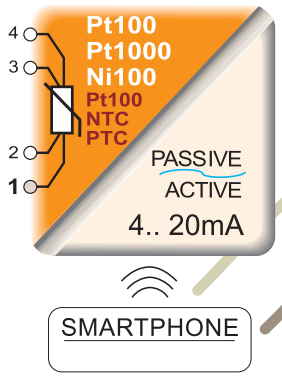
# TERMO-RTD

## TERMO-RTD-n

version NTC 10K, PTC 1K

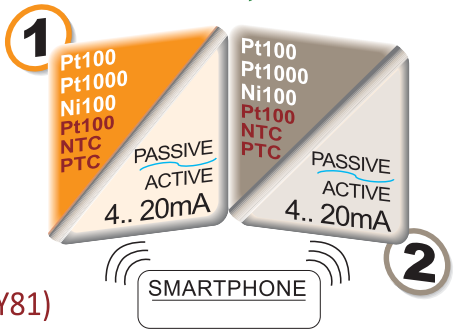
4/20mA transmitter (Active / Passive)
RTD (Pt100, Pt1000, Ni100)
version -n (NTC 10K, PTC 1K, Pt100) (KTY81)




# TERMO-DUO-RTD

## TERMO-DUO-RTD-n

Dual 4/20mA transmitter (Active / Passive)
RTD (Pt100, Pt1000, Ni100)
version -n (NTC 10K, PTC 1K, Pt100) (KTY81)




Rémberg®

**Pt100**
**Pt1000**
**Ni100**

**NTC 10K**
**PTC 1K** (KTY81)
**Pt100**

## PROGRAMADOR-NFC-Plus

Play Store

**2x1**
COST AND SPACE SAVINGS

NFC

**PROTECTED**
Harsh, hostile environments.
Tropicalized with insulating varnish.
Working temperature -40/+85ºC

**HIGH LOAD CAPACITY**
900Ω at 24VDC.
Allows connection of a large number of receivers.

**WIDE POWER SUPPLY RANGE**
6V
6.. 32V. Low consumption.

**HIGH PRECISION**
0,1ºC 16bits
Allows configuration up to tenths of a degree. E.g. 52.7ºC.
2-3-4 probe wires.
(4 wires for high precision).

**WIRELESS PROGRAMMING**
NFC
Quick and easy configuration using a mobile APP.
No connections. No calibrators.

**ACTIVE/PASSIVE OUTPUT**
Automatic depending on connection.


**ERROR CORRECTION**
of the sensor digitally.
Gain calibration x
offset +/-

**DATA LOGGER**
Includes temperature/time recorder.
Review of events, faults, etc.
Wireless download to PC.

# TECHNICAL CHARACTERISTICS RTD

| |
|---|
| Self-powered by loop |
| Supply voltage 6.. 32VDC |
| Protected against polarity reversal |

## POWER

| |
|---|
| Maximum cable resistance 20Ω/per cable |
| Connection technique 2-3-4 wires |
| Linearization BS EN 60751 (IEC751) |

| |
|---|
| Wireless RFID configuration NFC |
| Mobile NFC |

| SENSOR TYPES | Pt100 | Pt1000 | Ni100 | NTC 10K (KTY81) | PTC 1K | Pt100 |
|---|---|---|---|---|---|---|
| Measuring range | -200/+800ºC | -200/+800ºC | -50/+170ºC | -50/+125ºC | -50/+120ºC | -200/+800ºC |
| Resistance range | 18,5/378Ω | 185/3780Ω | 69/223Ω | 318K/530Ω | 300/3460Ω | 18,5/378Ω |
| Connection technique | 2, 3, 4 wires | 2 wires | 2, 3, 4 wires | 2 wires | 2 wires | 2, 3, 4 wires |
| | | CABEZAL-RTD | | | CABEZAL-RTD-n | |

## INPUT

## PRECISSION

| |
|---|
| Maximum transmission error 0.1% F.S. |
| EMI <0,5% |
| Temperature coefficient <100ppm |
| Global maximum error 0,1ºC |

## DESCRIPTION

Transmitter with 4/20mA output for 2-3-4 wire Pt100, Pt1000 and Ni100 sensors (version available for NTC 10K, PTC 1K and Pt100), for temperature measurement in industrial environments, with excellent EMC characteristics.

It allows remote transmission of temperature, with safety and immunity to interference.

The output is linearized with temperature, with a high loop load capacity that allows a wide power supply range from 6V to 32V (protected against polarity reversal). It allows 2-wire (Passive) or 3-wire (Active) connection.

It has an adaptive smart filter, to stabilize the signal.

In the DUO version, 2 independent transmitters are incorporated, saving space and cost.

It allows a very quick and easy configuration through a mobile APP, by means of wireless communication of the module with a smartphone.

It has an internal data-logger that continuously records the temperature for later download to the computer or smartphone, and the data and configuration can be sent by email.

High precision through 16-bit A/D converter (<0.1ºC).

The terminals are colour-coded, preventing incorrect connection of inputs to outputs.

| |
|---|
| Non-condensing humidity 30.. 90% |
| Working temperature -40/+85ºC |
| Storage temperature -50/+105ºC |

## ENVIRONMENTAL DATA

| |
|---|
| EMC 2014/30/EU (electromagnetic compatibility) |
| DBT 2014/35/EU (low voltage directive) for industrial environments. |
| CE Interference immunity according to EN 61000-6-2. |
| Emission of interference according to EN 61000-6-3. |
| Installation category II. |
| Pollution degree 2 EN 61010-1. |

RoHS Compliant

## REGULATIONS

| |
|---|
| Programmable sample time 1.. 3,600 sec |
| 4K capacity (4,000 values). Non-volatile memory. |
| Circular buffer. Old values ??are overwritten. |
| Wireless download of the record to PC or mobile. |
| Display/print, with zoom and guide lines, of the temperature/time graph. |

incorporated

## DATA LOGGER

| |
|---|
| Linear with temperature 4/20mA Passive |
| or inverse 20/4mA Passive |
| Output resolution in mA 1µA |
| Nominal load 900Ω@24VDC ≃ 20mA |
| 1200Ω@30VDC ≃ 20mA |
| Sensor break detection OVERRANGE 21.5mA |
| UNDERRANGE 3.8mA |
| Sensor error correction (gain and zero) digital |
| Correction factor resolution 0.1ºC |
| Sampling time 300msec |
| Response time 10.. 90% 600msec |
| Rejection frequency 50-60Hz |
| Intelligent filter Adaptive |

## OUTPUT

# APP CONFIGURATION AND REGISTRATION

PROGRAMADOR-NFC-Plus

Play Store

APP GRATUITA

Requirement NFC

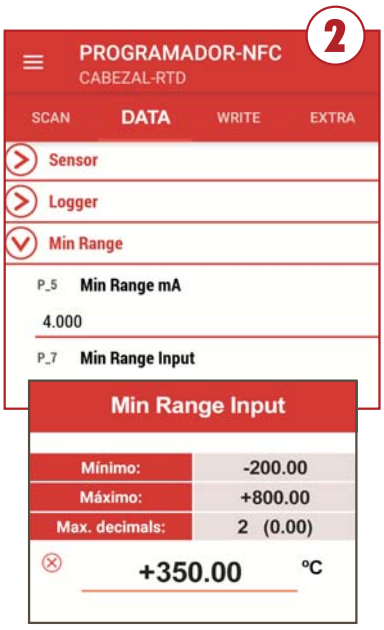
* Connect the NFC on your mobile.

* Locate the NFC emitting point on your mobile (normally in the center on the back) and match it with the converter.

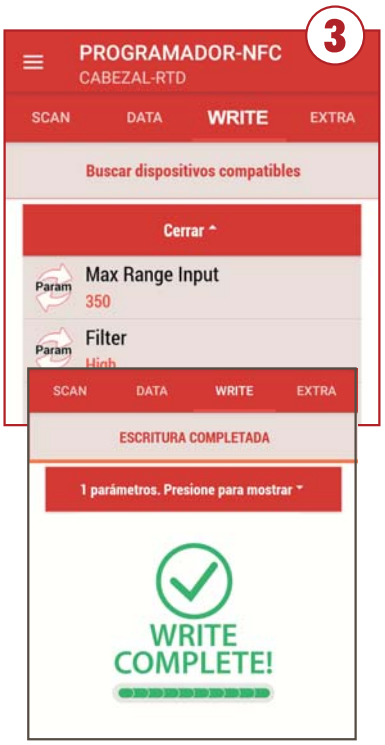
* The app will automatically detect the model, without the need to power the device.

The application's home screen features a bar with 4 tabs:
SCAN, DATA, WRITE y EXTRA.


The SCAN tab allows you to read data already recorded on the device. By placing the device in contact with the mobile phone, it will automatically recognize the model.
The app emits a notification sound as soon as it detects the device and its parameters.

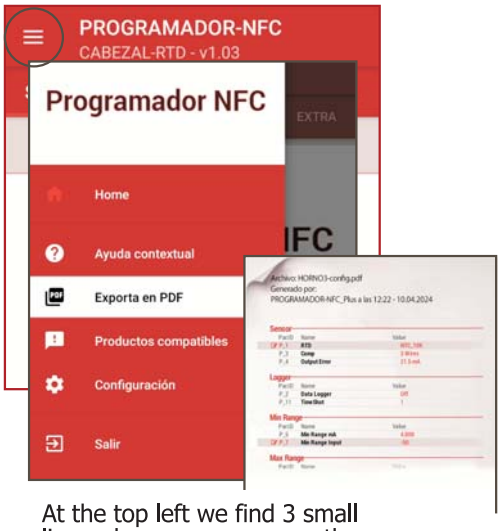



It automatically goes to the DATA tab, where we will see the parameters and can modify them by accessing the drop-down menus (without needing to have the mobile phone near the device).




To load the new configuration onto the device, you must access the WRITE tab where you will see the parameters that you have modified. This is where you will again place the mobile phone in contact with the device and wait for the notification that the operation has been completed.


In the EXTRA tab we can access additional features such as saving or loading a configuration to the mobile, sending it by email or sharing it via WhatsApp. We also have the option of restoring the device to its factory settings.

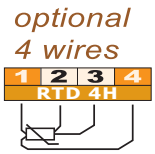


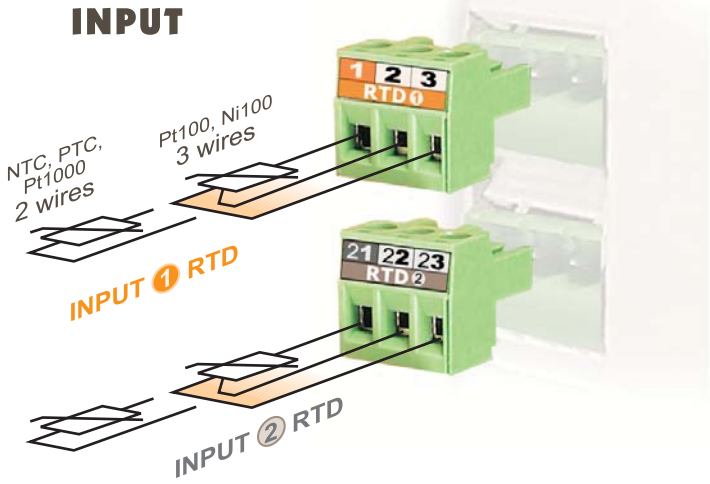

At the top left we find 3 small lines where we can access the app configuration, see the devices compatible with it, access help, exit and something very interesting: generate a PDF file with the device configuration values.

# CONNECTION

RTD
2-3 wires

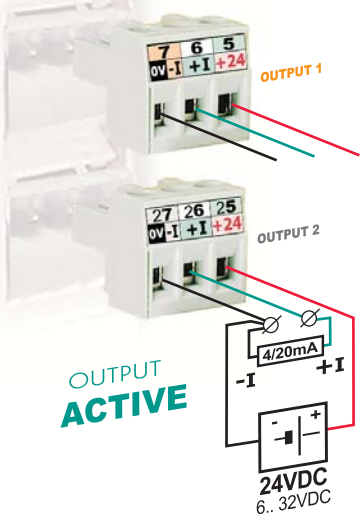
## INPUT



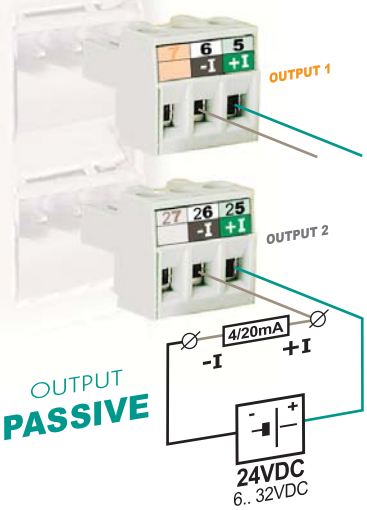



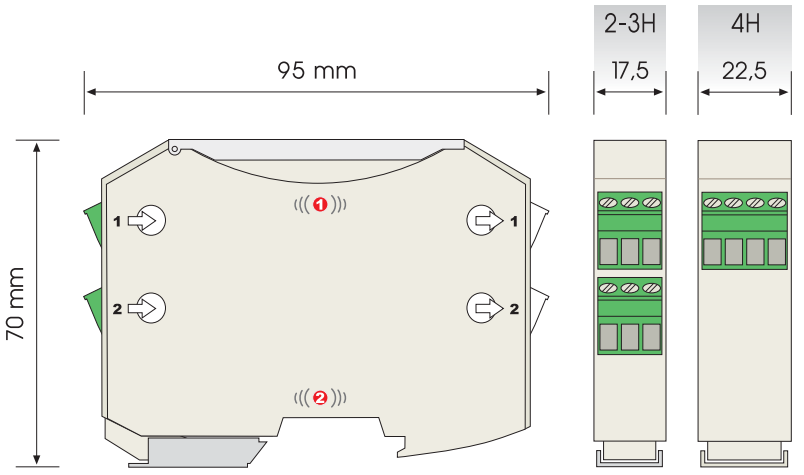

## OUTPUT

The wide loop supply voltage range (6V.. 32V) allows, from low power supplies (e.g. 12V batteries) to high voltages (maximum 32V), to obtain large load capacities, by placing several receivers in series.




PASSIVE / ACTIVE
Automatic
depending on
connection
terminals




## FORMAT

| |
|---|
| IP20 protection |
| Flammability class Vo according to UL94 |
| Ergonomic housing. Quick mounting on EN50022 rail |
| Material Polyamide PA6.6 |
| Connection: screw-on terminals |
| Screw tightening torque (M3) 0.5 Nm |
| Differentiated by white / green colour |
| Connection cable: ⩽2.5mm$^2$, 12AWG 250V/12A |
| Weight 85grs |