

REFCLAMP

4688704

EN

INSTRUCTION MANUAL

Digital Temperature Clamp

DE

BEDIENUNGSANLEITUNG

Digitale Temperaturklemme

FR

MODE D'EMPLOI

Pince de température numérique

IT

ISTRUZIONE PER L'USO

Pinza di temperatura digitale

ES

MANUAL DE INSTRUCCIONES

Pinza digital de temperatura



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1. Introduction

Congratulations on your purchase of this device. We are proud of every REFCO product and guarantee you our constant interest in the reliability and function of our products. The REFCO REFCLAMP is equipped with a high-precision and fast-response sensor and gives you the ability to connect with the REFCO REF MESH App and/or with the REFCO REF MATE. The latest manual can be downloaded from www.refco.ch.

2. General Information

Before you start working with the REFCLAMP, please read the operating instructions carefully. They contain important information for the successful operation, maintenance and disposal of the REFCLAMP.

2.1 Conformity

	This device complies with the relevant European directives. The Declaration of Conformity is available from the specified contact details or on the REFCO website.
	This device complies with Part 15 of the FCC Rules. It should be operated under the following conditions: (1) This device may not cause harmful interference, and (2) This device must be able to withstand interference, including interference that may result in errors during operation. FCC ID: XPYNINAB1
	This device complies Industry Canada's license-exempt RSS standards. It should be operated under the following conditions:

	(1) This device may not cause harmful interference, and (2) This device must be able to withstand interference, including interference that may result in errors during operation. IC ID: 8595A-NINAB1
	RCM: Regulatory Compliance Mark This device complies with the requirements of the RCM regulations.
RoHS	RoHS: Restriction of Hazardous Substances This device meets the requirements of the RoHS EU directive. RoHS 2011/65/EU including 2015/863/EU. The device does not contain any prohibited substances above the maximum permissible values.
REACH	In accordance with Article 33 of REACH Regulation 1907/2006, we confirm that this device and its packaging comply with Article 57 of REACH Regulation 1907/2006. This device and its packaging do not contain any of the SVHC specified in the current candidate list (Article 59) at concentrations above 0.1 %.

2.2 Important Safety Instructions



Please read and follow all safety instructions and installation instructions carefully and read it completely before the job.



REFCO products have been specially developed and manufactured for handling by trained refrigeration fitters and refrigeration technicians. Due to the high pressures and the chemical and physical gases used in refrigeration systems, REFCO disclaims all responsibility and liability for accidents, injuries and death. REFCO expressly points out that the products should only be sold to professionally trained specialists.

2.3 Explanation of Symbols



Warning

Indicates a potentially hazardous situation which, if not avoided, may result in serious injury.



Danger

Indicates an electrical hazard. Failure to observe the safety instructions may result in serious or fatal injury.

2.4 Safety Instructions



Do not expose the temperature clamp to rain.



The temperature clamp must not be used in EX zones.



The temperature clamp must not be used for other purposes outside the air conditioning and refrigeration area.



This appliance is not intended for use by persons (including children under 8) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



Suitable protective equipment such as gloves and safety goggles must be worn when working on refrigeration systems.

2.5 Intended Use

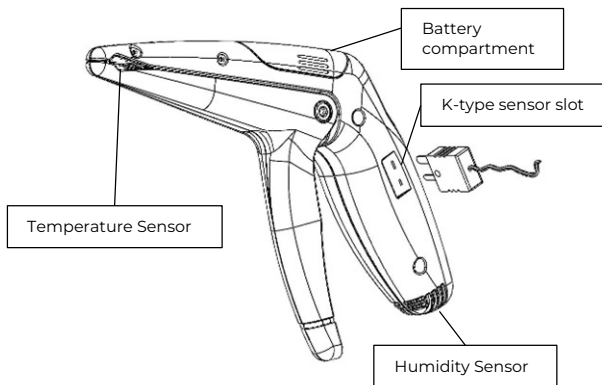
The digital temperature clamp is designed to measure temperature and humidity in mobile and stationary refrigeration systems and heat pumps. This REFCO product may only be used by trained refrigeration technicians. Observe the conditions of use from data sheet.

3. Specification

Property	Value
Temperature range	-40 °C – 150 °C / -40 °F – 300 °F
Temperature accuracy	± 1 °C / ± 1.8 °F
Temperature resolution	0.1 °C / 0.1 °F
Temperature Units	°C / °F
Humidity range	5 – 100 %
Humidity accuracy	± 1.5 %
Humidity resolution	0.1 %
Tube diameter	5 mm – 44 mm / ¼" – 1 ¾"
Power supply	2 × 1.5 V AAA/Mignon/LR3
Battery lifetime	60 h
App	REFMESH
Wireless range	300 m / 1000 ft.
Ambient temperature	-20 °C – 50 °C / -4 °F – 125 °F
Ambient humidity	0 ... 90 %, no condensation
Storage temperature	-40 °C – 60 °C / -40 °F – 140 °F
Storage humidity	0 ... 95 %, no condensation

4. Product and Part Description

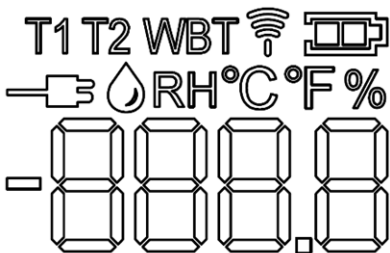
4.1 Product



4.2 Buttons

Buttons	
 On/Off and Backlight Button Press and hold: Device On/Off Press briefly: Backlight On/Off	 Enter and Navigation Button Press and hold: Confirm and Enter menu Press briefly: Navigate through the screens and settings

4.3 Display



T1 T2

ID T1 and T2 for REFMATE:

T1 = low pressure side (blue backlight)

T2 = High pressure side (red backlight)



Sensor values:

Pipe temperature, K-type sensor or humidity sensor

°C °F %

Unit:

Celsius, Fahrenheit or percent (humidity)



Wireless connection:

Flashing: Ready for connection

Constant: Connected

Value:

RH: Relative humidity

WBT: Wet bulb temperature (calculated with the air temperature)

RH WBT



Battery status

5. Transport and Storage

5.1 Transport

The storage conditions must be maintained during transportation.

5.2 Storage

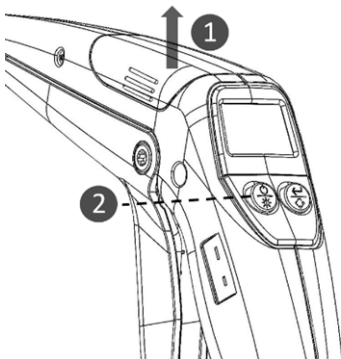
The storage temperatures (Section 3) must be maintained.

6. Commissioning, Functions and Connections

6.1 Commissioning

(1) Insert two batteries into the battery compartment on the top side of the device. Observe the correct polarity of the batteries. If you won't be using the REFCLAMP for a long period of time, remove the batteries from the battery compartment.

(2) Switch on and wait until a temperature value is displayed.

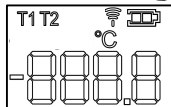


6.2 Functions

Power On/Off

Press to  turn on and off the device.

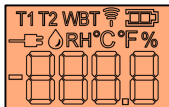
Backlight briefly  press while device is on.



No Backlight

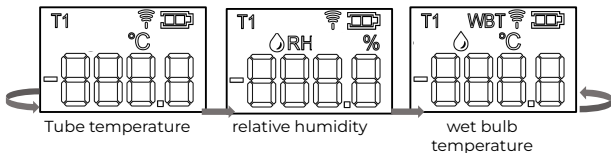


ID T1 (blue)

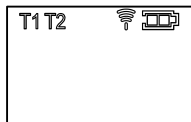


ID T2 (red)

Switch through displays briefly  press while device is on.



ID



Press and hold  to enter the menu.

Press and hold  to enter the ID menu.

Switch through the ID's by briefly pressing .

Press and hold  to confirm the ID.

Units



Press and hold  to enter the menu.

Briefly Press  to switch to unit menu.

Press and hold  to enter the unit menu.

Switch through the units by briefly pressing .

Press and hold  to confirm the unit.

6.3 Connections

With the REFCLAMP it's possible to establish a connection to the REF MESH App or to the REF MATE digital manifold. To connect to REF MESH or to REF MATE the wireless icon must flash, which indicates that the clamp is searching for a connection. As soon as a connection is established, the icon lights up continuously.

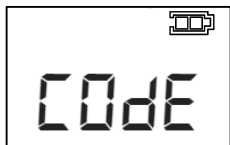
Connection to REF MESH

With the REF MESH app you can easily establish a connection with the REFCLAMP via the usual "connect" window on the REF MESH.

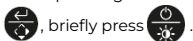
Connection to REF MATE

When the connection icon flashes you can easily search for a device with the REF MATE. If the REFCLAMP is within the range, the device connects automatically. It's only possible to connect to one T1 and one T2 at a time. On the REF MATE you have access to the additional screen by pressing the SWITCH button.

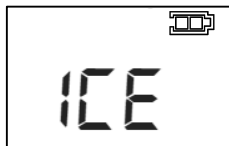
7. Ice Water Calibration



- Device must be switched off!
1. While pressing and holding

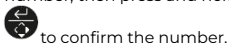


**Code will blink 3x.*



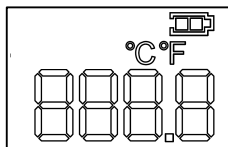
2. Select Code 9 for Ice water Calibration:

Briefly press  to adjust the number, then press and hold



to confirm the number.

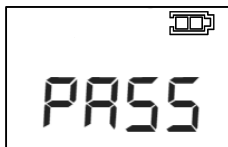
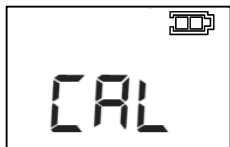
**ICE will blink 3x.*



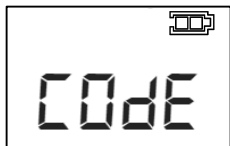
3. Place the tip of the clamp in ice water and confirm by briefly pressing .

Temperature must be between -5 °C and 5 °C (23°F to 41 °F), otherwise the calibration will not be performed.

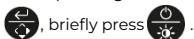
4. If calibration is successful CAL PASS will blink 3x.



7.1 Restoring Factory Calibration



1. While pressing and holding



, briefly press



**Code will blink 3x.*

2. Select Code 10 to restore the factory calibration:

Briefly press  to adjust the number, then press and hold  to confirm the number.

** If the factory calibration is successful FAC CAL will blink 3x.*



8. Guarantee

Your new REFCLAMP has been developed in accordance with the latest findings in occupational physiology and ergonomics. REFCO Manufacturing Ltd has been certified according to DIN EN ISO 9001:2015. Regular quality control checks as well as an accurate manufacturing process guarantee reliable functionality and are the basis for the REFCO guarantee, in accordance with the General Terms and Conditions of Sale and Delivery applicable on the day of delivery. Excluded from the guarantee are damage caused by obvious maltreatment and wear and tear. The REFCLAMP can be sent in at any time for repair or a software update.

9. Return Disposal

The REFCLAMP has been developed for long term use. Attention was paid to energy saving and environmental compatibility during the material procurement and production stages. REFCO embraces its responsibility towards the environment and has therefore been certified in accordance with DIN EN ISO 14001:2015. When decommissioning the device, the user must follow local disposal regulations. The housing is made out of polyamide.



10. Spare Parts and Accessories

For the Spare Parts and Accessories go to the Website of the REFCLAMP at www.refco.ch.