PRESYS



Dry Blocks Calibrators
(high temperatures) T-350P / T-650P

The T-350P, T-650P Dry Block Calibrators perform functions that would require three different types: a dry block, standard thermometer and a calibrator for RTDs, TCs, mA, mV, ohms and thermoswitches.

- ✓ The T-350P and T-650P models generate from ambient temperature to 350 °C and 650 °C respectively.
- ✓ Stability of ± 0.05 °C for the T-350P and T-650P.
- ✓ Internal regulated 24 Vdc power supply and mA input for 2-wire transmitters.
- ✓ Optional temperature measurement and control by external probe with Callendar-Van Dusen coefficients for the models T-350P and T-650P.
- ✓ Completely automatic calibration with or without the use of a computer.
- ✓ Documenting capabilities: connection with computer and ISOPLAN® calibration software.

The T-350P, T-650P models control temperature over an insert in order to calibrate thermocouples, thermoresistances, glass thermometers, thermoswitches etc. Besides that, the T-1200P model 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. This possible due to an embedded calibrator specific for these types of signals, including 4-20 mA. They incorporate the function of dry block, standard thermometer and calibrator for RTD and TC sensors, besides mA reading.
With the optional purchase of a probe (only for T-350P and T-650P) 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, 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

EF1093-00

Technical Specifications

	T-350P	T-650P
Operating Range ambient temperature: 23 °C	from ambient temperature to 350 °C	from ambient temperature to 650 °C
Display Accuracy:	±(0.1 °C + 0.1% of reading)	±(0.1 °C + 0.1% of reading)
Resolution:	0.01 °C	0.01 °C
Stability:	± 0.05 °C	± 0.05 °C
Axial Uniformity (homogeneity): T-350P / T-650P (40 mm)	± 0.05 @ 50 °C ± 0.10 @ 150 °C	± 0.10 @ 50 °C ± 0.20 @ 300 °C
Radial Uniformity (homogeneity):	± 0.02 @ 50 °C ± 0.03 @ 150 °C ± 0.04 @ 350 °C	± 0.05 @ 50 °C ± 0.10 @ 300 °C ± 0.20 @ 650 °C
Heating Time:	13 min (50 °C to 350 °C)	18 min (50 °C to 650 °C)
Cooling Time:	12 min (350 °C to 100 °C)	22 min (650 °C to 100 °C)
Well Diameter x Depth:	Ø 32 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	
Weight:	7.5 kg	9.5 kg
Electric Power:	500 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	0.01 mV	± 0,01 % FS*	R_{input} > 10 MΩ
	150 to 2450 mV	0.0001 mA	± 0,02 % FS	auto-range
mA	-1 to 24.5 mA	0.01 Ω	± 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 °C / 0.01 °F	± 0,03 % FS	auto-range
Pt-100	-200 to 850 °C / -328 to 1562 °F	0.1 °C / 0.1 °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-B**	250 to 500 °C / 482 to 932 °F	0.1 °C / 0.1 °F	± 1,5 °C / ± 3,0 °F	IEC-60584
	500 to 1200 °C / 932 to 2192 °F	0.1 °C / 0.1 °F	± 1,0 °C / ± 2,0 °F	
TC-R**	300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F	± 0,7 °C / ± 1,4 °F	IEC-60584
TC-S**	-50 to 300 °C / -58 to 572 °F	0.1 °C / 0.1 °F	± 1,0 °C / ± 2,0 °F	IEC-60584
	300 to 1760 °C / 572 to 3200 °F	0.1 °C / 0.1 °F	± 0,7 °C / ± 1,4 °F	
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-350P / T-650P – ☐ – **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

(**) Not on the T-350P and T-650P.

(***) Not on the T-1200P.

Accessories

Inserts	Holes	Order Code T-350P	Order Code T-650P
IN01	1x 3/4"	06.04.0101-00	06.04.0111-00
IN02	1x 1/2"	06.04.0102-00	06.04.0112-00
IN03	1x 6.0 mm and 3x 1/4"	06.04.0103-00	06.04.0113-00
IN04	3x 6.0 mm and 1x 1/4"	06.04.0104-00	06.04.0114-00
IN05	4x 6.0 mm	06.04.0105-00	06.04.0115-00
IN06	2x 6.0 mm y 2x 1/4"	06.04.0106-00	06.04.0116-00
IN07	1x 6.0 mm, 1x 8.0 mm y 1x 3/8"	06.04.0107-00	06.04.0117-00
IN08	1x 6.0 mm, 1x 3.0 mm y 2x 1/4"	06.04.0108-00	06.04.0118-00
IN09	Without hole, to be drilled by the client	06.04.0109-00	06.04.0119-00
IN10	Others, under ordering	06.04.0110-00	06.04.0120-00
IN1P	1x 3.0 mm, 1x 6.0 mm, 1x 8.0 mm and 1x 1/4"	06.04.0128-00	06.04.0131-00
IN1A	1x 1/8", 1x 3/16", 2x 1/4" and 1x 3/8"	06.04.0129-00	06.04.0132-00
IN1E	1x 4.0 mm, 1x 6.0 mm, 1x 8.0 mm, 1x 10.0 mm and 1x 1/4"	06.04.0130-00	06.04.0133-00
INCL	Cup-like insert (for use with tiny steel balls)	06.04.0099-00	06.04.0100-00

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, insulation***, manual and power cord.

Optional Accessories:

1/5 DIN A Probe - Order Code: 04.06.0007-00;

Angular Probe (up to 660 °C) - Order Code: 04.06.0009-00;

Communication Interface - Order Code: 06.02.0002-00.