

JOFRA™ APM

Advanced Pressure Module



Add functionality to your JOFRA calibrator. The APM series of pressure modules offers you the flexibility you need to perform pressure calibrations with your multi-purpose or multi-function signal calibrator. Expand the ranges to meet all of your pressure calibration applications.

Accuracies to 0.01% of FS

Performance to meet most application requirements.

Dedicated ranges

Both imperial and metric ranges for worldwide use without conversions.

Several pressure references:

Gauge, differential, absolute, and vacuum references available.

Rugged construction

Engineered for use in the laboratory or in the field.

Plug and pressurize

Calibrators recognize range and reference of the modules for ease use.

Multiple applications

Use a module with one or more JOFRA calibrators or use one or more modules with one JOFRA calibrator.



PRODUCT DESCRIPTION

The APM series of pressure modules by JOFRA are compatible with your AMC900, ASC300, or APC calibrators. These units are available in a series of ranges, units, and pressure references. From vacuum to absolute pressure, AMETEK has your application covered with the pressure modules to meet your calibration needs. There are different accuracies, ranges, and references designed to offer you the exact specifications you need for your pressure calibrations.

These rugged modules are engineered for in-plant, field, or laboratory use. They are ready-to-use with the JOFRA calibrators and the protocol allows for immediate recognition and use of the module once it is plugged into the calibrator. If you have pressure instrumentation, these modules are for you. When combined with the JOFRA calibrators and pump systems these modules make for a powerful arsenal of calibration tools. And, you can always add more as your needs change.

JOFRA APM S MODULES



The JOFRA APM S series are industrial pressure modules with good accuracies. The modules are designed so that the cable is integrated into the module housing, and the overall profile allows for easy storage of multiple modules.

Resolution:5 digits (20 to 100 ppm depending on range)
 Dimensions: 60 x 45 x 75 mm / 2.4 x 1.8 x 3 in.
 Weight: 350 g / 0.77 lb.
 Cable length: 60 cm / 2 ft.
 Pressure connections: 1/4 in. NPT female
 Conversion adapter to: 1/4 in. BSP female
 Electrical connection: Lemo, 5-pole, male
 Calibration certificate: NIST traceable
 Warm up: 10 minutes to rated accuracy
 Reading rate: 50 per second
 Display rate ASC300 and AMC900: 2 per second
 Compliance - CE standards: EN 50081-1, EN 50082-1
 EN 50081-2, EN 50082-2

Range	Type	psi	bar	Pressure port*2	Reference port*2	Over-pressure*3	Burst pressure*4	Reference accuracy*5	12 month accuracy*6	Part number
1 psi*1	Gauge	1.0000	0.0689	DRY	DRY	x 5	x 10	0.15%	0.30%	APM001PNSG
5 psi*1	Gauge	5.0000	0.3447	DRY	DRY	x 5	x 10	0.05%	0.10%	APM005PNSG
15 psi*1	Gauge	15.000	1.0342	DRY	N/A	x 4	x 6	0.025%	0.05%	APM015PNSG
1 psi	Gauge	1.0000	0.0689	316L SS	DRY	x 4	x 6	0.075%	0.15%	APM001PGSG
5 psi	Gauge	5.0000	0.3449	316L SS	DRY	x 2	x 3	0.025%	0.05%	APM005PGSG
15 psi	Gauge	15.000	1.0342	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM015PGSG
30 psi	Gauge	30.000	2.0684	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM030PGSG
100 psi	Gauge	100.00	6.8948	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM100PGSG
200 psi	Gauge	200.00	13.790	316L SS	N/A	x 2.5	x 3.7	0.025%	0.05%	APM200PGSG
300 psi	Gauge	300.00	20.684	316L SS	N/A	x 1.6	x 2.5	0.025%	0.05%	APM300PGSG
500 psi	Gauge	500.00	34.486	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM500PGSG
1000 psi	Gauge	1000.0	68.948	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM100KPGSG
2000 psi	Gauge	2000.0	137.90	316L SS	N/A	x 2.5	x 3.7	0.025%	0.05%	APM02KPGSG
3000 psi	Gauge	3000.0	206.84	316L SS	N/A	x 1.6	x 2.5	0.025%	0.05%	APM03KPGSG
5000 psi	Gauge	5000.0	344.76	316L SS	N/A	x 1.5	x 2	0.025%	0.05%	APM05KPGSG
10000 psi	Gauge	10000	689.48	316L SS	N/A	x 1.2	x 2	0.025%	0.05%	APM10KPGSG
±15 psi	Combination	±15.000	±1.0342	316L SS	N/A	x 2	x 3	0.035%	0.07%	APM015PCSG
-15 to 200 psi	Combination	-015.00 +200.00	-1.0342 +13.790	316L SS	N/A	x 2.5	x 3	0.025%	0.05%	APM200PCSG
5 psi	Differential	5.0000	0.3449	316L SS	DRY	x 2	x 3	0.035%	0.07%	APM005PDSG
100 psi	Differential	100.00	6.8948	316L SS	DRY	x 2	x 3	0.025%	0.05%	APM100PDSG
5 psi	Absolute	5.0000	0.3448	316L SS	N/A	x 6	x 9	0.035%	0.07%	APM005PASG
15 psi	Absolute	15.000	1.0342	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM015PASG
30 psi	Absolute	30.000	2.0684	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM030PASG
1 bar	Gauge	14.503	1.0000	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM001BGSG
4 bar	Gauge	58.012	4.0000	316L SS	N/A	x 1.2	x 2.5	0.025%	0.05%	APM004BGSG
6 bar	Gauge	87.018	6.0000	316L SS	N/A	x 2.3	x 3.5	0.025%	0.05%	APM006BGSG
10 bar	Gauge	145.03	10.000	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM010BGSG
16 bar	Gauge	232.05	16.000	316L SS	N/A	x 2.1	x 3.2	0.025%	0.05%	APM016BGSG
21 bar	Gauge	304.56	21.000	316L SS	N/A	x 1.6	x 2.4	0.025%	0.05%	APM021BGSG
25 bar	Gauge	362.58	25.000	316L SS	N/A	x 2.7	x 4.1	0.025%	0.05%	APM025BGSG
40 bar	Gauge	580.12	40.000	316L SS	N/A	x 1.7	x 2.5	0.025%	0.05%	APM040BGSG
60 bar	Gauge	870.18	60.000	316L SS	N/A	x 2.2	x 3.4	0.025%	0.05%	APM060BGSG
100 bar	Gauge	1450.3	100.00	316L SS	N/A	x 3.4	x 5	0.025%	0.05%	APM100BGSG
160 bar	Gauge	2320.5	160.00	316L SS	N/A	x 2.1	x 3.2	0.025%	0.05%	APM160BGSG
200 bar	Gauge	2900.6	200.00	316L SS	N/A	x 1.7	x 2.5	0.025%	0.05%	APM200BGSG
250 bar	Gauge	3625.8	250.00	316L SS	N/A	x 2	x 2.7	0.025%	0.05%	APM250BGSG
400 bar	Gauge	5801.2	400.00	316L SS	N/A	x 1.3	x 1.7	0.025%	0.05%	APM400BGSG
600 bar	Gauge	8701.8	600.00	316L SS	N/A	x 1.4	x 2.2	0.025%	0.05%	APM600BGSG
700 bar	Gauge	10152	700.00	316L SS	N/A	x 1.2	x 2	0.025%	0.05%	APM700BGSG
±1 bar	Combination	±14.503	±1.0000	316L SS	N/A	x 2	x 3	0.035%	0.07%	APM001BCSG
-1 bar	Vacuum	-14.503	-1.0000	316L SS	DRY	2 bar	3 bar	0.035%	0.07%	APM001BVSG
7 bar	Absolute	101.52	7.0000	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM007BASG
7 kPa	Gauge	1.0152	0.0700	316L SS	DRY	x 4	x 6	0.10%	0.20%	APM007KGS
35 kPa	Gauge	5.0761	0.3500	316L SS	DRY	x 2	x 3	0.035%	0.07%	APM035KGS
70 kPa	Gauge	10.152	0.7000	316L SS	N/A	x 2	x 3	0.035%	0.07%	APM070KGS
200 kPa	Gauge	29.006	2.0000	316L SS	N/A	x 2.1	x 3.1	0.025%	0.05%	APM200KGS
350 kPa	Gauge	50.761	3.5000	316L SS	N/A	x 2	x 3	0.025%	0.05%	APM350KGS
-29 inHg	Vacuum	-14.243	-1.0342	316L SS	DRY	60 inHg	90 inHg	0.035%	0.07%	APM029HVSG
10 inH2O*1	Gauge	0.3612	0.0249	DRY	DRY	x 5	x 10	0.20%	0.30%	APM010WGSG

JOFRA APM H MODULES



The JOFRA APM H series are high accuracy laboratory units: 0.01% of F.S. The outstanding performance makes these modules perfect for use as an electronic pressure reference at the top of your calibration hierarchy. These modules are easy to work with and easy to transport.

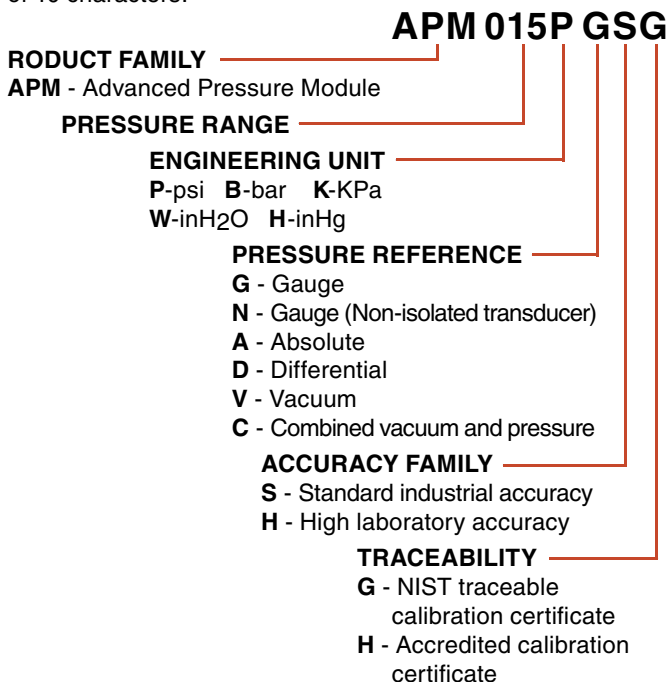
Resolution:6 digits (2 to 10 ppm depending on range)
 Dimensions:99 x 55 x 55 mm / 3.9 x 2.18 x 2.18 in.
 Weight: 450 g / 1 lb.
 Pressure connections: 7/16-20 SAE female
 Conversion adapter to:..... 1/8 in. NPT and BSP male
 Electrical connection:.....9 pole D-sub, male
 Interface cable: module to ASC300/AMC900/APC
 Cable length:..... 60 cm / 2 ft.
 Calibration certificate: NIST traceable
 Warm up:..... 10 minutes to rated accuracy
 Reading rate:..... 50 per second
 Display rate ASC300 and AMC900: 2 per second
 Compliance - CE standards:..... EN 50081-1, EN 50082-1
 EN 50081-2, EN 50082-2

Range	Type	psi	bar	Pressure port*2	Reference port*2	Over-pressure	Repeatability*7	6 month Accuracy*8	Part number
15 psi*9	Gauge	15.0000	1.03427	DRY	DRY	x 1.5	0.003%	0.010%	APM015PGHG
50 psi	Gauge	50.0000	3.44756	DRY	DRY	x 1.5	0.003%	0.010%	APM050PGHG
100 psi	Gauge	100.0000	6.89512	DRY	DRY	x 1.5	0.003%	0.010%	APM100PGHG
500 psi	Gauge	500.000	34.4756	DRY	DRY	x 1.5	0.003%	0.010%	APM500PGHG
1000 psi	Gauge	1000.00	68.9513	DRY	DRY	x 1.5	0.003%	0.010%	APM01KPGHG
15 psi*9	Absolute	15.0000	1.03427	DRY	N/A	x 1.5	0.003%	0.010%	APM015PAHG
50 psi	Absolute	50.0000	3.44756	DRY	N/A	x 1.5	0.003%	0.010%	APM050PAHG
100 psi	Absolute	100.000	6.89512	DRY	N/A	x 1.5	0.003%	0.010%	APM100PAHG
500 psi	Absolute	500.000	34.4756	DRY	N/A	x 1.5	0.003%	0.010%	APM500PAHG
1000 psi	Absolute	1000.00	68.9513	DRY	N/A	x 1.5	0.003%	0.010%	APM01KPAHG
3000 psi	Absolute	3000.00	206.854	DRY	N/A	x 1.25	0.003%	0.010%	APM03KPAHG

- Note *1** Non isolated transducer - dry air or non-corrosive gas compatible media only
- Note *2** Media compatibility on pressure or reference port side of the module - DRY indicates dry air or non-corrosive gas as compatible media. 316L SS indicates media compatible with type 316 stainless steel
- Note *3** Applying steady pressure up to the specified over pressure will not destroy or change performance of the module
- Note *4** Applying burst pressure (short pressure spikes) above the specified limit can destroy the module
- Note *5** Reference accuracy is expressed as % F.S. and includes only linearity, hysteresis, and repeatability at laboratory conditions.
- Note *6** 12 month accuracy - expressed as % F.S. Includes linearity, repeatability, hysteresis, and temperature compensation 0 to 50°C / 32 to 122°F.
- Note *7** The closeness of agreement between independent test results obtained under laboratory conditions.
- Note *8** 6 month accuracy - expressed as % F.S. Includes linearity, repeatability, hysteresis, and temperature compensation 15 to 45°C / 59 to 113°F.
- Note *9** All ranges less than 30 psi specify physical orientation of use.

APM ORDER NUMBER STRUCTURE

The part number for the APM pressure module series consist of 10 characters:



APM ACCESSORIES

Number	Description
	User manual for JOFRA APM series
SPK-APM-001	APM H communication cable to JOFRA APC, ASC300 and AMC900
	Communication kit for PC (APM H modules)
	Communication kit for PC (APM S modules)
	Pressure port fitting:
	APM H to 1/8 in male NPT
	APM H to 1/8 in male BSP
	APM S to 1/4 in female BSP
	APM S to 1/4 in male BSP

PRESSURE SOURCES

The flexible pressure solution: A JOFRA APM pressure module and an indicator (ASC300 / AMC900 / APC) and one of the AMETEK pressure pumps below. This gives you a complete pressure test and calibration system. If future tasks require other pressure ranges, just complement your system with an extra module and/or a pressure source.



The T-810 / 811 series of small "bicycle" pumps are designed for economical pressure test solutions. Vacuum to -0.8 bar / -23 inHg or pressure to 15 bar / 200 psi.

The T-730 / 40 / 50 series of rugged pneumatic hand pumps for pressure up to 20 bar / 300 psi or down to -0.8 bar / -23 inHg.



The T-910 pump is an easy-to-use, single-hand operation pneumatic pump featuring both vacuum and pressure generation up to 40 bar / 580 psi.

The T-620 / T-620H is small, lightweight, and convenient portable hydraulic pump. Medium is oil. Pressure generation up to 350 bar / 5,000 psi.



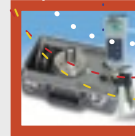
The screw pump is designed for very easy tabletop operation and offers exceptional pressure control. Generates up to 350 bar / 5,000 psi. Medium is water or oil.

This hydraulic pump is designed for high pressure oil applications. The small size and weight makes it a good rugged portable solution. Pressure up to 700 bar / 10,000 psi.



The type T pump is designed for high pressure applications up to 1000 bar / 15,000 psi with either water, hydraulic oil, or Skydrol as pressure medium. All wetted parts are stainless steel.

temperature
software
pressure
signal



AMETEK

Calibration Instruments

offers a complete range of calibration equipment for pressure, temperature, and signal - including software.

Temperature standards

Portable precision thermometer. Dry-block calibrators: 4 series, more than 20 models - featuring speed, portability, accuracy, and advanced documenting functions.

Primary pressure standards

Pneumatic floating-ball or hydraulic piston deadweight testers - easy-to-use with accuracies up to 0.015% of reading.

Electronic pressure standards

Convenient electronic systems ranging from -1 to 700 bar / 25 inHg to 10,000 psi - multiple choices of pressure ranges, pumps, and accuracies, fully temperature-compensated for problem-free and accurate field use.

Signal test and calibration

Process signal measurement and simulation. From handheld field instruments for multi or single signals to laboratory reference level bench top instruments.

...because calibration is a matter of confidence

AMETEK[®]
CALIBRATION INSTRUMENTS

www.ametekcalibration.com
www.jofra.com

AMETEK is a leading global manufacturer of electrical and electromechanical products for niche markets. AMETEK's annual sales exceed \$1 billion. NYSE (AME) since 1930. Operations are in US, Europe and Asia, with about 1/3 of sales to markets outside the US.

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Pub Code SS-CP-2190-US Issue 0303

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