



Dry Block Calibrators (low temperatures) T-25N / T-35N / T-50N

The T-25N, T-35N and T-50N Dry Block Calibrators perform functions that would require three different types of instruments: dry block calibrator, standard thermometer and calibrator for TCs, RTDs, mA, mV, ohms and thermostats.

- Model T-50N generates the coolest temperature available for a **PRESYS** dry block. It reaches -50 °C in an ambient temperature of 23 °C , with no need of well insulator.
- Optional temperature measurement and control by external probe with Callendar-Van Dusen coefficients.
- Resolution of 0.01 °C .
- Stability of $\pm 0.02\text{ °C}$ for all range of temperature.
- Input for RTD, thermocouples and thermostats.
- Internal regulated 24 Vdc power supply and mA input for 2-wire transmitters.
- Completely automatic calibration with or without the use of a computer.
- Documenting capabilities: connection with computer and ISOPLAN® calibration software.

The T-25N, T-35N and T-50N models control temperature over an insert in order to calibrate thermocouples, thermoresistances, glass thermometers, thermostats etc. Besides providing high accuracy temperature values, they also allow the measurement of signals generated by the thermocouples, thermoresistances and thermostats, which are being calibrated. This is possible due to an embedded calibrator specific for these types of signal, including 4-20 mA. They incorporate the function of dry block, standard thermometer and calibrator for RTD and TC sensors, besides mA reading. They present a wide range of programming resources, allowing them to perform automatic calibration of the sensors. In this case, the sensor is placed in the insert and its electrical terminals are connected to the embedded calibrator, the operator defines the calibration points and the number of repetitions, then the process is started so that all the sequence is automatically accomplished. Another way of performing automatic documented calibrations is by means of ISOPLAN® calibration software for PC/Windows™ which uses the RS-232 serial port to connect PC to the dry block. With ISOPLAN® it is possible to register sensors and instruments of the factory, generate work orders, create and print calibration certificates and reports, i.e., it brings all the advantages of computer data management to the calibration environment.

Technical Specifications

	T-25N	T-35N	T-50N
Operating Range: ambient temperature: 23 °C	-25 °C to +155 °C	-35 °C to +155 °C	-50 °C to +155 °C
Accuracy: internal reference with external probe	± 0.1 °C ± 0.07 °C		
Resolution:	0.01 °C		
Stability:	± 0.02 °C		
Axial Uniformity (40 mm) Dry Block:	± 0.05 °C Full range	± 0.06 °C Full range	± 0.07 °C Full range
Radial Uniformity Dry Block:	± 0.01 °C Full range	± 0.01 °C Full range	± 0.02 °C Full range
Heating Time:	10 min (25 °C to 140 °C)	16 min (25 °C to 140 °C)	11 min (25 °C to 140 °C)
Cooling Time:	11 min (25 °C to -25 °C)	16 min (25 °C to -35 °C)	25 min (25 °C to -50 °C)
Temperature Uniformity:	0.05 °C		
Weight:	10.5 kg	10.5 kg	12.5 kg
Power Supply:	115 or 230 Vac, 50/60 Hz		
Electric Power:	200 W	300 W	400 W
Units / Temperature Scales:	°C or °F / IPTS-68 or ITS-90, user selectable		
Display:	Graphic vacuum fluorescent with contrast adjustment		
Well Diameter / Depth:	Ø 25.4 mm (1") / 124 mm		
Dimension (HxWxD):	260 x 180 x 270 mm		315 x 180 x 270 mm

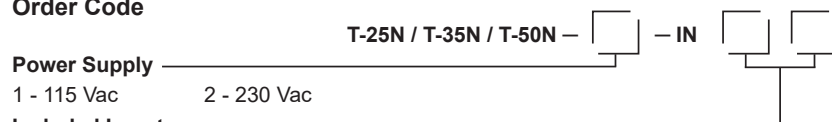
Electrical Input Ranges Specifications

Input Ranges	Resolution	Accuracy	Remarks
millivolt -150 to 150 mV 150 to 2450 mV	0.001 mV 0.01 mV	± 0.01 % FS ± 0.02 % FS	R _{input} > 10 MΩ auto-range
mA -1 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 0.9 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-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

FS = Full Scale

Accuracy values are valid within one year and ambient temperature range from 20 to 26 °C. Outside these limits add 0.001 % FS / °C, taking 23 °C as the reference temperature. For thermocouples with internal cold junction compensation, add a cold junction compensation error of ± 0.2 °C or ± 0.4 °F.

Order Code



Included Insert

Choose between the inserts listed below. Unless specified, the accompanying insert is IN06.

Accessories

Inserts:	Holes	Order Code
IN01	1x 3/4"	06.04.0011-00
IN02	1x 1/2"	06.04.0012-00
IN03	1x 6.0 mm and 3x 1/4"	06.04.0013-00
IN04	3x 6.0 mm and 1x 1/4"	06.04.0014-00
IN05	4x 6.0 mm	06.04.0015-00
IN06	2x 6.0 mm and 2x 1/4"	06.04.0016-00
IN07	1x 6.0 mm 1x 8.0 mm and 1x 3/8"	06.04.0017-00
IN08	1x 6.0 mm 1x 3.0 mm and 2x 1/4"	06.04.0018-00
IN09	Without hole, to be drilled by the client	06.04.0019-00
IN10	Others, under ordering	06.04.0020-00
IN1P	1x 3.0 mm 1x 6.0 mm, 1x 8.0 mm, 1x 1/4"	06.04.0121-00
IN1A	1x 1/8", 1x 3/16", 2x 1/4", 1 3/8"	06.04.0122-00
IN1E	1x 4.0 mm, 1x 6.0 mm, 1x 8.0 mm, 1x 10.0 mm, 1x 1/4"	06.04.0123-00

Serial Communication: Modbus® RTU Protocol (RS-232/RS-485).
Included Items: soft carrying case, strap, insert (selectable), container for steel balls, tiny steel balls, insert extractor tool, test leads, manual and power cord.

Optional Accessories:

Temperature Sensors: 1/5 DIN Probe-R - Order Code: 04.06.0001-21;
 1/5 DIN Probe-A - Order Code: 04.06.0007-21;
 Communication Interface - Order Code: 06.02.0002-00