



Multicalibrator for Instrumentation MCS-8

- Measures and generates mA, mV, volts, ohms, RTD, TC.
- Simultaneous input and output operation.
- Isolated input and output.
- Interface with a Windows-based Calibration Software to provide a true Computer-Aided Calibration System with documenting capability.
- Real-time data acquisition capability when connected to a computer.

MCS-8 Multicalibrator enables measurement and generation of signals used in instrumentation and Process Control. It is a high-accuracy instrument, having high stability features in temperature changes and long-term aging conditions. It contains useful items allowing its on field and workbench use. The calibrator also incorporates concepts of automatic checking and calibration via computer, such as report and certificate issues, automatic work management, data archiving for an overall coverage of quality procedure requirements. When connected to computer can be used as an online data logger.

Specifications - Input

Input Ranges	Resolution	Accuracy	Remarks
millivolt -150 mV to 150 mV -500 mV to -150 mV 150 mV to 2450 mV	0.001 mV 0.01 mV 0.01 mV	± 0.01 % FS * ± 0.02 % FS ± 0.02 % FS	R _{input} > 10 MΩ auto-range
volt -10 V to 11 V 11 V to 45 V	0.0001 V 0.0001 V	± 0.02 % FS ± 0.02 % FS	R _{input} > 1 MΩ
mA -5 mA to 24.5 mA	0.0001 mA	± 0.02 % FS	R _{input} < 160 Ω
resistance 0 to 400 Ω 400 to 2500 Ω	0.01 Ω 0.01 Ω	± 0.01 % FS ± 0.03 % FS	Excitation Current 0.85 mA, auto-range
Pt-100 -200 to 850 °C / -328 to 1562 °F	0.01 °C / 0.01 °F	± 0.1 °C / ± 0.2 °F	IEC-60751
Pt-1000 -200 to 400 °C / -328 to 752 °F	0.1 °C / 0.1 °F	± 0.1 °C / ± 0.2 °F	IEC-60751
Cu-10 -200 to 260 °C / -328 to 500 °F	0.1 °C / 0.1 °F	± 2.0 °C / ± 4.0 °F	MINCO 16-9
Ni-100 -60 to 250 °C / -76 to 482 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	DIN-43760
TC-J -210 to 1200 °C / -346 to 2192 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	IEC-60584
TC-K -270 to -150 °C / -454 to -238 °F -150 to 1370 °C / -238 to 2498 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 0.5 °C / ± 1.0 °F ± 0.2 °C / ± 0.4 °F	IEC-60584
TC-T -260 to -200 °C / -436 to -328 °F -200 to -75 °C / -328 to -103 °F -75 to 400 °C / -103 to 752 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 0.6 °C / ± 1.2 °F ± 0.4 °C / ± 0.8 °F ± 0.2 °C / ± 0.4 °F	IEC-60584
TC-B 50 to 250 °C / 122 to 482 °F 250 to 500 °C / 482 to 932 °F 500 to 1200 °C / 932 to 2192 °F 1200 to 1820 °C / 2192 to 3308 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 2.5 °C / ± 5.0 °F ± 1.5 °C / ± 3.0 °F ± 1.0 °C / ± 2.0 °F ± 0.7 °C / ± 1.4 °F	IEC-60584
TC-R -50 to 300 °C / -58 to 572 °F 300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F ± 0.7 °C / ± 1.4 °F	IEC-60584
TC-S -50 to 300 °C / -58 to 572 °F 300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F ± 0.7 °C / ± 1.4 °F	IEC-60584
TC-E -270 to -150 °C / -454 to -238 °F -150 to 1000 °C / -238 to 1832 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 0.3 °C / ± 0.6 °F ± 0.1 °C / ± 0.2 °F	IEC-60584
TC-N -260 to -200 °C / -436 to -328 °F -200 to -20 °C / -328 to -4 °F -20 to 1300 °C / -4 to 2372 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F ± 0.4 °C / ± 0.8 °F ± 0.2 °C / ± 0.4 °F	IEC-60584
TC-L -200 to 900 °C / -328 to 1652 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	DIN-43710
TC-C 0 to 1500 °C / 32 to 2732 °F 1500 to 2320 °C / 2732 to 4208 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 0.5 °C / ± 1.0 °F ± 0.7 °C / ± 1.4 °F	W5Re / W26Re W5Re / W26Re

(*) FS = Full Scale

Specifications - Output

Output Ranges	Resolution	Accuracy	Remarks
millivolt -10 mV to 110 mV	0.001 mV	± 0.02 % FS	R _{output} < 0.3 Ω
volt -0.5 V to 12 V	0.0001 V	± 0.02 % FS	R _{output} < 0.3 Ω
mA 0 to 24 mA	0.0001 mA	± 0.02 % FS	R _{maximum} = 700 Ω
Two-wire transmitter (XTR) 4 to 24 mA	0.0001 mA	± 0.02 % FS	V _{maximum} = 60 V
resistance 0 to 400 Ω 0 to 2500 Ω	0.01 Ω 0.1 Ω	± 0.02 % FS ± 0.03 % FS	External excitation current of 1 mA
Pt-100 -200 to 850 °C / -328 to 1562 °F	0.01 °C / 0.01 °F	± 0.2 °C / ± 0.4 °F	IEC-60751
Pt-1000 -200 to 400 °C / -328 to 752 °F	0.1 °C / 0.1 °F	± 0.1 °C / ± 0.2 °F	IEC-60751
Cu-10 -200 to 260 °C / -328 to 500 °F	0.1 °C / 0.1 °F	± 2.0 °C / ± 4.0 °F	MINCO 16-9
Ni-100 -60 to 250 °C / -76 to 482 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	DIN-43760
TC-J -210 to 1200 °C / -346 to 2192 °F	0.1 °C / 0.1 °F	± 0.4 °C / ± 0.8 °F	IEC-60584
TC-K -270 to -150 °C / -454 to -238 °F -150 to 1370 °C / -238 to 2498 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F ± 0.4 °C / ± 0.8 °F	IEC-60584
TC-T -260 to -200 °C / -436 to -328 °F -200 to -75 °C / -328 to -103 °F -75 to 400 °C / -103 to 752 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.2 °C / ± 2.4 °F ± 0.8 °C / ± 1.6 °F ± 0.4 °C / ± 0.8 °F	IEC-60584
TC-B 50 to 250 °C / 122 to 482 °F 250 to 500 °C / 482 to 932 °F 500 to 1200 °C / 932 to 2192 °F 1200 to 1820 °C / 2192 to 3308 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 5.0 °C / ± 10.0 °F ± 3.0 °C / ± 6.0 °F ± 2.0 °C / ± 4.0 °F ± 1.4 °C / ± 2.8 °F	IEC-60584
TC-R -50 to 300 °C / -58 to 572 °F 300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 2.0 °C / ± 4.0 °F ± 1.4 °C / ± 2.8 °F	IEC-60584
TC-S -50 to 300 °C / -58 to 572 °F 300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 2.0 °C / ± 4.0 °F ± 1.4 °C / ± 2.8 °F	IEC-60584
TC-E -270 to -150 °C / -454 to -238 °F -150 to 1000 °C / -238 to 1832 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 0.6 °C / ± 1.2 °F ± 0.2 °C / ± 0.4 °F	IEC-60584
TC-N -260 to -200 °C / -436 to -328 °F -200 to -20 °C / -328 to -4 °F -20 to 1300 °C / -4 to 2372 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 2.0 °C / ± 4.0 °F ± 0.8 °C / ± 1.6 °F ± 0.4 °C / ± 0.8 °F	IEC-60584
TC-L -200 to 900 °C / -328 to 1652 °F	0.1 °C / 0.1 °F	± 0.4 °C / ± 0.8 °F	DIN-43710
TC-C 0 to 1500 °C / 32 to 2732 °F 1500 to 2320 °C / 2732 to 4208 °F	0.1 °C / 0.1 °F 0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F ± 1.4 °C / ± 2.8 °F	W5Re / W26Re W5Re / W26Re

Accuracy values are valid within one year and temperature range of 20 to 26 °C. For thermocouples, using the internal cold junction compensation add a cold junction compensation error of ± 0.2 °C or ± 0.4 °F.

Serial Communication: Modbus® RTU Protocol (RS-232/RS-485).

Dimension: 91 mm x 233 mm x 64 mm (HxWxD).

Weight: 1 kg approx.

Warranty: 1 year, except for rechargeable battery.

Included Items: carrying case, test leads, manual and battery charger.

Optional Accessories:

Communication Interface - Order Code: 06.02.0007-00.