

## Process Calibrator M505

### Process Calibrator – Datalogger M505D

- Current output 0-22mA, Source/Sink
- Voltage output 0-25V
- mV outputs 0-27mV and 0-540 mV
- DIN Thermocouples J, K, N, R, S, T, B, E
- RTD Simulator -200 ... 850°C
- Resistance range up to 3kOhm
- Multimeter  $\pm 2V$  to  $\pm 200V$  DC and  $\pm 100mA$
- Measurements of fast transients
- Datalogger function in model M505D



**Model M505** is a hand held Calibrator-Multimeter for generation of currents 0-22mA in source or Sink Mode and Voltages 0-25VDC. External voltages  $\pm 2V$ ,  $\pm 20V$  and  $\pm 200VDC$  (selected ranges or auto range) and currents up to  $\pm 100mA$  can be measured simultaneously with the generated calibrating signals.

Further functions are the generation of mV-Signals, Simulation of DIN-Thermocouples, Generation of Resistances and RTD Temperature Sensors. Up to eight fast input signals -Transients- can be measured, memorized and shown at the display as graphics or uploaded to a PC. Datalogger function for the calibrator output and the multimeter input signals can be activated. Both signals are stored as tables and shown as graphics at the LCD display. By using the supporting program the data can be transferred to the PC and shown as tables and graphics. For fast checking or calibration of Process Transmitters the calibrator output can be used for the input, whereas the output from the Transmitter will be measured by the multimeter. The results are shown at the display immediately.

mV Voltages 0-27mV or 0-540mV for calibration of strain gauges amplifiers, transmitters and small signal instruments. The output voltage can be resolved up to 0.001mV.

Thermocouples J, K, N, R, S, T, B, and E are simulated across the entire DIN ranges. The output is via T/C plug with automatic compensation of the junction. This can be also switched-off.

RTD Thermometers Pt-100 ... 1000 and Ni-1000 are simulated across the entire DIN range.

Resistance Source is a generator of resistance values from 45 to 3000 Ohm with 0.5Ohm resolution.

Datalogger (Option): The generated calibrator signal and the measured signal at the multimeter input will be stored as tables with date and time added. The interval is selectable from 2 sec. to 24h. The data can be transferred to a PC, shown as tables and graphics and handled under Windows and Excel.

Transients: Eight memory slots are available for storing of fast signals at the multimeter input. Each transient can individually be shown at the LCD display and optional transferred to a PC, shown as tables and graphics and handled under Windows and Excel.

M505 is powered from internal rechargeable battery which permits up to 8 hours operation. All ranges and functions can individually be calibrated from the keypad. The Terminals are 4mm gold plated plugs. Copper T/C plug is used for Thermocouple Outputs and mV Signals. USB terminal is available for Data Transfer..

## CALIBRATOR specification

### Function & Ranges

DC current:	0.000 – 22.000 mA	Source or Sink
DC voltage:	0.000 – 25.000 V	
DC mV voltage:	0.000 – 27.000 mV	
	0.00 – 540.00 mV	
Resistance source:	45.00 Ohm to 3000.00 Ohm	
Thermocouples:	-200.0 °C up to max. (°C) according to ITS90	J (1200 °C), K (1370 °C), N (1300 °C), R (1760 °C), S (1760 °C), T (400 °C), B (1820 °C), E (1000 °C).
RTD Thermometer:	-270.0 °C up to max. -60.0 °C to 170.0 °C	Pt-100, 200, 500, Pt-1000 Ni-1000
Value Selection	Direct entry Steps Ramps	From the keypad, Free selectable, rising or falling. Raising or falling ramps with selectable steps

### Accuracy

DC-V, DC-mV, DC-I	± (0.05% from value + 0.1% from range)
Thermocouples	± (0.1% from value + 1 °C)
RTD simulation	± (0.1% from value + 0.5 °C)
Resistance source	± (0.1% from value + 0.5 Ohm)
Temp. coefficient:	< 25ppm / K

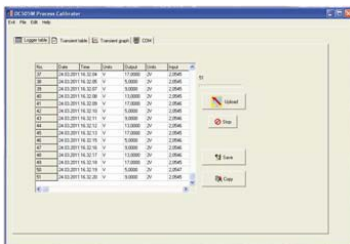
## MULTIMETER specification

### Function & Ranges

2 V DC	0.0000 to 2.0000 V	Input resistance 1.38 M Ohm
20 V DC	0.000 to 20.000 V	Input resistance: 593 k Ohm
200 V DC	0.00 to 200.00 V	Input resistance: 563 k Ohm
100 mA DC	0.00 to 100.00 mA	Input resistance: 10 Ohm

### Accuracy

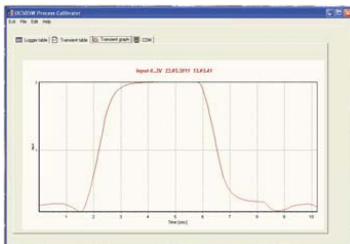
VDC/mADC	± (0.1% from value + 1digit)
Sampling rate	2 readings / sec.



### DATALOGGER M505D

The generated signals at the calibrator input and the signals at the multimeter input are stored as tables, with date and time added from internal RTC. Measuring Window and two Time Intervals can be set. When the input signal is within the window, the data are stored with one interval. Outside the window they are stored with the second interval. The data can be uploaded to a PC and shown as tables and graphics. The Soft Manager supports the communication under Windows.

Example: Calibrator output Pt-100 is applied to a Process Transmitter with 0-10V output connected to the Multimeter input.



### TRANSIENTS

Fast signals at the Multimeter input can be stored in up to 8 memory slots with a sampling rate of 1ms. Each Transient contains 256 points and can be assigned to the time period selectable from 0.25s to 300s. The trigger level is programmable.

### Accessory (included)

- Mains Charger 95 - 240VAC
- Two Signal Cables,
- T/C plug K, U
- Calibration Sheet, Owner's Manual
- Soft Manager for Windows
- Carrying Case.

