USER INSTRUCTIONS

Programmable 2-wire Transmitter for Thermocouple

APAQ R130TC

5 YEAR WARRANTY

NFC

The user instruction must be read prior to adjustment and/or installation.
All information subject to change without notice.

MEASURE OF SUCCESS

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This product should not be mixed with other kind of scrap, after usage.
It should be handled as an electronic/electric device.

MEASURE OF SUCCESS

GENERAL INFORMATION

APAQ R130TC is a low cost, non-isolated, easy-to-use 2-wire transmitter, for thermocouple input, intended to be used in industrial environment.

The transmitter is configured from a mobile device via NFC communication, by using the app INOR Connect. Inor Connect is available for free download on App Store, Google Play Store and Huawei AppGallery.

DATA (short form)

Input	2-wire connection
TC type B - Pt30Rh-Pt6Rh (IEC 60584)	0...+1820 °C / +32...+3308 °F
TC type E - NiCr-CuNi (IEC 60584)	-270…+1000 °C / -454...+1832 °F
TC type J - Fe-CuNi (IEC 60584)	-210…+1200 °C / -346...+2192 °F
TC type K - NiCr-NiAl (IEC 60584)	-270…+1300 °C / -454...+2372 °F
TC type N - NiCrSi-NiSi (IEC 60584)	-270…+1300 °C / -454...+2372 °F
TC type R - Pt13Rh-Pt (IEC 60584)	-50...+1750 °C / -58...+3182 °F
TC type S - Pt10Rh-Pt (IEC 60584)	-50…+1750 °C / -58...+3182 °F
TC type T - Cu-CuNi (IEC 60584)	-270…+400 °C / -454...+752 °F
Input impedance	10 MΩ
Maximum wire loop resistance	Field transmitter (including TC sensor): 10 kΩ
Cold Junction Compensation	Internal or fixed
Output	4-20 mA, temperature linear
Sensor failure indication	Upscale (≥21.0 mA) or downscale (≤3.6 mA)
NAMUR Compliance	Current limitations and failure currents acc. to NAMUR NE 43
Adjustable filtering level	0.4 to 26 sec.
Warm-up time	After a max. 20 minutes the accuracy specifications are reached (due to the internal cold junction)
Ambient temperature	
Storage and operation	-40 to +85 °C / -40 to +185 °F
Galvanic isolation	None
Power supply	6 to 32 VDC
Accuracy	
TC type B	See Data Sheet
TC type R, S, T	Max. of ±2.0 °C or ±0.2% of span
	Max. of ±3.6 °F or ±0.2% of span
TC type E, J, K	Max. of ±1 °C or ±0.2% of span
	Max. of ±1.8 °F or ±0.2% of span
TC type N (-100...+1300 °C)	Max. of ±1 °C or ±0.2% of span
	Max. of ±1.8 °F or ±0.2% of span
TC type N (-270...-100 °C)	±2.0 °C / ±3.6 °F
CJC accuracy	Typical ±1 °C / ±1.8 °F (max ±3 °C / ±5.4 °F) within ambient temperature range
Mounting	DIN-rail according to DIN 50022 / EN 60715, 35 mm / 1.38 in
Configuration	App INOR Connect via NFC™
RoHS, China RoHS	Directive: 2011/65/EU and 2015/863/EU Harmonized standard: EN IEC 63000 China RoHS 2
Factory settings	Type K
Input	0 to 1000 °C
Output	4 to 20 mA
Sensor error indication	Upscale

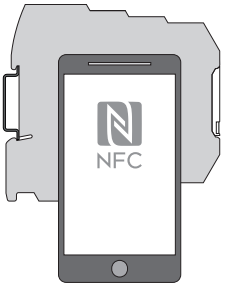
CONFIGURATION

Before making a configuration of APAQ R130TC you need to do following: Make sure that you have a mobile device with NFC communication activated. Download the app INOR Connect to your mobile device.

Required versions:

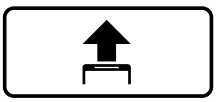
iOS
iOS 13 or later and Iphone 7 or later for NFC

Android
Android 4.4 or later



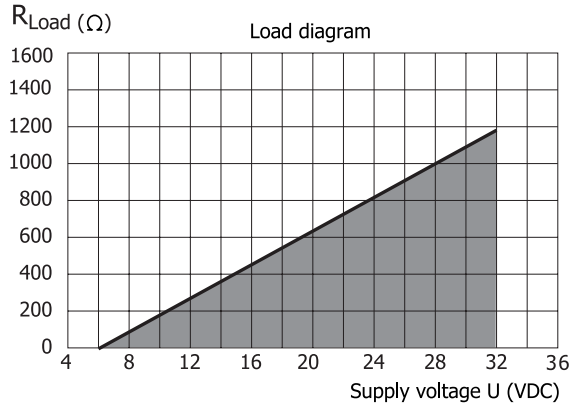
Configuration procedure:

1. Launch the app by clicking on the App icon or holding your mobile device against the transmitter on the part of the device where NFC™ is located (only possible with Android).
2. Click on "Read Configuration" and hold your mobile device against the transmitter as explained in the first section.
3. In the app you can edit the following:
   a. Sensor type
   b. Measuring range
   c. Upscale or downscale sensor error indication
   d. Filter level
   e. TAG-number
   f. Password



4. Once you have set the desired values in the app, you transfer it to the transmitter by clicking the transfer button and holding the mobile device against the transmitter until a green check box appears confirming that the transfer has been completed.

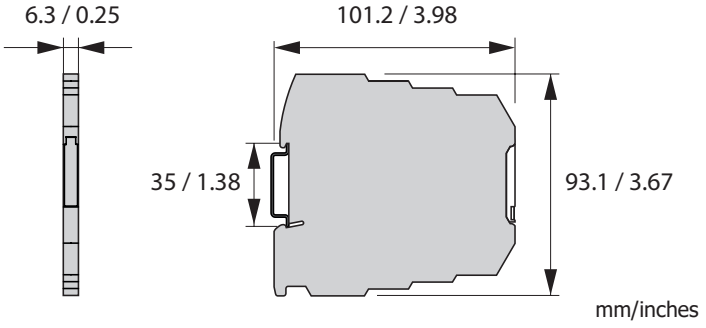
OUTPUT LOAD DIAGRAM



Maximum load depending on power supply
Formula for the max. permissible output load for APAQ R130^{TC}:

R_{Load} =(U-6)/0.022

DIMENSIONS



LIMITED WARRANTY

INOR Process AB, or any other affiliated company within the Inor Group (hereinafter jointly referred to as "Inor"), hereby warrants that the Product will be free from defects in materials or workmanship for a period of five (5) years from the date of delivery ("Limited Warranty"). This Limited Warranty is limited to repair or replacement at Inor's option and is effective only for the first end-user of the Product. Upon receipt of a warranty claim, Inor shall respond within a reasonable time period as to its decision concerning:

1 Whether Inor acknowledges its responsibility for any asserted defect in materials or workmanship; and, if so,
2 the appropriate cause of action to be taken (i.e. whether a defective product should be replaced or repaired by Inor).

This Limited Warranty applies only if the Product:

1 is installed according to the instructions furnished by Inor;
2 is connected to a proper power supply;
3 is not misused or abused; and
4 there is no evidence of tampering, mishandling, neglect, accidental damage, modification or repair without the approval of Inor or damage done to the Product by anyone other than Inor.

This Limited Warranty is provided by Inor and contains the only express warranty provided.

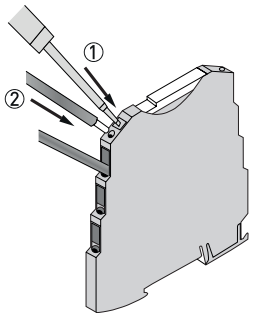
INOR SPECIFICALLY DISCLAIMS ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTEE OR REPRESENTATION AS TO SUITABILITY FOR ANY PARTICULAR PURPOSE, PERFORMANCE, QUALITY AND ABSENCE OF ANY HIDDEN DEFECTS, AND ANY REMEDY FOR BREACH OF CONTRACT, WHICH BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING IMPLIED WARRANTIES OF MER-CHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. EXCEPT AS PROVIDED HEREIN, INOR FURTHER DISCLAIMS ANY RESPONSIBILITY FOR LOSSES, EXPENSES, INCONVENIENCES, SPECIAL, DIRECT, SECONDARY OR CONSEQUENTIAL DAMAGES ARISING FROM OWNERSHIP OR USE OF THE PRODUCT.

Products that are covered by the Limited Warranty will either be repaired or replaced at the option of Inor. Customer pays freight to Inor, and Inor will pay the return freight by post or other "normal" way of transport. If any other type of return freight is requested, customer pays the whole return cost.

INSTALLATION

APAQ R130^{TC} is designed to be mounted on a 35 mm DIN Rail according to EN 60715 / DIN 50022.

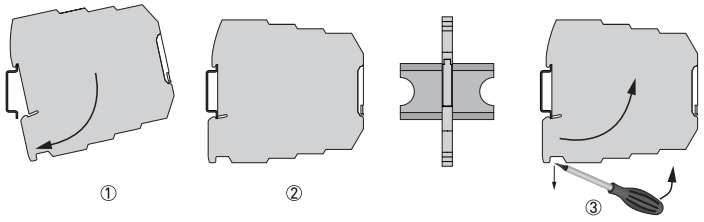
⚠ Connect input, output and power supply acc. to "CONNECTIONS". The cable is connected using spring-cage connection. In order to minimize measuring errors ensure that the cable is securely fastened.



Use a 2.5 x 0.4 mm slotted screwdriver

1. Insert a screwdriver into the opening above the connection terminal block.
2. Insert the wire into the corresponing connection terminal block.

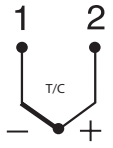
MOUNTING



Mounting and removal of the transmitter

1. Fix the upper part of the transmitter onto the rail.
2. Press the lower part of the transmitter against the rail.
3. To remove the transmitter, use a screwdriver and bend the locking under the transmitter downwards.

CONNECTIONS



TC Connection

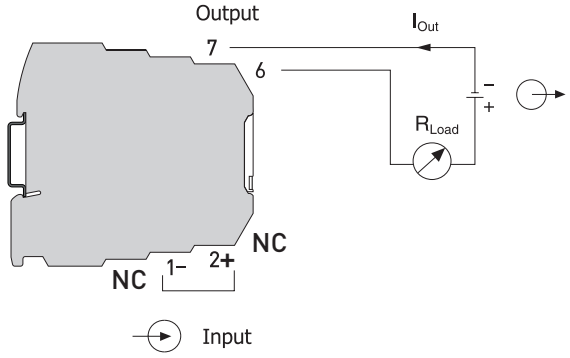


Figure 4-4: Connection diagram for TC

ORDERING INFORMATION

APAQ R130^{TC}	70R1300211

The transmitters are delivered with either a default factory setting or configured according to customer's specification.