

# Pressure

Product Selection Guide



## JOFRA pressure calibrators

*- because calibration is a matter of confidence*

**AMETEK**<sup>®</sup>  
CALIBRATION INSTRUMENTS

## JOFRA HPC series – Handheld Pressure Calibrator

Our HPC series is designed to meet high accuracy pressure calibration applications, and combines deadweight tester accuracy in a modern digital package with a wide range of user friendly features.

All HPCs have a broad selection of useful functions, ranging from basic features to advanced high speed switch test. The more powerful members of the family have advanced error calculation, leak test and mathematic functions.

HPC600 includes a complete mA loop calibrator with all common features.

HPC500/502 and HPC600 can be combined with more than 60 different external pressure modules.

HPC600 has a built-in electrical pump system for generation of pressure and vacuum by a touch of a single key!

The ruggedized HPC has a large backlit graphical display, a user friendly menu that shows current status and mode, and one, two or three measurement windows to suit specific applications. Furthermore a dedicated zero test button to provide convenient zero before test and ensures better accuracy.

- Accuracy  
HPC400:  $\pm 0.05\%$  F.S.  
HPC500/502:  $\pm 0.025\%$  of reading, + 0.01% F.S.  
HPC600:  $\pm 0.020\%$  of reading, + 0.015% F.S.
- HPC400 and HPC500/502 are available as indicators or in complete systems
- HPC500/502 and HPC600 can be extended with one of 60 different external pressure modules
- HPC500 is equipped with one internal sensor, HPC502 is equipped with two internal sensors to be chosen by the customer
- Dedicated zero button available to provide convenient zero before test
- Unique built-in electric pump in the HPC600
- HPC400: 3 different pressure ranges up to 20 bar/300 psi  
HPC500/502: 16 different pressure ranges up to 700 bar/10,000 psi  
HPC600: 4 different pressure ranges up to 10 bar/150 psi
- Special designed HPC softcase which is included with the HPC600. Optional for HPC400 and HPC500/502



## JOFRA DPC-500 – Documenting Pressure Calibrator

The DPC-500 is designed for high precision calibration of pressure gauges, transmitters, digital manometers, pressure switches and overpressure valves. The documenting feature makes it possible to handle 16 work orders with up to 22 calibration points each and have the result uploaded to a PC via JOFRACAL calibration software.

- Accuracy from  $\pm 0.02\%$  F.S.
- Available as indicator or a complete system
- 43 pressure ranges up to 1,000 bar/15,000 psi (vacuum, gauge, compound, absolute)
- Interchangeable DPC-J reference sensor (up to 5 sensors per instrument)
- 15 standard pressure units and 1 user specified
- RS232 interface and JOFRACAL calibration software

## JOFRA IPI – Industrial Pressure Indicator

The IPI pressure indicator combines the ease of an analog gauge with the accuracy and easy-to-read display of a digital calibrator. The IPI offers a long battery life, high accuracy and serial communication. The accuracy of the IPI rivals a pressure calibrator and is temperature compensated for shop or machine room applications.

- Accuracy up to  $\pm 0.05\%$  F.S.
- Available as an indicator or in a complete system
- Pressure range vacuum to 700 bar/10,000 psi
- 17 different pressure units and 1 user specified
- Min/max readings
- RS232 interface and JOFRACAL calibration software
- ATEX and CSA certified and designed for use in potentially explosive environments



## JOFRA APM – Advanced Pressure Module

The APM pressure modules extend the usage of the HPC calibrators as well as the ASC300 and AMC910 multi function signal calibrators. The modules are available in series of accuracies, ranges, units and pressure references from vacuum to absolute pressure.

- Accuracy to  $\pm 0.01\%$  F.S.
- Pressure range vacuum to 700 bar/10,000 psi
- 62 different modules
- Rugged and dependable for field or lab use
- Gauge, absolute, vacuum, differential and combination modules
- Supplied with fittings for NPT and BSP threads

*Accuracy includes hysteresis, nonlinearity, repeatability and reference standard uncertainty, 1 Year typical long-term stability, operated inside the rated temperature span and pressure range. Specification sheets can be found at [www.jofra.com](http://www.jofra.com)*



Built-in electrical pump



## Ready-to-use pressure systems for the HPC400, HPC500, HPC502, DPC-500 and IPI

AMETEK offers several solutions for pressure generation. This line spans from a small pneumatic "bicycle" type pump to a hydraulic pump that generates up to 1,000 bar/15,000 psi. These are durable pumps with features such as venier valves, manifold connections, swivel fittings, and optional O-ring materials and fittings making the pumps flexible to meet your calibration and testing applications.

For all pressure systems, the pump and the indicator are separate systems. Therefore, a replacement of the pump does not mean that you have to send a complete system for repair. Maintenance of the instrument is also made easy. Recalibration of the unit can be performed locally with an accurate pressure reference: No need to send the unit back to us for recalibration. If you do require a factory calibration, the pump and indicator are independent and only the indicator needs to be returned.

JOFRA pressure calibrators are as standard delivered as individual indicators or as complete calibration systems ready to use in a carrying case, including pump, hose, set of fittings, batteries, test leads, user manual, and a traceable calibration certificate.

All pumps are also available separately.



*Our systems come in carrying cases with cut-outs for fittings, hose and the complete assembled calibration unit - no time required to assemble the unit before use!*

### Pump System A



- DPC-500, HPC400, HPC500, HPC502 and IPI
- 0 to 40 bar
- 0 to 580 psi

### Pump System B



- DPC-500, HPC400, HPC500, HPC502 and IPI
- Vacuum to 40 bar
- Vacuum to 580 psi

### Pump System C



- DPC-500, HPC500, HPC502 and IPI
- 0 to 350 bar
- 0 to 5,000 psi

### Pump System D



- DPC-500, HPC500, HPC502 and IPI
- 0 to 350 bar
- 0 to 5,000 psi

### Pump System E



- DPC-500, HPC500, HPC502 and IPI
- 0 to 700 bar
- 0 to 10,000 psi

### Pump System F



- DPC-500, HPC500, HPC502 and IPI
- 0 to 1,000 bar
- 0 to 15,000 psi

## Accuracy

<b>HPC400</b>	±0.05% F.S.
<b>HPC500</b>	±0.025% of reading + 0.01% F.S.
<b>HPC502</b>	±0.025% of reading + 0.01% F.S.
<b>HPC600</b>	±0.020% of reading + 0.015% F.S.
<b>DPC-500</b>	from ±0.02% F.S.
<b>IPI</b>	±0.05% of F.S.
<b>APM</b>	up to ±0.01% F.S. depending on module

## JOFRACAL calibration software

JOFRACAL calibration software ensures easy calibration of RTD's, thermocouples, transmitters, thermoswitches, pressure gauges and pressure switches. JOFRACAL can be used with DPC-500, HPC600, HPC500, HPC502 and IPI pressure calibrators, all JOFRA temperature calibrators, as well as AMC910, ASC300 multi signal calibrator and ASM800 signal multi scanner. When used with ASM800 signal multi scanner, JOFRACAL can perform a simultaneous semiautomatic calibration of up to 24 pressure and/or temperature devices under test in any combination.

JOFRACAL software controls the complete calibration procedure, stores the results and provides a calibration audit trail through hard-copy certificates. All calibration data are stored for each sensor to monitor drift and optimize recalibration intervals. A scheduler feature allows planning of future calibrations.

JOFRACAL calibration software can be downloaded free of charge at [www.jofra.com](http://www.jofra.com)

## M&G deadweight testers (primary standards)

In 1966, Mansfield & Green introduced the deadweight tester based on the "floating ball" principle. This deadweight tester is an extremely easy-to-use, reliable and accurate primary standard and is now earning its reputation as the "standard of standards". A range of hydraulic deadweight testers are also available, up to 1,000 bar/15,000 psi.

Typical deadweight tester applications are:

- laboratory or field use
- hazardous locations
- critical process control loops extending the time between calibrations due to better accuracy and uncertainty
- calibrating instruments on custody transfer stations thereby reducing the uncertainty of the measurement
- calibrating portable digital calibrators to achieve the highest possible accuracy and reducing maintenance costs



### AMETEK Calibration Instruments

is one of the world's leading manufacturers and developers of calibration instruments for temperature, pressure and process signals as well as for temperature sensors both from a commercial and a technological point of view.

### JOFRA Temperature Instruments

Portable precision thermometers. Dry-block and liquid bath calibrators: 5 series, with more than 25 models and temperature ranges from -90° to 1205°C / -130° to 2200°F. All featuring speed, portability, accuracy and advanced documenting functions with JOFRACAL calibration software.

### JOFRA Pressure Instruments

Convenient electronic systems ranging from -25 mbar to 1000 bar (0.4 to 15,000 psi) - multiple choices of pressure ranges, pumps and accuracies, fully temperature-compensated for problem-free and accurate field use.

### JOFRA Signal Instruments

Process signal measurement and simulation for easy control loop calibration and measurement tasks - from handheld field instruments to laboratory reference level bench top instruments.

### JOFRA / JF Marine Instruments

A complete range of calibration equipment for temperature, pressure and signal, approved for marine use.

### FP Temperature Sensors

A complete range of temperature sensors for industrial and marine use.

### M&G Pressure Testers

Pneumatic floating-ball or hydraulic piston dead weight testers with accuracies to 0.015% of reading.

### M&G Pumps

Pressure generators from small pneumatic "bicycle" style pumps to hydraulic pumps generating up to 1,000 bar (15,000 psi).

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