

# ASC 400

## Advanced Signal Calibrator



- Read and source RTC, TC, Current, Voltage, Frequency und Resistance with Puls train output
- Can be used with APM CPF pressure module series or dry block calibrator for documentation and calibration of pressure, temperature tests and measurements
- Simultaneous read-back and fast RTD simulation
- Can be used with RTD as high accuracy thermometer

ASC-400 is a portable process signal calibrator that provides the functionality and accuracy you expect from a laboratory calibration system, but compact enough to fit into the tool box and be operated 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.

The full numerical keypad with a series of function keys and the cursor keys, provide a simple and quick user interface. The new full color display offers the best visibility and overview.

The high accuracy of ASC-400 has not been achieved on account of fragile measurements or source circuitries, the ASC-400 has fuse less protection – no lost replacement fuses...

## Functions

**Optimal read out visibility and high accuracy** Large full color display and extremely user friendly interface. The ASC-400 accuracy is designed to meet high demands from 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 out-put, Resistance 5 to 4000 Ohm

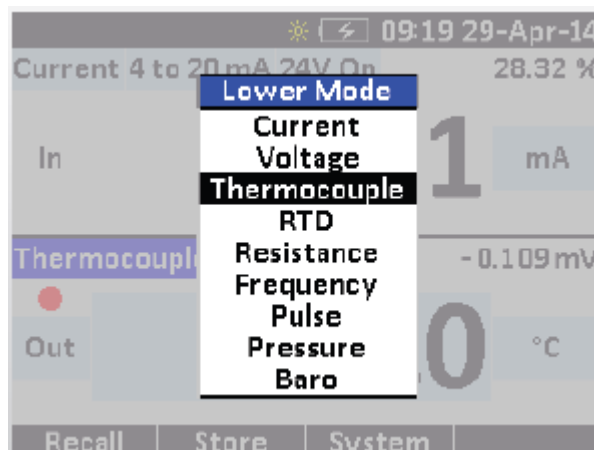
**Simultaneous read-back and fast RTD simulation** Including isolated read-back from device-under-test of mA, V, and pressure. The RTD simulation feature is fast enough to work with pulsed transmitters and PLC's

**Calibrate pressure and temperature** Full featured pressure calibrator, just apply an APM, and benefit from, automatic leak-test, pressure-switch calibration and more... Use the ASC-400 together with JOFRA temperature calibrators, add measurement channels for sensors or temperature switches

**Measure temperature** ASC-400 can be used as high accuracy thermometer, ASC-400 works with RTD's and CvD equations, to obtain true temperature, based on "true ohm" technology!

### Unique "non-menu" user interface

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



### Simultaneous input and output

ASC-400 offers simultaneous input and output, which makes it possible to calibrate and adjust a transmitter with no need for additional equipment.

### Temperature reading at reference level

This document is subject to change without notice

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The ASC-400 offers the possibility to characterize a RTD sensor. This feature is used to add a missing special curve or to characterize a reference RTD. This together with "true ohm" technology, eliminating thermo voltage in the RTD loop, makes 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 including the necessary Calendar-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.

### **Fuseless Protection**

If you by mistake connect the ASC-400 to over voltage, the unit is protected with a fuseless protection feature. This feature protects the unit and prevents expensive repairs and recalibration of the unit. To avoid injury never connect the unit to the mains supply!

### **5 intelligent memories**

Full storage, all settings on both upper & lower channel are stored. Customer defined memory names.

### **Useful large soft case (Option C)**

As an option you can get the ASC-400 delivered with a large padded soft case. The spacey soft case is designed for protection during transport. The soft case has 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 is delivered with 6 AA alkaline batteries.

Additionally two power supply options are available;

Option A, mains adapter, used as battery eliminator to preserve batteries in long term workshop testing & calibration.

Option B, like Option A, but supplemented with 6 x AA Ni-MH chargeable batteries, which are charged while mounted in the ASC-400.

### **Gauge or Absolute pressure? (Option BARO)**

The choice is yours! The BARO option turns any gauge measuring APM into an absolute measuring device. Accuracy:  $\pm 0.5$  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 range from vacuum to 1 000 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**

### **Layout**

### 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

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

We call it the wireless keyboard...

### Cursor keys

Set-up navigation, fine tuning of output values, for convenient "analog" feeling.

### Primary display

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

### Function keys

The function of the keys is clearly explained in the bottom of the display.

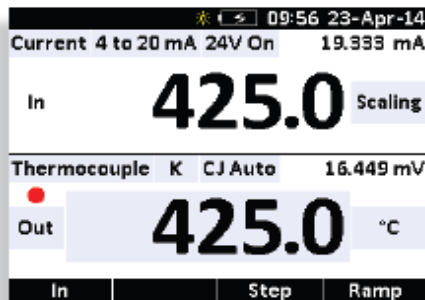
### Numeric keyboard

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

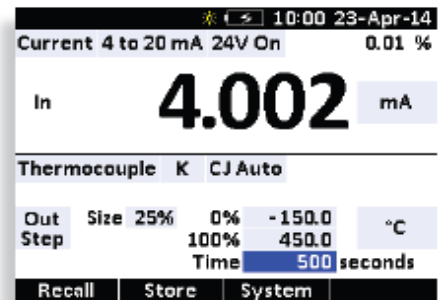




Online % error calculation, fast and responsive reading, for calibration and adjustment tasks.



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



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





|                                     |              |       |          |
|-------------------------------------|--------------|-------|----------|
| 08:39 23-Apr-14                     |              |       |          |
| Current 4 to 20 mA 24V On 18.643 mA |              |       |          |
| In                                  | <b>-0.40</b> | %     | Error    |
| Pressure                            | 68.95        | Gauge | 0.0 /min |
| In                                  | <b>5.52</b>  | bar   |          |
| Baro                                |              |       |          |

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

|                                   |               |       |                  |
|-----------------------------------|---------------|-------|------------------|
| 08:41 23-Apr-14                   |               |       |                  |
| Current 4 to 20 mA 24V On 89.26 % |               |       |                  |
| In                                | <b>18.281</b> | mA    |                  |
| Pressure                          | 1000.0        | Gauge | <b>-6.0 /min</b> |
| In                                | <b>78.03</b>  | PSI   |                  |
| Baro                              |               |       |                  |

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

|                 |             |        |          |
|-----------------|-------------|--------|----------|
| 08:50 23-Apr-14 |             |        |          |
| Switch Test     |             |        |          |
|                 | Closed      | 115.70 |          |
| In              | Opened      | 126.11 | PSI      |
|                 | Dead band   | -10.41 |          |
| Pressure        | 1000.0      | Gauge  | 0.0 /min |
| In              | <b>0.01</b> | PSI    |          |
| Baro            |             |        |          |

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