

# HANDHELD CONTROLLER OC 4000

- ✓ **Five Inputs for** Two Pressure Sensors  
Pt-100 Temperature Sensor  
Volumetric Flow Turbine  
Active Pick-up
- ✓ **2.5MB Datalogger**
- ✓ **8 Transients recording at 1 kHz Rate**
- ✓ **Free Scaling in Process Units**
- ✓ **Calculating of Power in kW, HP**
- ✓ **DIN, US and UK Norms**
- ✓ **USB Data Port**
- ✓ **Internal rechargeable Battery**

**Model OC4000** is a Process Controller-Datalogger with inputs for 5 sensors: two pressure gauges, one temperature sensor, one flowmeter turbine and one active pick-up. Four sensors can be connected at the same time. The results are visible at the front LCD display. The process units can be programmed in accordance with DIN, US or UK norms in german or english.

In the Datalogger Mode the measurements of all signal channels are stored in internal 512kB non-volatile memory. Optional Memory of additional 2MB is available. Internal Real Time Clock automatically adds the Date and the Time to each stored measurement.

For measurements of fast Transients of the pressure sensor, eight memory slots are reserved for 8 individual transient measurements. The results are displayed as graphics at the front display.

Supporting program **OC4CON** permits bi-directional communication via USB data port. The stored measurements can be downloaded to the PC and displayed as tables and graphics. In the upload mode the process parameters can be set at the PC, uploaded to OC4000 and stored there.

Parameters for the used pressure sensors, flowmeters and pick-ups can be set with the front keys. The pressure reading in bar or psi, corresponding to 20mA output from the sensors, is set with the keys and automatically calibrated. The both pressure channels can be set to zero by means of programmable Tara. The flow and the speed measurements are calibrated by means of scaling constants.

Power is calculated from the flow rate and the pressure and displayed and stored in units selected in the instrument's menu:

Norm:	EU	UK	US
Pressure:	bar	psi	psi
Temperature:	°C	°C	°F
Flow rate:	LPM	GPM	GPM
Power:	kW	HP	HP

kW	=	P (bar) x F (LPM) : 600
HP	=	P (psi) x F (USG PM) : 1720
HP	=	P (psi) x F (UK GPM) : 1432

During the entire operation time of the instrument the maximum and the minimum measured values from both pressure sensors are automatically stored. They can be recalled at the display or reset with the front keys.

The difference pressure of the both sensors is continuously measured and displayed.

Password is used for protecting the programmed parameters. Without the password only the Datalogger function, the Transient measurement and the Display backlight can be operated.



OC4000 is enclosed in a hand held cabinet and supplied from internal rechargeable battery. The charging time is automatically controlled and limited by time. Flashing LED indicates the charging. A mains charger can also be used while the instrument is operating. Special optional cable is available for 12 or 24V Car operation.

The internal microcontroller with 14 bits ADC represents 16000 points of resolution. The measurements are multiplexed at the LCD display. The display permits also graphic representation of up to 8 transient measurements of the pressure in signal channel 1.

The instrument's menu is protected with a Password against unauthorized entry. The Menu contains scaling constants, storing intervals, display backlight, communication parameters, display resolution, selection of flow rate or speed, calibration of signal channels in DIN, UK or US values and selection of german or english language.

Two M12 round screw 8 pin terminals for sensor connection, the UBS data port and the charger jack are placed at the front and the rear of the cabinet. The instrument is designed in accordance with CE and RoHS 2002/95/EG.

## SPECIFICATIONS

### INPUTS and RANGES

#### Input 1 with Tara

4-20mA, 13 Ohm

#### Input 2 with Tara

4-20mA, 13 Ohm

#### Input 3

Pt-100, -50 ... 500.0 °C

#### Input 4

0.5 Hz ... 10 kHz, 100mV RMS

#### Input 5

30 ... 60000 RPM scalable

5 ... 24V positive pulses

### ACCURACY

#### Inputs 1, 2, 3, 4, 5

± (0.1%+1digit) from range.

### A-D-C

#### Resolution

14 Bit, ± (1 LSB + 1 digit).

### DISPLAY

LCD display, 128x64 pixels.

Graphic-numerical type.

### PEAK & HOLD MEMORY

Minimum and maximum values of two pressure signals. Recall at the display with the keypad.

### DATANLOGGER

#### Standard Memory 512Kb

16000 cycles, total 112000 measured values.

#### Optional Memory 2MB

80000 cycles, total 560000 measured values.

**Format:** 5 channels, Date, Time.

**Rate:** 2sec...60 minutes selectable.

### TRANSIENTS MEMORY

Eight memory slots for 32768 samples each.

**Rate:** 1mS...10mS selectable.

### DATA PORT

USB 1 with Baud Rate 9600, 19200 and 115200 Bd.

### KEYPAD

4 Function keys, 4 Direction keys and OK key.

### SUPPLY

Rechargeable battery 6V, 2Ah, permits 4h operation.

Mains charger 100-265VAC.

Option: 12-24V DC Car cable.

### EXCITATION

11V-50mA supply for the pressure sensors and the pick-up

### CABINET

Hand held cabinet with keypad and display. Two 8-pin screw connectors, USB data port, charger jack

### MECHANICAL

Dimensions: 215 x 90 x 40 mm

Weight: 460 g

## KEY SELECTABLE DISPLAY FUNCTIONS

### Measuring Mode

#### Four Sensor Measurements

Pressure P1, Pressure P2,  
Temperature T, Flow rate Q (or RPM)

P1	bar	T	°C
74.32		86.5	
P2	bar	Q	l/min
76.12		38.4	

### Display Type selected with Direction Keys UP and DOWN

Peak values of P1 and P2,  
Pressure Difference P1-P2  
Power calculated from Flow rate Q  
and Pressure P1

P1 <sup>▲</sup>	bar	P1-P2	bar
124.3		13.5	
P2 <sup>▲</sup>	bar	PW	kW
24.1		38.4	

P1 <sup>▼</sup>	bar	P1-P2	bar
12.3		13.55	
P2 <sup>▼</sup>	bar	PW	kW
4.1		38.4	

Large display of P1 measurements

P1	bar
82.2	

P1	bar
82.2	

Large display of positive and negative  
Peak values of pressure P1

P1 <sup>▲</sup>	bar
124.3	

P1 <sup>▼</sup>	bar
12.3	

Large display of P2 measurements

P2	bar
64.6	

P2	bar
64.6	

Large display of positive and negative  
Peak values of pressure P2

P2 <sup>▲</sup>	bar
108.7	

P2 <sup>▼</sup>	bar
4.1	

Large display of Temperature  
and Flow rate

T	°C
83.3	

Q	l/min
13.4	

Large display of Flow rate and  
Temperature

Q	l/min
13.4	

T	°C
83.3	