

JOFRA™ ASC300

Advanced Signal Calibrator



The ASC300 is big enough to cover all your needs for a process signal calibrator with high accuracy and small enough to fit into your tool box and operate with one hand for easy field calibration.

The ASC300 can change your entire calibration regimen for signal, pressure, and temperature. You can combine this versatile calibrator with the APM external pressure modules or a JOFRA dry-block calibrator to meet your calibration needs.



Multi-function signal calibrator

with high accuracy. Ideal for both field and maintenance shop use.

Input and output

RTD: 14 different types
TC: 13 different types
Current 0-24 mA DC
Voltage 0-20 V DC
Frequency 0 to 10 KHz
Pulse train output
Resistance 5 to 4000 Ohm

Simultaneous read-back

Isolated read-back from device-under-test of mA, V and pressure.

RTD simulation

This feature works with all pulsed transmitters and HART transmitters.

Calibrate pressure

at varying reference levels using external pressure modules with accuracies up to 0.01% F.S.

Calibrate temperature

at varying reference levels using JOFRA dry-block calibrators with accuracies up to 0.04°C / 0.07°F.

High level of protection

Full fuseless protection to 240 VAC.

Multi-information

Graphical display for simultaneous reading of both output and read-back.

Full remote control

of all functions with the help of simple ASCII commands.



PRODUCT DESCRIPTION

The JOFRA ASC300 combines a full numerical keypad with a series of function keys and graphical user interface making it easy to perform various tasks in a short period of time. This advanced calibrator employs the latest technology in supporting your calibration needs.

The JOFRA ASC300 measures and sources, TCs, RTDs, current, voltage, frequency and pulse trains. The JOFRA ASC300 is also fully integrated to work with JOFRA APM pressure modules providing true multi-function operability. There are two channels of operation providing the user with an isolated read-back circuit. The graphical display makes it is easy to recognize the status of the instrument, take readings, and simulate different functions.

The JOFRA ASC300 has full fuseless protection to 240 VAC, which is an important feature as most failures in signal calibrators come from over-voltage conditions.

JOFRA ASC300 LAY-OUT

Read-back display

The upper half of the graphical display is dedicated to read-back from the device-under-test or an APM pressure module. The input is electrically isolated from the circuitry.

Primary display

The lower half of the display is for all input or output combinations.

Soft keys

Three navigation keys. Their function is clearly explained above the button in the bottom of the display.

Backlit display - ON/OFF

Turn the back light on in dark environments.

“Never get lost” - HOME key

This key sends you immediately back to the main operating display without making any changes to the setup.

NUMERIC KEYBOARD

A fully numeric keyboard gives you the absolute fastest way to reach your desired set values.

Terminal block

All input and output connectors are placed away from the display and keyboard to give you the maximum freedom to operate the unit.

Fast stepping keys

Just one push of a button and you have null (0%) or full span (100%) of your desired range. The 25% button jumps in 25% steps up or down every time you push it.

Communication connection

Small stereo jack connector for the serial communication interface.

Pressure modules

LEMO connector in the bottom of the instrument to easy connection of the entire range of JOFRA APM pressure modules.

SPECIFICATIONS

All specifications are for both input and output

Thermo couple - TC

TC types B C E J K L N R S T U BP XK
 Accuracy (type J @ 0°C / 32°F)..... ±0.4°C / 0.72°F
 Cold junction ±0.2°C / °F
 Cold junction compensation ON/OFF control..... Yes

Resistance - RTD

RTD types Pt10 Pt25 Pt50 Pt100 Pt200 Pt500 Pt1000
 Cu10 Cu50 Cu100 Ni120 YSI400
 Accuracy (Pt100 typical) ±0.2°C / 0.36°F
 Response time Less than 4 mSec.
 Connection 2, 3 and 4-wire

Current - mA and loop

Range mA 0.000 to 24.000 (-25% to 125%)
 Accuracy ±0.015 % rdg. + 2µA
 Loop power for transmitters Yes, 24 VDC
 Isolated input..... Yes

Volt

Range mV -10.00 to 75.00 mV
 Accuracy ±0.02% rdg. + 20 µV
 Range V 0.000 to 20.000 VDC
 Accuracy ±0.02% rdg. + 2 mV

Resistance - Ohm

Range 5.00 to 400.00 Ohm
 Accuracy ±0.1 Ohm
 Range 400.0 to 4000.0 Ohm
 Accuracy ±1 Ohm

Frequency and pulses

Frequency range 2 to 600 CPM, 1 to 10 KHz
 Accuracy 0.05%
 Pulse train output 0 to 1000 pulses

Power specifications

Batteries 4 x AA batteries
 Low battery warning Yes

Miscellaneous

Serial communication..... Yes, ASCII
 CE - EMC EN50082-1: 1992 and EN55022: 1994 Class B
 Safety: CSA C22.2 No. 1010.1: 1992

PRESSURE MODULES



**JOFRA APM
Advanced
Pressure
Module**

This series of pressure modules offers you the flexibility of the ASC300 to include full pressure calibration capabilities. The pressure modules are compatible with the JOFRA AMC900

bench top electrical standard and this JOFRA ASC300 handheld multi-function calibrator. Independent of the engineering unit of the module you can change units on the ASC300 (11 different engineering units) at any time. 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. All calibration data are stored in the modules. You only need to maintain the traceability of the modules - not the indicator, and, you can always add more as your needs change.

For more details about the JOFRA APM series see specification sheet: SS-CP-2350

APM H Series



The JOFRA APM H series are high accuracy laboratory units: 0.01% of F.S. All units are supplied with both imperial and metric fittings for use anywhere worldwide. The modules are connected to the calibrator by means of a communications cable. As an accessory you can have a kit that connects the APM H modules directly with a computer.

Accuracy:0.010% F.S.
Precision: 0.003% F.S.
Resolution:2 to 10 ppm depending on range
Media compatibility: Clean, dry, non-corrosive gases
Dimensions: 99 x 55 x 55 mm / 3.9 x 2.18 x 2.18 in.
Weight: 450 g / 1 lb.
CE compliant: Yes

JOFRA APM-H pressure modules			
Range	Units	Type	Part number
15	psi	Gauge	APM015PGHG
50	psi	Gauge	APM050PGHG
100	psi	Gauge	APM100PGHG
500	psi	Gauge	APM500PGHG
1000	psi	Gauge	APM01KPGHG
15	psi	Absolute	APM015PAHG
50	psi	Absolute	APM050PAHG
100	psi	Absolute	APM100PAHG
500	psi	Absolute	APM500PAHG
1000	psi	Absolute	APM01KPAHG
3000	psi	Absolute	APM03KPAHG

APM S series



The JOFRA APM S series are industrial pressure modules with standard accuracies of 0.025 to 0.05% of F.S. All units are supplied with both imperial and metric ranges and fittings for use anywhere worldwide. The modules are designed so that the cable is integrated into the module housing, and an overall profile for easy storage of multiple modules. The overall accuracy of the units beyond the sensor is a combined accuracy and should be realized for reliable calibrations.

Accuracy: 0.025% F.S.
Resolution: 5 digits
Media compatibility: Clean, dry, non-corrosive gasses
Dimensions: 60 x 45 x 75 mm / 2.4 x 1.8 x 3 in.
Weight: 350 g / 0.77 lb.
CE compliant: Yes

JOFRA APM S pressure modules			
Range	Units	Type	Part number
10	inH ₂ O	Gauge	APM010WGSG
1*	psi	Gauge	APM001PNSG
5*	psi	Gauge	APM005PNSG
15*	psi	Gauge	APM015PNSG
1	psi	Gauge	APM001PGSG
5	psi	Gauge	APM005PGSG
15	psi	Gauge	APM015PGSG
30	psi	Gauge	APM030PGSG
100	psi	Gauge	APM100PGSG
200	psi	Gauge	APM200PGSG
300	psi	Gauge	APM300PGSG
500	psi	Gauge	APM500PGSG
1000	psi	Gauge	APM01KPGSG
2000	psi	Gauge	APM02KPGSG
3000	psi	Gauge	APM03KPGSG
5000	psi	Gauge	APM05KPGSG
10000	psi	Gauge	APM10KPGSG
7	kPa	Gauge	APM007KGSG
35	kPa	Gauge	APM035KGSG
70	kPa	Gauge	APM070KGSG
200	kPa	Gauge	APM200KGSG
350	kPa	Gauge	APM350KGSG
1000	kPa	Gauge	APM010BGSG
2100	kPa	Gauge	APM021BGSG
6000	kPa	Gauge	APM060BGSG
16000	kPa	Gauge	APM160BGSG
20000	kPa	Gauge	APM200BGSG
40000	kPa	Gauge	APM400BGSG
70000	kPa	Gauge	APM700BGSG
5	psi	Differential	APM005PDSDG
100	psi	Differential	APM100PDSDG
5	psi	Absolute	APM005PASG
15	psi	Absolute	APM015PASG
30	psi	Absolute	APM030PASG
±15	psi	Gauge bi-directional	APM015PCSG
-15/200	psi	Gauge bi-directional	APM200PCSG
-15	psi	Gauge vacuum	APM029HVSG

Note: * Non isolated transducer

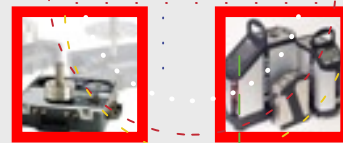
JOFRA ASC 300 ORDERING INFORMATION

Order No.	Description
ASC300	Base model number (1st thru 6th characters) Handheld calibrator
G	Certificate (7th character) NIST traceable certificate (standard)
H	Accredited certificate
ASC300G	Sample order number JOFRA ASC300 with standard NIST traceable certificate.

STANDARD DELIVERY	
1 pcs.	JOFRA ASC300 instrument
1 pcs.	Battery set (4 x AA) (Not rechargeable)
1 pcs.	Manual
1 pcs.	Set of test leads
1 pcs.	Soft carrying case
1 pcs.	NIST traceable certificate

ACCESSORIES	
Part No.	Description
-	Softcase for the ASC300 unit
120517	Thermocouple plug for type K (Yellow)
120515	Thermocouple plug for type T (Blue)
120514	Thermocouple plug for type N (Orange)
2206011	Thermocouple plug + K wire + crocodile clips in type K material
-	LEMO to banana bushings with 1 m / 3 ft. cable
65F126	Test lead, black
65F127	Test lead, red
-	Manual for JOFRA ASC300
-	Serial communication cable for the ASC300 unit
-	Rechargeable battery pack
-	Charger for the rechargeable battery pack (230 VAC)
-	Charger for the rechargeable battery pack (115 VAC)

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 calibration
Process signal measurement and simulation for easy control loop calibration and measurement tasks - from the small mA loop calibrator to the complete, software supported, modular-based "calibration shop".

...because calibration is a matter of confidence



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AMETEK is a leading global manufacturer of electrical and electromechanical products for niche markets. Listed on the New York Stock Exchange (AME) since 1930, AMETEK's annual sales exceed \$1 billion. Operations are in North America, Europe and Asia, with about one third of sales to markets outside the United States.

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