FLUID

PORTABLE LIQUID TEMPERATURE CALIBRATOR -35/+250°C

100-45

200

FLUID are portable thermostatic liquid calibrators used for checking thermocouples, platinum resistance and glass thermometers in the laboratory as well as in the field. It consists of an aluminium liquid bath whose capacity is about 400 cc and it is constantly kept homogeneous by a magnetic mixer whose speed is adjustable according to the viscosity of the fluid used.

Low-temperature models with subzero field do not employ external cooling fluids; the equalization block is heated and cooled by a static Peltier cell system.

They are equipped with a new 32-bit PID microprocessor-based controller with resolution up to 0.01 °C, unit setting in °C °F and K, programming of ascendent/descendent ramps and storage of the thermostats operative temperature.

The calibrators are also available in the **2I version**, in which the instruments are equipped an acquisition card having two configurable inputs (Pt1000, Pt100 3/4 wires; thermocouples E, J, K, N, R, S, T, B) with automatic compensation of cold junction.

The REF input is provided for the reference sample probe, thus obtaining a complete calibration system which can be certified by Accredia centres, in compliance with ISO 9000 regulations.

The EXT input is provided for probes that are being tested; hence, the instrument can display the temperature of the well, the temperature of the sensor to be checked and the temperature of the reference sample probe, at the same time.

The calibrators are equipped with RS232 serial interface to operate in automatic mode connected to the PC by means of the Aq2Sp2 software which is capable to automate control procedure and allow to print reports, so they are easily traceable in compliance with ISO 9000 standards.

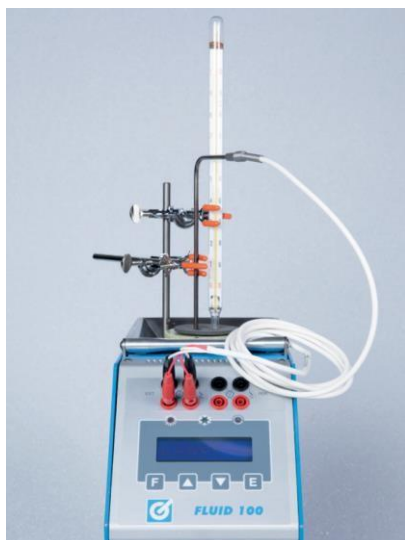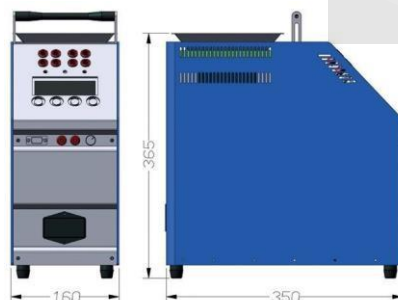**GIUSSANI**

FLUID 100-45 e H100

They do not use external cooling fluids; the internal liquid bath, respectively 45 and 60 mm in diameter with a depth of 170 mm, are heated and cooled by a static Peltier cell system.

Magnetic stirring ensures proper heat transmission and excellent stability and uniformity values; the large size of the bath (60 mm) makes it possible to test sensors of various lengths and diameters.

FLUID 200 e H200

The internal liquid bath is heated with two eletrical resistances and cooled by a fan.

Magnetic stirring ensures proper heat transmission and excellent stability and uniformity values; the large size of the bath (60 mm) makes it possible to test sensors of various lengths and diameters.

Fluids are equipped with adjustable holders to support the probes under test and glass thermometers.
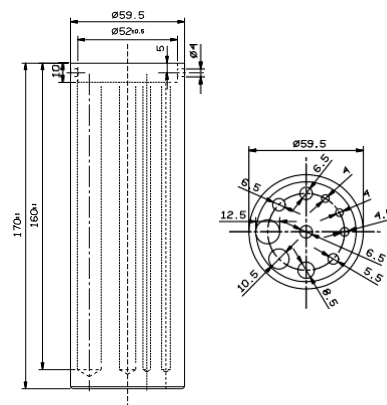
Extention Tube

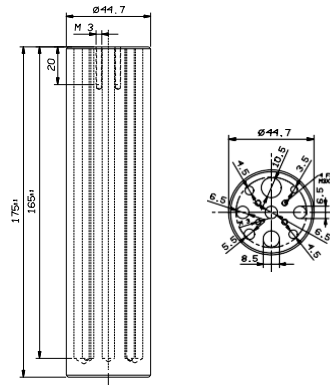The extension tube is suitable for increasing the depth of the liquind tank. Total depth: 230 mm

Inserts

The Fluids can be equipped with Anticorodal inserts with holes on demand to be used as dry calibrators.

Perforated insert for Fluid H100 e 200
Codice: 2D2846

Kit supports for holding the probes under test.

Silicon Oil

Bottles of silicon oils available in addition to the standard equipment.

Codes:

SILICONE200C5   (-40°C/+130°C)

SILICONE47V10   (-30°C/+150°C)

SILICONE47V20   (-20°C/+200°C)

SILICONE47V50   (30°C/+230°C)

SILICONE47V100 (50°C/+250°C)

Plugs and leads for connecting external probes and thermostat test.

Perforated insert for Fluid 100-45
Codice: 2D4566

COMPARATIVE TABLE

Specifications	FLUID 100-45	FLUID H100	FLUID 200	FLUID H200
Temperature range*	-35°C ÷ +120°C	-18°C ÷ +140°C	T_{amb} ÷ +200°C	T_{amb} ÷ +250°C
Dysplay accuracy**	±0.15°C	±0.15°C	±0.15°C	±0.2°C
Units of measure	°C - °F - K	°C - °F - K	°C - °F - K	°C - °F - K
Display resolution	0.1°/0.01°C	0.1°/0.01°C	0.1°/0.01°C	0.1°/0.01°C
Mean heating time (stabilization included)	from T_{amb} to 140°C approx 40 min.	from T_{amb} to 140°C approx 55 min.	from T_{amb} to 140°C approx 25 min.	from T_{amb} to 140°C approx 25 min.
Mean cooling time (stabilization included)	from 140°C to T_{amb} approx 30 min.	from 140°C to T_{amb} approx 50 min.	from 140°C to T_{amb} approx 70 min.	from 140°C to T_{amb} approx 70 min.
Stability ***	±0.02°C @ –0°C	±0.02°C @ –0°C	±0.02°C @ 50°C	±0.02°C @ 50°C
Axial uniformity	±0.05°C	±0.05°C ± 0.03°C	±0.01°C +140°C	±0.01°C +140°C
Radial uniformity (at 40 mm)	±0.02°C @ –0°C	±0.07°C @ 140°C	±0.06°C @ 150°C	±0.06°C @ 150°C
Hole diameter	45 mm	60 mm	60 mm	60 mm
Hole depth	170 mm	170 mm	170 mm	170 mm
Insert material	Anticorodal	Anticorodal	Anticorodal	Anticorodal
Swich test. voltage	On/Off 4.5 V DC	On/Off 4.5 V DC	On/Off 4.5 V DC	On/Off 4.5 V DC
Adjustable ramp function	from 0.1°C/min	from 0.1°C/min	from 0.1°C/min	from 0.1°C/min
PC interface	RS232	RS232	RS232	RS232
Automatic calibration	on 5 points	on 5 points	on 5 points	on 5 points
Operating voltage	230 o 115 VAC	230 o 115 VAC	230 o 115 VAC	230 o 115 VAC
Electric power	350 W	300 W	500 W	500 W
Calibrator size	160x360x350 mm	160x360x350 mm	160x360x350 mm	160x360x350 mm
Calibrator weight with standard equipment	11 Kg	11 kg	8.3 kg	8.3 kg

Diameter sensor 6 mm - the achievement of stabilization is confirmed by a signal÷

*   Values measured at room temperature 20°C
**   Temperature deviation between the display and the reference probe
*** Maximum temperature difference at a stable temperature over 30 minutes

Retractable handle

Cordura® Soft Bag

Code:
2TRMBAG-PYRO
Dimensions: 410x220x380 mm
Weight: 1.45 kg
Packaging dimensions: 600x370x500 mm

Pratical and sturdy Cordura® bag with two side pokets for inserts, a front pocket for documents, shoulder carrying strap, particulary lightweight, it is suitable for carryng and protecting the calibrator with its inserts.

Aluminium rigid case

Code:

2DC505-000
Dimensions: 450x280x380 mm
Weight: 4.8 kg
Packaging dimensions: 600x370x500 mm

Sturdy aluminium case that provides maximum safety for carrying the instrument.

ACCESSORIES

Standard Equipment:

FLUID 100-45 / FLUID H100

- Bottle 500 cc of silicon oil 47V10
- Closure cap for transport
- Fluid emptying system
- Hulder for glass thermometers
- Power supply cable
- Fuses kit
- Thermostat connection cables
- Instruction manual
- Kit of clamp connection (only 2I version)
- Cordura® Soft Bag

FLUID 200 / FLUID H200

- Bottle 500cc of silicon oil 47V20
- Bottle 500 cc of silicon oil 47V10
- Closure cap for trasport
- Fluid emptying system
- Hulder for glass thermometers
- Power supply cable
- Fuses kit
- Thermostat connection cables
- Instruction manual
- Kit of clamp connection (only 2I version)

Silicon oils avaible

Bottle 500 cc of silicon oil 200C5
(-40°/+130°C)
BOTTLE200C5

Bottle 500 cc of silicon oil 47V10
(-30°C/+150°C)
BOTTLE47V10

Bottle 500 cc of silicon oil 47V20
(-20°C/+200°C)
BOTTLE47V20

Bottle 500 cc of silicon oil 47V50
(30°/+230°C)
BOTTLE47V50

Bottle 500 cc of silicon oil47V100
(50°C/ +250°C)
BOTTLE47V100

Accesories on demand:

- Aluminium insert - 2D2846.
- Blind aluminium insert - 2d2678
- Insert with customizable holes
- Extention Tube
- Aq2Sp2 software
- RS232 serial cable
- USB/RS232 converter
- ACCREDIA certificate (only 2I version) performed with sample probe connected to FLUID
- water-cooling coil - 0FLUIDCOOLING (only FLUID200 version)

Extention Tube

The extension tube is used to increase the depth of tanks and consequently the immersion of probes. Total length 230 mm.
Code: PROLUNGAFLUID

Water-coling coil

Water cooling coil to speed up the descent time to room temperature.
Codice: 0FLUIDCOOLING

How to order:

FLUID 100 45

- Standard version
- **00-1** 115V 50/60 Hz
- **00-2** 230V 50/60 Hz

- Version with 2 configurable input
- **2I-1** 115V 50/60 Hz
- **2I-2** 230V 50/60 Hz

FLUID H100

- Standard version
- **00-1** 115V 50/60 Hz
- **00-2** 230V 50/60 Hz

- Version with 2 configurable input
- **2I-1** 115V 50/50 Hz
- **2I-2** 230V 50/60 Hz

FLUID 200

- Standard version
- **00-1** 115V 50/60 Hz
- **00-2** 230V 50/60 Hz

- Version with 2 configurable input
- **2I-1** 115V 50/50 Hz
- **2I-2** 230V 50/60 Hz

FLUID H200

- Standard version
- **00-1** 115V 50/60 Hz
- **00-2** 230V 50/60 Hz

- Version with 2 configurable input
- **2I-1** 115V 50/50 Hz
- **2I-2** 230V 50/60 Hz

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