PRESYS



Dry Block Calibrators for Large Calibration Volume T-25NL / T-45NL / T-700PL

✓ The T-25NL, T-45NL and T-700PL part of a family of calibrators designed for large calibration volume.
This Calibrator family is ideal to calibrate sensors that require deep immersion.

✓ Model T-25NL and T-45NL are 3 in 1 temperature calibrators: dry block, stirred liquid bath for glass thermometers and any shape of temperature sensors and a Black Body source for infrared pyrometers. The T-700PL comes with a dry block and, optionally, a Black Body source.

✓ Optional temperature measurement and control by external probe with Callendar-Van Dusen coefficients.

✓ The T-700PL generates temperatures from ambient to 700 °C. The T-25NL and T-45NL generate temperatures from –25 °C to 155 °C and –45 °C to 155 °C, respectively, in ambient temperature of 23 °C.

✓ Stability of ± 0.02 °C for the T-25NL and T-45NL and ± 0.05 °C for the T-700PL model.

The T-25NL, T-45NL and T-700PL models control temperature over the bath or insert with high accuracy in order to calibrate thermocouples, thermoresistances, glass thermometers, thermoswitches etc. Besides that, the T-25NL and T-45NL may work as a stirred liquid bath and black body source and the T-700PL may work as a black body source. Besides providing high accuracy temperature values, they also allow the measurement of signals generated by the thermocouples, thermoresistances and thermoswitches, which are being calibrated.
With the optional purchase of a probe to be connected to the external input, the calibrator controls the temperature using as reference a sensor inserted in the same measurement zone of the sensors under calibration increasing the accuracy and decreasing set point errors and loading effects.
They present a wide range of programming resources, allowing them to perform automatic calibration of the sensors, with or without the use of a computer.
With ISOPLAN® it is possible to register sensors and instruments of the factory, generating work orders, creating and printing 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

EF1094-00

Technical Specifications

	T-25NL	T-45NL	T-700PL
Operating Range ambient temperature: 23 °C	-25 °C to 155 °C	-45 °C to 155 °C	from ambient temperature to 700 °C
Display Accuracy:	± 0.1 °C	± 0.1 °C	±(0.1 °C + 0.1% of reading)
Resolution:	0.01 °C	0.01 °C	0.01 °C
Stability:	± 0.02 °C	± 0.02 °C	± 0,05 °C
Axial Uniformity (homogeneity): (40 mm)	0.06 °C (Dry Block) 0.025 °C (Stirred Liquid)	0,08 °C (Dry Block) 0.025 °C (Stirred Liquid)	± 0.10 @ 50 °C ± 0.20 @ 300 °C ± 0.40 @ 660 °C
Radial Uniformity (homogeneity):	0.02 °C (Dry Block) 0.02 °C (Stirred Liquid)	0.025 °C (Dry Block) 0.02 °C (Stirred Liquid)	± 0.05 @ 50 °C ± 0.10 @ 300 °C ± 0.20 @ 660 °C
Heating Time:	25 min (25 °C to 140 °C)	20 min (25 °C to 140 °C)	30 min (50 °C to 660 °C)
Cooling Time:	20 min (25 °C to -25 °C)	40 min (25 °C to -45 °C)	1h15 (660 °C to 200 °C)
Well Diameter x Depth:	Ø 35 mm x 160 mm	Ø 35 mm x 160 mm	Ø 36 mm x 155 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		
Weight:	12.0 kg	12.0 kg	10.0 kg
Electric Power:	300 W	450 W	1000 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	-150 to 1370 °C / -238 to 2498 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	IEC-60584
TC-T	-75 to 400 °C / -103 to 752 °F	0.1 °C / 0.1 °F	± 0.2 °C / ± 0.4 °F	IEC-60584
TC-E	-150 to 1000 °C / -238 to 1832 °F	0.1 °C / 0.1 °F	± 0.1 °C / ± 0.2 °F	IEC-60584
TC-N	-20 to 1300 °C / -4 to 2372 °F	0.1 °C / 0.1 °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.

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-25NL / T-45NL / T-700PL – □ – IN □□ – □□

Power Supply

1 - 115 Vac

2 - 230 Vac

Included Insert

Choose from those listed below. Unless specified, the accompanying insert is IN06.

Optional

BB - Black Body Insert

AG - Stirred Liquid Insert (Only for T-25NL and T-45NL models)

Accessories

Inserts	Holes	Order Code T-25NL / T-45NL	Order Code T-700PL
IN01	1x 3/4"	06.04.0041-00	06.04.0062-00
IN02	1x 1/2"	06.04.0042-00	06.04.0063-00
IN03	1x 6.0 mm and 3x 1/4"	06.04.0043-00	06.04.0064-00
IN04	3x 6.0 mm and 1x 1/4"	06.04.0044-00	06.04.0065-00
IN05	4x 6.0 mm	06.04.0045-00	06.04.0066-00
IN06	2x 6.0 mm y 2x 1/4"	06.04.0046-00	06.04.0067-00
IN07	1x 6.0 mm, 1x 8.0 mm y 1x 3/8"	06.04.0047-00	06.04.0068-00
IN08	1x 6.0 mm, 1x 3.0 mm y 2x 1/4"	06.04.0048-00	06.04.0069-00
IN09	Without hole, to be drilled by the client	06.04.0049-00	06.04.0070-00
IN10	Others, under ordering	06.04.0050-00	06.04.0071-00
IN1P	1x 3.0 mm, 1x 6.0 mm, 1x 8.0 mm and 1x 1/4"	06.04.0125-00	06.04.0159-00
IN1A	1x 1/8", 1x 3/16", 2x 1/4" and 1x 3/8"	06.04.0126-00	06.04.0160-00
IN1E	1x 4.0 mm, 1x 6.0 mm, 1x 8.0 mm, 1x 10.0 mm and 1x 1/4"	06.04.0127-00	06.04.0161-00
INCL	Cup-like insert (for use with tiny steel balls)	—	06.04.0162-00

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

Optional Accessories:
1/5 DIN A-L Probe - Order Code: 04.06.0002-00;
Angular Probe (up to 660 °C) - Order Code: 04.06.0009-00;
Communication Interface - Order Code: 06.02.0002-00.