-CPF		■