JOFRA calibration

ASC-400

Advanced Signal Calibrator

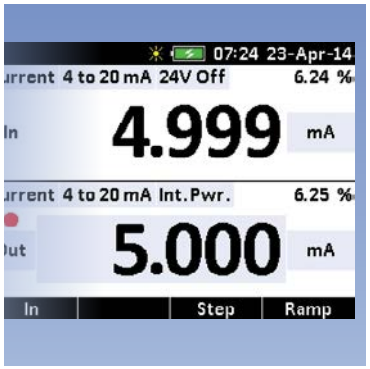
User-friendly and **innovative**

Advanced Simplicity

JOFRA calibration

The ASC-400 is a portable process signal calibrator that provides the functionality and accuracy you expect from a laboratory calibration system but still compact enough to fit into a toolbox and operate with one hand for easy field calibration. The ASC-400 is more than just a signal calibrator. Combined with our APM external pressure modules or our dry-block calibrator, it will calibrate pressure and temperature.

With its function and cursor keys, the full numerical keypad provides a simple and quick user interface; and the full-color display offers superior visibility and overview. Sturdy construction, state-of-the-art circuitry, and fuseless protection ensure the ASC-400 will deliver consistent high accuracy.



Optimal Read-Out Visibility and High Accuracy

Features a large full color display with the advanced simplicity user friendly interface. The high accuracy ASC-400 meets the demands of modern sensors and transmitters.

Input and Output

RTD: 16 different types; TC: 13 different types; Current 0-24 mA DC; Voltage 0-20 VDC; Frequency 0.05 to 10,000 Hz; Pulse train output; Resistance 5 to 4000 Ohm.

Simultaneous Read-back and Fast RTD Simulation

Including isolated read-back from device-under-test of mA, V, and pressure. The RTD simulation feature is fast enough to work with pulsed transmitters and PLCs.

Calibrate Pressure & Temperature

A full-featured pressure calibrator. Just add an APM, and benefit from automatic leak test, pressure switch calibration, and more. In addiiton, use the ASC-400 together with JOFRA temperature calibrators, and add measurement channels for temperature sensors or switches.

Measure Temperature

The ASC-400 works with RTDs and CvD equations to obtain true temperature, based on “true ohm” technology; and can be used as a high accuracy thermometer.

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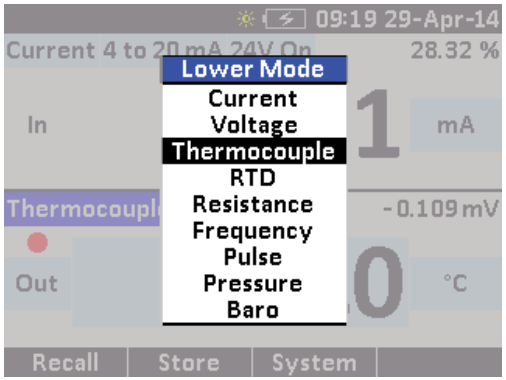
Features

Unique “non-menu” User Interface

Easy to use, single layer user interface. No deep menu structure! Operate and set-up the ASC-400 to perform your tasks. Fast and intuitive!



Simultaneous Input and Output

The ASC-400 offers simultaneous input and output, making it possible to calibrate and adjust a transmitter with no additional equipment needed.

Temperature Reading at Reference Level

The ASC-400 offers the ability to characterize an RTD sensor. Use this feature to add a missing special curve or to characterize a reference RTD. This feature, combined with “true ohm” technology, eliminating thermo voltage in the RTD loop, makes the ASC-400 a true reference thermometer.

If you choose a reference RTD from the accurate and stable JOFRA STS temperature sensors, they are delivered with a traceable calibration certificate with the necessary Callendar-Van Dusen coefficients. Enter the figures into the unit, and you have a temperature reference. Complement this with a dry-block temperature calibrator, and your ASC-400 becomes the heart of your portable calibration lab.

Read-back Display

The upper half of the full-color display is dedicated to the read-back signal from the device-under-test. This input section is electrically isolated from the circuitry. You can also read pressure from the pressure modules in this display section.

Terminal Block

We placed all input and output connectors away from the display and keyboard to give maximum freedom to operate.

We call it the Wireless Keyboard.

Function Keys

These keys provide quick access to the function shown on the bottom of the display.

Numeric Keyboard

A full numeric keyboard provides the absolute fastest way to reach your desired set point values.

Primary Display

This part is used for all input or output combinations. The primary display plus the read-back display provides comprehensive and simultaneous input-output functionality and an excellent overview of the test in process.

Cursor Keys

Used for the set-up, navigation, and fine-tuning of output values. The cursor keys provide a convenient “analog” feeling.

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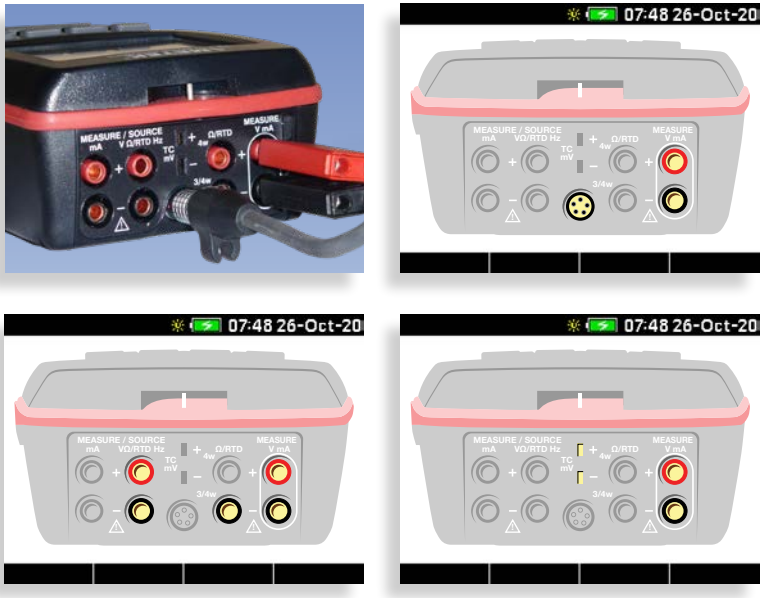
Features

Connection Assistant

In the latest advancement of the advanced simplicity user interface, the ASC-400 offers a unique Connection Assistant. Multifunction Process calibrators are quite complicated, but the ASC-400s built-in help function provides a graphical depiction of the proper set-up. The connection assistant helps reduce errors and training time. Even the most novice user can quickly become a calibration expert.

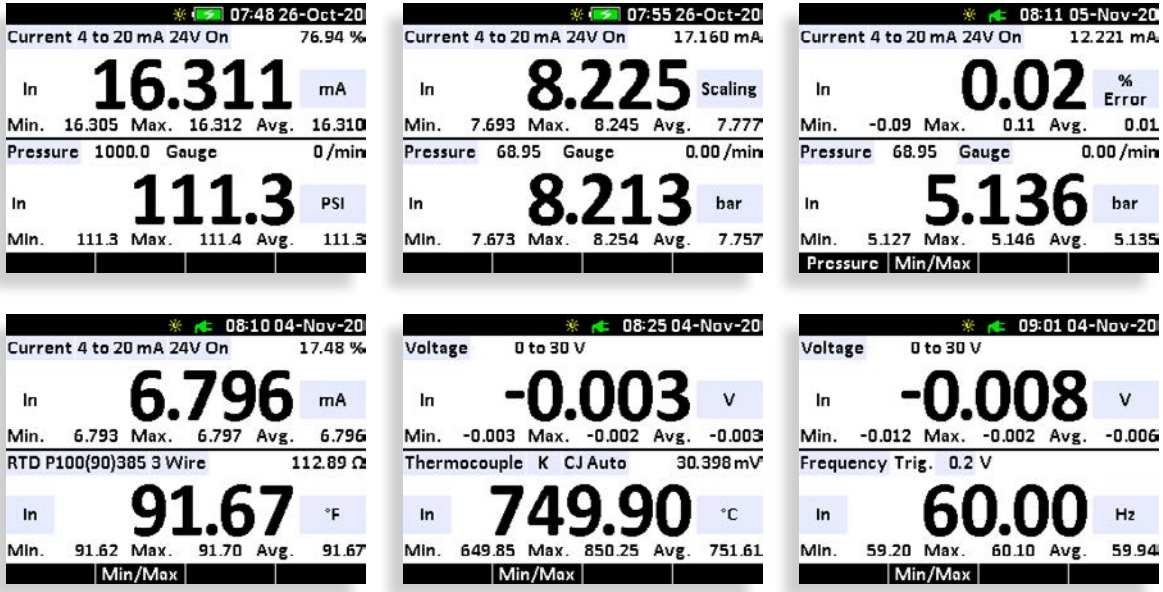


The ASC-400 Connection Assistant.

Minimum, Maximum, and Average Calculations

The ASC-400 features automatic calculation functions that display the minimum, maximum, and average readings. These calculations are shown on the same display window as the primary reading, making it easy to see all information without switching screens. When using two measurement channels, both will include the calculated functions for that channel. In this situation, the display will indicate eight different values.

If a new minimum, maximum, or average reading is needed, pressing the zero button will reset each value.



Examples of minimum, maximum, and average readings in the ASC-400 window.

Features

Fuseless Protection

If the ASC-400 is mistakenly connected to over voltage, the unit has a fuseless protection feature, preventing expensive repairs and recalibration.

To avoid injury never connect the unit to the mains supply!

5 “Intelligent” Memories

All settings on both the upper & lower channels are stored and saved with customer-defined memory names.

Useful Soft Case (option C)

An optional carrying case is available for the ASC-400. The spacious soft case provides protection during transport and features separate compartments for the unit, test leads, test hoses, temperature probe, and APM pressure modules. A shoulder strap ensures convenient and safe transportation when climbing ladders, etc.

Power Supply/Charger (option A or B)

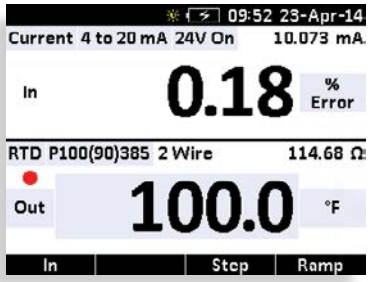
As standard, the ASC-400 ships with 6 AA alkaline batteries. Additionally, two power supply options are available:

Option A

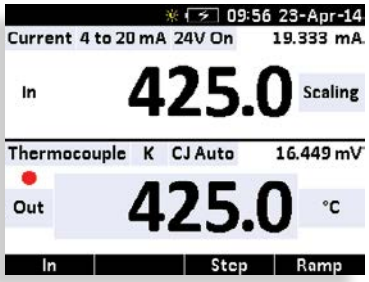
Mains adapter — Used to eliminate battery power and preserve batteries in long term workshop testing and calibration.

Option B

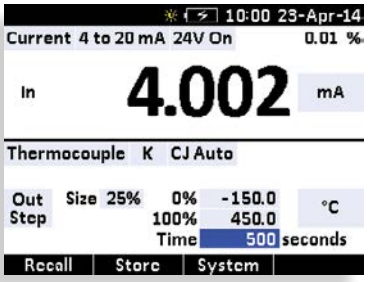
Same as Option A, but supplemented with 6 x AA Ni-MH rechargeable batteries, which charge while mounted in the ASC-400.



Online % calculation, fast and responsive reading, for calibration and adjustment tasks.



User configurable scaling, compare values in the same format, easier than ever.



Set up span, step size, and timing. Set up and ramp times up to 999 seconds.

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Features

Gauge or Absolute Pressure
(BARO option)

The BARO option turns any gauge measuring APM into an absolute measuring device.

Accuracy: ± 0.5 mbarA/0.00725 psiA
Range: 700 to 1100 mbarA/10.153 to 15.954 psiA

Includes all effects of linearity, hysteresis, temperature (-10 to 50°C/14 to 122°F) and stability for one year.

Please note the BARO option is factory installed.

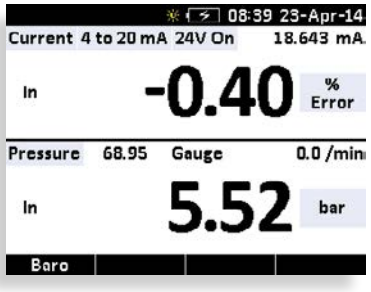
APM Pressure Modules (accessory)

When used with APM CPF Series pressure modules, the ASC-400 becomes a true pressure calibrator with features such as; leak test, switch test, scaling, and online % error calculations.

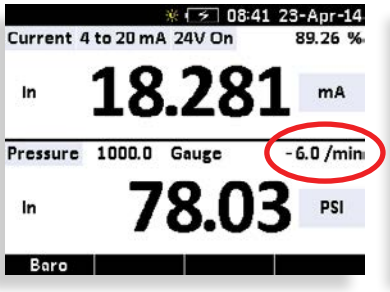
Pressure ranges from vacuum to 1000 bar / 15 000 psi, accuracies down to 0.025% RDG, fully temperature compensated, and stability for one year.

The modules are engineered for in-plant, field, or laboratory use. They are ready-to-use with immediate recognition and use of the module once plugged into the calibrator. All units are welded, with a permanent filled diaphragm seal. Metal to metal cone seal, and O-ring. CPF adapters to various threading available.

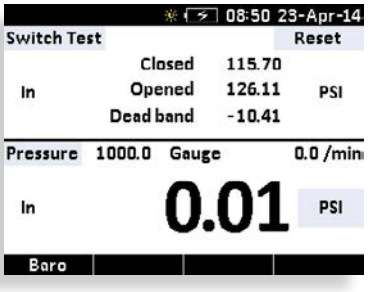
Up to 14 built-in engineering units.



Online % calculation, fast and responsive reading, for calibration and adjustment tasks.



Automatic leak test, adjustable timer, and automatic calculation to leak rate/minute.



Automatic pressure switch test records automatically open, close and deadband values.

Specifications

JOFRA calibration

Temperature Sensor (option T)

- Temperature sensor, -40 to 155°C/-40 to 311°F.
- Delivered with international traceable calibration certificate and CvD coefficients, ready to enter into any ASC.
- Sensor dimensions Ø 4 x 200 mm + handle.
- Calibration points, -40,-20,0,50,100,155°C/-40,-4,32,122,212,311°F.
- Calibration accuracy ± 0.030°C/0.054°F.

Ambient Temperature

Operating temperature	**-10 to 50°C /14 to 122°F**
Storage temperature	**-20 to 60°C /-4 to 140°F**
Humidity	**0 to 80% R.H. non-condensing**
Case protection	**IP40**
All specs specied at ambient temperature	**23°C ± 5°C / 73°F ± 9°F**
Outside ambient 23°C ± 5°C	**± 0.003% rdg/°C**
Outside ambient 73°F ± 9°F	**± 0.0017% rdg/°F**

Power Specifications

Batteries	**6 x AA batteries**
1.5V AA	**Alkaline (non rechargeable) or AA NiMh (rechargeable)**
Mains adapter	**(option) 9VDC/500mA - 230VAC/115VAC**
Low battery warning	**Yes**
Battery lifetime–Backlight low no, loop power	**30 hours**
Battery lifetime–Backlight high, 12 mA loop	**13 hours**
Charging current (optional charger)	**85 mA**
Use only NiMH cells with capacity larger than	**1700 mAh**

Display

Display size	**2,8"**
Resolution	**320 x 240 pixels**
Type	**TFT / Color**
Update rate	**2.5 readings/sec.**

RS232 Communication Interface

Connector	**Mini USB female (B)**
Communication rate	**USB 2.0 / ASCII**

Switch Test Output

Maximum current	**1 mA**
Maximum voltage	**24 VDC**

Physical Specifications (LxHxW)

Unit	**220x55x96 mm / 8.66x2.17x3.78 in**
Weight incl. batteries	**584 g / 20.6 oz**
Unit in soft case	**235x95x115 mm / 9.25x3.74x4.53 in**
Weight incl. test leads & test chips	**933 g / 32.91oz**
Shipping size	**275x100x175 mm / 10.83x3.94x6.89 in**
Shipping weight	**1233 g / 43.49 oz**

Miscellaneous

CE - EMC	**EN61326-1:2012**

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Specifications

Thermocouple mV	Range		Accuracy ± 12 months
	min	max	
TC mV read	-10.000 mV	75.000 mV	0.015% rdg +10µV
TC mV source	-10.000 mV	75.000 mV	0.015% rdg +10µV

Maximum current output is 3 mA Output impedance 0.010 ohm.

Thermocouple Cold Junction	Range		Accuracy ± 12 months
	min	max	
CJC compensation	18°C / 64°F	28°C / 83°F	0.2°C / 0.36°F
CJC outside above	—	—	0.05°C/°C 0.03°F/°F

Volt V	Range		Accuracy ± 12 months
	min	max	
Read (Isolated)	0.000 V	30.000 V	0.01% rdg +2mV
Read (non-isolated)	0.000 V	20.000 V	0.01% rdg +2mV
Source	0.000 V	20.000 V	0.01% rdg +2mV

Maximum current output in voltage ranges is 3 mA Output impedance 0.050 ohm / Input resistance 1 Mohm.

Frequency Pulse	Range		Accuracy ± 12 months
	min	max	
CPM read	2.0	600.0	0.05% rdg +0.1CPM
Hz read	0.050	10.000	0.05% rdg +0.001Hz
—	10.000	100.00	0.05% rdg +0.01Hz
—	100.00	1000.0	0.05% rdg +0.1Hz
—	1000.0	10000	0.05% rdg +1Hz
KHz read	1.000	10.000	0.05% rdg +0.001KHz
CPM source	2.0	600.0	0.05% rdg
Hz soure	0.050	1000.0	0.05% rdg
—	1000.0	10000	0.06% rdg
KHz source	1.000	10.000	0.06% rdg
Pulse (source only) Rate: 1 Hz to 10KHz	1	99999	

Input voltage amplitude range on frequency is 1 to 20 V, Trigger level 0.2 to 10 volt. Minimum pulse with 10 µS. Output amplitude is adjustable from 1 to 20 V and is a square wave with a 50% duty cycle. For output frequency, a slight negative oset of approximately -0.1 V is present to assure zero crossing.

Ohm	Range		Accuracy ± 12 months
	min	max	
Ohm read (low)	0.00	400.00	0.015% rdg +0.03 ohm
Ohm read (high)	400.0	4000.0	0.015% rdg +0.3 ohm
Ohm source (low)			
@ 0.1 to 0.5 mA	5.0	400.0	0.015% rdg +0.10 ohm
@ 0.2 to 0.5 mA	5.0	400.0	0.015% rdg +0.05 ohm
@ 0.5 to IE max	5.0	400.0	0.015% rdg +0.03 ohm
Ohm source (high)			
@ 0.05 to 0.1 mA	400.0	4000.0	0.015% rdg +0.5 ohm
@ 0.01 to IE max	400.0	4000.0	0.015% rdg +0.3 ohm

True Ohm Measurement current (pulsed) 0.25 mA. 3W measurement current match 1% Source exitation current IEXI(max) = 2.0 V / R, IEXI must never exceed 3 mA. Pulsed current (source) Unit is compatible with smart transmitters and PLCs with pulse > 5 ms.

Current — mA and Loop

Range mA ..... **0 to 24 mA**
Loop power for transmitters..... **Yes, 24 VDC / ± 10 %**
Isolated input..... **Yes**

Current mA	Range		Accuracy ± 12 months
	min	max	
Read (Isolated)	0.000 mA	24.000 mA	0.010% rdg +2µA
Read (non-isolated)	0.000 mA	24.000 mA	0.010% rdg +2µA
Source	0.000 mA	24.000 mA	0.010% rdg +2µA

Hart resistor 250 ohm (On/O in software). Maximum loop resistance source (Hart on/ Hart o) 700 ohm / 950 ohm. mA source voltage input range (external power/HART resistor o) 1V 30V.

Specifications

Thermocouple—TC

TC types ..... **B/BP/C/E/J/K/LN/R/S/T/U/XK**
Cold junction compensation ON/OFF control ..... **Yes**

Thermocouple Type	Resolution		Range				Accuracy	
	Source	Measure	min °C	max °C	min °F	max °F	°C	°F
B	0.1	0.1	250	300	482	572	4.02	7.42
			300	400	572	752	3.36	6.05
			400	600	752	1112	2.47	4.45
			600	800	1112	1472	1.60	2.88
			800	1000	1472	1832	1.39	2.51
			1000	1820	1832	3308	1.07	1.93
BP	0.1	0.1	0	1200	32	2192	0.89	1.61
			1200	2000	2192	3632	1.39	2.51
			2000	2500	3632	4532	1.96	3.53
C	0.1	0.1	0	200	32	392	0.75	1.35
			200	800	392	1472	0.64	1.16
			800	1200	1472	2192	0.78	1.41
			1200	1600	2192	2912	0.97	1.75
			1600	2000	2912	3632	1.24	2.24
			2000	2316	3632	4200.8	1.70	3.06
E	0.1	0.01	-200	-100	-328	-148	0.46	0.83
			-100	0	-148	32	0.26	0.47
			0	400	32	752	0.20	0.36
			400	1000	752	1832	0.30	0.54
J	0.1	0.01	-210	-150	-346	-238	0.59	1.07
			-150	0	-238	32	0.34	0.62
			0	660	32	1220	0.26	0.47
			660	1200	1220	2192	0.36	0.65
K	0.1	0.01	-200	-100	-328	-148	0.72	1.30
			-100	0	-148	32	0.35	0.63
			0	400	32	752	0.30	0.54
			400	800	752	1472	0.37	0.67
			800	1000	1472	1832	0.42	0.76
			1000	1372	1832	2501.6	0.53	0.96

Thermocouple Type	Resolution		Range				Accuracy	
	Source	Measure	min °C	max °C	min °F	max °F	°C	°F
L	0.1	0.01	-200	-100	-328	-148	0.37	0.67
			-100	900	-148	1652	0.26	0.47
N	0.1	0.01	-200	-100	-328	-148	1.08	1.95
			-100	0	-148	32	0.50	0.90
			0	1000	32	1832	0.41	0.74
			1000	1300	1832	2372	0.49	0.89
R	0.1	0.1	-50	0	-58	32	2.72	4.90
			0	200	32	392	1.89	3.41
			200	660	392	1220	1.17	2.11
			660	1600	1220	2912	0.95	1.71
			1600	1768.1	2912	3214.58	1.07	1.93
S	0.1	0.1	-50	0	-58	32	2.51	4.52
			0	200	32	392	1.86	3.35
			200	400	392	752	1.21	2.18
			400	1600	752	2912	1.10	1.98
			1600	1768.1	2912	3214.58	1.23	2.22
T	0.1	0.01	-200	-100	-328	-148	0.70	1.26
			-100	0	-148	32	0.38	0.69
			0	200	32	392	0.26	0.47
			200	400	392	752	0.22	0.40
U	0.1	0.01	-200	0	-328	32	0.54	0.98
			0	600	32	1112	0.26	0.47
XK	0.1	0.01	-200	-100	-328	-148	0.43	0.78
			-100	0	-146	32	0.23	0.42
			0	400	32	752	0.18	0.33
			400	800	752	1472	0.24	0.44

Specifications

Resistance—RTD

RTD types..... **Pt10/50/100/200/400/500/1000, Cu10/50/100, Ni120, YSI400**
Response time..... **Less than 5 mSec.**
Connection..... **2, 3 and 4-wire**

RTD Type	Resolution		Range				Accuracy	
	Source	Measure	min °C	max °C	min °F	max °F	°C	°F
Pt10(90)385	0.1	0.1	-200	100	-328	212	0.85	1.53
			100	400	212	752	0.98	1.77
			400	660	752	1220	1.12	2.02
			660	850	1220	1562	1.23	2.22
Pt50(90)385	0.1	0.01	-200	100	-328	212	0.22	0.40
			100	400	212	752	0.29	0.53
			400	660	752	1220	0.35	0.63
			660	850	1220	1562	0.41	0.74
Pt100(90)385	0.1	0.01	-200	100	-328	212	0.12	0.22
			100	400	212	752	0.20	0.36
			400	660	752	1220	0.26	0.47
			660	850	1220	1562	0.31	0.56
Pt200(90)385	0.1	0.01	-200	265	-328	509	0.14	0.26
			265	400	509	752	0.55	0.99
			400	660	752	1220	0.64	1.16
			660	850	1220	1562	0.72	1.30
Pt400(90)385	0.1	0.01	-200	0	-328	32	0.09	0.17
			0	400	32	752	0.34	0.62
			400	660	752	1220	0.41	0.74
			660	850	1220	1562	0.47	0.85
Pt500(90)385	0.1	0.01	-200	100	-328	212	0.22	0.40
			100	400	212	752	0.29	0.53
			400	660	752	1220	0.35	0.63
			660	850	1220	1562	0.41	0.74
Pt1000(90)385	0.1	0.01	-200	100	-328	212	0.14	0.26
			100	400	212	752	0.20	0.36
			400	660	752	1220	0.26	0.47
			660	850	1220	1562	0.31	0.56

RTD Type	Resolution		Range				Accuracy	
	Source	Measure	min °C	max °C	min °F	max °F	°C	°F
P50(90)391	0.1	0.01	-200	100	-328	212	0.21	0.38
			100	400	212	752	0.28	0.51
			400	660	752	1220	0.35	0.63
			660	850	1220	1562	0.40	0.72
			850	1100	1562	2012	0.49	0.89
P100(90)391	0.1	0.1	-200	100	-328	212	0.15	0.27
			-100	400	212	752	0.20	0.36
			400	660	752	1220	0.26	0.47
			660	850	1220	1562	0.31	0.56
			850	1100	1562	2012	1.38	2.49
P100(90)392	0.1	0.01	-260	100	-436	212	0.13	0.24
			100	400	212	752	0.19	0.35
			400	630	752	1166	0.25	0.45
M10(90)427	0.1	0.1	-200	260	-328	500	0.85	1.53
M50(90)428	0.1	0.01	-200	200	-328	392	0.21	0.38
M100(90)428	0.1	0.01	-200	200	-328	392	0.14	0.26
H100(90)617	0.1	0.01	-60	180	-76	356	0.11	0.20
H120(90)672	0.1	0.01	-80	260	-112	500	0.10	0.18
P100(90)JIS	0.1	0.01	-200	100	-328	212	0.14	0.26
			100	500	212	932	0.22	0.40
YSI-400	0.1	0.01	15	150	59	302	0.02	0.04

Read accuracy is based on 4 wire input. Source accuracy in terminals 2 wire source.

Specifications

Pressure modules, Barometric option (BARO) and APM CPF

APM CPF Type (s)	Gauge						12 month Accuracy ± 0 to 30 % range	12 month Accuracy ± 30 to 110 % range	12 month Accuracy and Vacuum % FS
	bar		MPa		psi				
3 bar	-1	-3					0.0075% FS	0.025% RDG	0.06% FS + 1 LSD
300 kPa			-0.099	0.300					
30 psi					-14.5	30			
10 bar	-1	10					0.0075% FS	0.025% RDG	0.06% FS + 1 LSD
1 MPa			-0.099	1.0					
100 psi					-14.5	100			
30 bar	-1	30					0.0075% FS	0.025% RDG	0.06% FS + 1 LSD
3 MPa			-0.099	3.0					
300 psi					-14.5	300			
100 bar	0	100					0.015% FS	0.05% RDG	N/A
10 MPa			0	10.0					
1 kpsi					0	1000			
300 bar	0	300					0.015% FS	0.05% RDG	N/A
30 MPa			0	30.0					
3 kpsi					0	3000			
700 bar	0	700					0.03% FS	0.1% RDG	N/A
70 MPa			0	70.0					
10 kpsi					0	10 000			
1000 bar	0	1000					0.03% FS	0.1% RDG	N/A
100 MPa			0	100.0					
15 kpsi					0	15 000			

Absolute Pressure

APM CPF with ASC-400 BARO option / 12 month Accuracy ±					
3 bar APM CPF	**Accuracy ±**	**300 kPa APM CPF**	**Accuracy ±**	**30 psi APM CPF**	**Accuracy ±**
0.0138 to 1 barA	0.0008 barA	1.38 to 100 kPaA	0.08 kPaA	0.2 to 14.5 psiA	0.011 psiA
1 to 4 barA	0.025% RDG + 0.0003 barA	100 to 400 kPaA	0.025% RDG + 0.03 kPaA	14.5 to 44.5 psiA	0.025% RDG + 0.003 psiA
10 bar APM CPF	**Accuracy ±**	**1 MPa APM CPF**	**Accuracy ±**	**30 psi APM CPF**	**Accuracy ±**
0.0138 to 1 barA	0.0008 barA	0.00138 to 0.1 MPaA	0.00008 MPaA	0.2 to 14.5 psiA	0.011 psiA
1 to 4 barA	0.001 barA	0.1 to 0.4 MPaA	0.0001 MPaA	14.5 to 44.5 psiA	0.011 psiA
4 barA to 11 barA	0.025% RDG	0.4 MPaA to 1.1 MPaA	0.025% RDG	44.5 to 114.5 psiA	0.025% RDG
30 bar APM CPF	**Accuracy ±**	**3 MPa APM CPF**	**Accuracy ±**	**300 psi APM CPF**	**Accuracy ±**
0.014 to 1 barA	0.001 barA	0.0014 to 0.1 MPaA	0.001 MPaA	0.2 to 14.5 psiA	0.01 psiA
1 to 10 barA	0.003 barA	0.1 to 1.0 MPaA	0.003 MPaA	14.5 to 104.5 psiA	0.03 psiA
10 barA to 31 barA	0.025% RDG	1.0 MPaA to 3.1 MPaA	0.025% RDG	104.5 to 314.5 psiA	0.025% RDG

Specied temperature range -10 to 50°C / 14 to 122°F (APM CPF & BARO option) Vacuum FS, 1 bar / 100 kPA / 14.5 psi. F.S. (full scale) is the numerical value of the positive pressure range. Accuracy includes hysteresis, nonlinearity, repeatability and reference standard uncertainty, 1 Year typical longterm stability, operated inside the rated temperature span and pressure range. Requiring frequently zeroing.

Options & Accessories

Standard Delivery

- ASC-400 unit.
- Battery set (6 x AA).
- Electronic Manual (USB).
- 2 sets of test leads & test clips (black & red).
- Handy soft case, with pocket for the test leads and an opening in the top to provide easy access to the test terminals.
- Full international traceable calibration certicate.

Accessories

Extension Cable for Type K - 5 m **121983**
Extension Cable for Type N - 5 m **122523**
Thermocouple Male Plug — Type Cu-Cu — White. **120519**
Thermocouple Male Plug — Type R / S — Green **120518**
Thermocouple Male Plug — Type K — Yellow **120517**
Thermocouple Male Plug — Type J — Black **120516**
Thermocouple Male Plug — Type T — Blue **120515**
Thermocouple Male Plug — Type N — Orange. **120514**
Thermocouple plug + K wire + alligator **2206011**
Thermocouple plug + T wire + alligator **2206012**
External Power Supply / Charger 9VDC/200mA - 230VAC/115VAC ... **124720**
6x 1.5V AA Ni-MH rechargeable batteries **128859**
Cable 2 m (6.6 ft.) with LEMO/Banana connectors **65-PT100-LB-CABLE**

Ordering

Order No.				Description
ASC-400				Multi-function Signal Calibrator
	BARO			Barometric module to absolute pressure mode (optional)
				Certificate
		F		Traceable Certificate to International Standards
		H		Accredited Certificate - ISO17025 (optional)
				Accessories (Optional)
			A	External Power Supply
			B	Power Supply /Charger plus 6 x Ni-MH rechargeable AA
			C	Large padded soft case with shoulder strap
			T	Temperature Sensor: Pt100 Probe incl. traceable certificate
			T2	Temperature Sensor: Pt100 Probe, -40 to 150 °C incl. accredited certificate – ISO17025
			T3	Temperature Sensor: STS050 Probe, -40 to 400 °C incl. accredited certificate – ISO17025
ASC-400	BARO	FC		ASC-400 with barometric module, traceable certificate and soft case

JOFRA calibration

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