

# Thermocouple Furnaces

**DENVER**  
metrología electrónica, S.L.

- **Compact, upright model for field work; horizontal model for lab work**
- **Provides temperature to 1200°C (upright model) or 1100°C (horizontal model)**
- **Certificate of traceable calibration included**
- **RS-232 and Interface-*it* software included**

Whether you want to calibrate thermocouples in the field or in your lab, we have an outstanding temperature source for you. Hart's 9150 field thermocouple furnace and 9112A lab thermocouple furnace both come with certificates of traceable calibration, RS-232 interface and Windows control software, and a European CE mark. Both models are also compatible with Hart's MET/TEMP II software for automated calibrations of thermocouples.



## Model 9112A

Need the most accurate thermocouple calibrations possible? The Hart model 9112A thermocouple furnace gives you temperatures to 1100°C and stability from  $\pm 0.05^\circ\text{C}$  to  $\pm 0.1^\circ\text{C}$  - at an excellent price.

With a five-hole standard block and custom blocks available, the 9112A doesn't limit the size and shape of sensors you can calibrate. Further, you get metrology-level stability, and uniformity that is better than  $0.3^\circ\text{C}$  at 1100°C.

The 9112A employs a special heater pattern for temperature uniformity and rapid heat rates, embedded in a refractory ceramic-fiber material. Guide tubes guide your probes to the heart of the furnace for calibration in a completely optimized environment.

## Model 9150

With a temperature range to 1200°C and stability better than  $\pm 0.5^\circ\text{C}$  over its entire range, the 9150 has a display accuracy of  $\pm 5^\circ\text{C}$ . Well-to-well uniformity is better than  $\pm 1^\circ\text{C}$ , so comparison calibrations can be performed with total uncertainties better than  $\pm 2^\circ\text{C}$ .

This furnace doesn't use fixed blocks that limit the size of the thermocouples you test. With four interchangeable blocks to choose from (and custom blocks available), you can check multiple thermocouples from 1.6 to 12.7 mm in diameter.

The 9150 uses Hart's own microprocessor-based controller for great stability. Up to eight common set-points can be stored in memory, and you can easily set ramp rates through the front panel. Heat-up and cool-down speeds have been maximized for improved throughput.

# Dry-Well Specifications

Class	Model	Temp Range (°C)	Display Accuracy (°C)	Stability (±°C)	Block Type	Speed	Size in cm (H x W x D)	Weight (Kg)
Micro-Baths	6102	35 to 200	0.25	0.02 at 100	Silicone oil	23 °C to 200 °C: 40 min.	26 x 14 x 20	4.5
	7102	-5 to 125	0.25	0.015 at -5	Silicone oil	23 °C to 0 °C: 30 min.	31 x 18 x 24	6.8
	7103	-30 to 125	0.25	0.03 at -25	Silicone oil	23 °C to -20 °C: 45 min.	34 x 23 x 26	9.8
Handheld Dry-Wells	9100S	35 to 375	0.5 at 375	0.3 at 375	Fixed with 2-6 holes	23 °C to 375 °C: 9.5 min.	6 x 13 x 15	1.1
	9102S	-10 to 122	0.25	0.05	Two removable inserts	23 °C to 0 °C: 10 min.	10 x 14 x 18	1.8
Field Dry-Wells	9103	-25 to 140	0.25	0.02 at -25	Removable 6-hole insert	23 °C to -25 °C: 20 min.	26 x 14 x 25	5.7
	9140	35 to 350	0.5	0.05 at 350	Removable 6-hole insert	23 °C to 350 °C: 12 min.	9 x 15 x 20	2.7
	9141	50 to 650	1.0 at 650	0.12 at 650	Removable 6-hole insert	23 °C to 650 °C: 12 min.	24 x 11 x 19	3.6
Dual-Block Dry-Wells	9009	-15 to 110, 50 to 350	0.2 (cold block) 0.6 (hot block)	0.05	Two removable inserts, each block	23 °C to -15 °C: 16 min. 23 °C to 350 °C: 10 min.	18 x 27 x 25	4.5
	9011	-30 to 140, 50 to 670	0.25 at -30 0.65 at 600	0.02 at -30 0.06 at 600	One insert and four fixed wells (cold block); one insert (hot block)	23 °C to -30 °C: 20 min. 23 °C to 670 °C: 30 min.	29 x 39 x 27	16.4
Lab Dry-Wells	9105	-25 to 140	0.1	0.01	1 removable insert, 4 fixed wells	23 °C to -25 °C: 15 min.	35 x 20 x 30	11.8
	9107	-45 to 140	0.1	0.005 at 0	1 removable insert, 4 fixed wells	23 °C to -45 °C: 35 min.	35 x 20 x 30	10.0
	9122A	50 to 700	0.3 at 660	0.04 at 660	4 removable inserts, 5 fixed wells	23 °C to 700 °C: 50 min.	35 x 20 x 30	11.3
	9127	50 to 600	0.5 at 600	0.05 at 600	Removable 6-8-hole insert	23 °C to 600 °C: 30 min.	35 x 20 x 30	11.3
Ice-Point Dry-Well	9101	0	0.05	0.005	Fixed with 3 wells	23 °C to 0 °C: 30 min.	31 x 22 x 15	5.4
Field Furnace	9150	150 to 1200	5	0.5	Removable 6-hole insert	23 °C to 1200 °C: 35 min.	32 x 21 x 32	13.0
Lab Furnace	9112A	300 to 1100	Used for comparison	0.1 at 1100	Removable 5-hole block	23 °C to 1100 °C: 5 hours	46 x 34 x 66	33.0
Infra red Calibrators	9132	50 to 500	0.8 at 500	0.3 at 500	57-mm blackbody, $\epsilon = 0.95 (\pm 0.02)$	23 °C to 500 °C: 30 min.	10 x 15 x 18	1.8
	9133	-30 to 150	0.4	0.1	57-mm blackbody, $\epsilon = 0.95 (\pm 0.02)$	23 °C to -20 °C: 15 min.	15 x 29 x 27	4.6



## More Temperature Instruments from Hart

Hart Scientific not only manufactures first class industrial temperature measurement and calibration instrumentation, it manufactures everything needed in measuring and calibrating temperature. Its full product offering includes also everything from fixed point cells and maintenance furnaces, constant temperature baths, SPRTs, precision read-outs and data loggers. Hart is the world's leading manufacturer of temperature and measurement equipment. Hart Scientific's leading temperature calibration products, are available and backed up by technical support, customer service and a full accredited calibration lab through your local specially selected distributor.

For more information on the other products from Hart contact your local Hart distributor for any of the following documents:

- Primary Standards,
- Constant Temperature Baths,
- Thermometry Readouts and Probes,
- Full Catalog



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