PRESYS

Temperature Calibrators
T Line (Industrial Standard)



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 thermoswitches.

- ✓ 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 ± 0.02 °C for all range of temperature.
- ✓ Input for RTD, thermocouples and thermoswitches.
- ✓ 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, thermoswitches etc. Besides providing high accuracy temperature values, they also allow the measurement of signals generated by the thermocouples, thermoresistances and thermoswitches, 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/WindowsTM 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.

PRESYS®

MANAGEMENT SYSTEM TÜVRheinland Brasil NBR ISO 9001 QUALITY

EF1092-00

PRESYS

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
Display Accuracy:	± 0.1 °C	± 0.1 °C	± 0.1 °C
Resolution:	0.01 °C	0.01 °C	0.01 °C
Stability:	± 0.02 °C	± 0.02 °C	± 0.02 °C
Axial Uniformity (40 mm):	± 0.05 °C full range	± 0.06 °C full range	± 0.07 °C full range
Radial Uniformity:	± 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)
Well Diameter x Depth:	Ø 25 mm x 124 mm	Ø 25 mm x 124 mm	Ø 25 mm x 124 mm
Units / Temperature Scale:	°C or °F / IPTS-68 or ITS-90, user selectable		
Display:	OLED Graphic		
Dimension (HxWxD):	352 x 199 x 310 mm	352 x 199 x 310 mm	352 x 199 x 310 mm
Weight:	10.0 kg	10.0 kg	12.0 kg
Electric Power:	200 W	300 W	400 W
Environmental Operating Conditions:	0 to 50 °C / 0 to 90% UR		

Electrical Input Specifications

Input Ranges		Resolution	Accuracy	Remarks
milivolt	-150 to 150 mV	0.001 mV	± 0.01 % FS*	R_{input} > 10 MΩ
	150 to 2450 mV	0.01 mV	± 0.02 % FS	auto-range
mA	-1 to 24.5 mA	0.0001 mA	± 0.01 % FS	R_{input} < 160 Ω
resistance	0 to 400 Ω	0.01 Ω	± 0.01 % FS	Excitation Current 0.85 mA
	400 to 2500 Ω	0.01 Ω	± 0.03 % FS	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	0.1 °C / 0.1 °F	± 0.5 °C / ± 1.0 °F	IEC-60584
	-150 to 1370 °C / -238 to 2498 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	
TC-T	-260 to -200 °C / -436 to -328 °F	0.1 °C / 0.1 °F	± 0.6 °C / ± 1.2 °F	IEC-60584
	-200 to -75 °C / -328 to -103 °F	0.1 °C / 0.1 °F	± 0.4 °C / ± 0.8 °F	
	-75 to 400 °C / -103 to 752 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	
TC-E	-270 to -150 °C / -454 to -238 °F	0.1 °C / 0.1 °F	± 0.3 °C / ± 0.6 °F	IEC-60584
	-150 to 1000 °C / -238 to 1832 °F	0.1 °C / 0.1 °F	± 0.1 °C / ± 0.2 °F	
TC-N	-260 to -200 °C / -436 to - 328 °F	0.1 °C / 0.1 °F	± 1.0 °C / ± 2.0 °F	IEC-60584
	-200 to -20 °C / -328 to -4 °F	0.1 °C / 0.1 °F	± 0.4 °C / ± 0.8 °F	
	-20 to 1300 °C / -4 to 2372 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	
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.

All specifications are valid for one year.

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 juncion compensation error of ± 0.2 °C or ± 0.4 °F.

Order Code

T-25N / T-35N / T-50N – ☐ – IN ☐☐

Power Supply

1 - 115 Vac

2 - 230 Vac

Included Insert

Choose from those listed below

Accessories

Inserts	Holes	Order Code T-25N / T-35N / T-50N
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 y 2x 1/4"	06.04.0016-00
IN07	1x 6.0 mm, 1x 8.0 mm y 1x 3/8"	06.04.0017-00
IN08	1x 6.0 mm, 1x 3.0 mm y 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 and 1x 1/4"	06.04.0121-00
IN1A	1x 1/8", 1x 3/16", 2x 1/4" and 1x 3/8"	06.04.0122-00
IN1E	1x 4.0 mm, 1x 6.0 mm, 1x 8.0 mm, 1x 10.0 mm and 1x 1/4"	06.04.0123-00
INCL	Cup-like insert (for use with tiny steel balls)	06.04.0086-00

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