

INOR

USER INSTRUCTIONS **MINIPAQ® C230** Universal, non-isolated, 2-wire head mounted temperature transmitter



This user instruction together with the user instruction for the transmitter must be read prior to adjustment and/or installation.
 All information subject to change without notice.

MEASURE OF SUCCESS

INTRODUCTION

MiniPAQ C230 is a universal, non-isolated, 2-wire In-head temperature transmitter intended to be used in industrial environments.
 The transmitter accepts inputs from resistance thermometers (RTDs) like e.g. Pt100, Pt1000 and 10 types of standardized thermocouples, with additional voltage and resistance inputs.
 MiniPAQ C230 is intended for installation in a connection head Form B according to DIN EN 50446.
 The Transmitter is either wirelessly configured from a smartphone via built-in NFC or a Bluetooth modem, or from a Windows PC via a USB-Interface.

GENERAL INFORMATION

MiniPAQ C230 is mainly used to convert signals from a temperature sensor to a standard analog 4-20 mA signal.
 The transmitter's input side is connected to some sort of temperature sensor and the output side is connected in a 2-wire loop (totally two leads are used in common for power supply and output signal) to generate 4-20 mA.

BEFORE START UP



CAUTION!
 Observe without fail the local occupational health and safety regulations. Installation, assembly, start-up and maintenance may only be performed by appropriately trained personnel.



DANGER!
 All work on the electrical connections may only be carried out with the power disconnected. Take note of the voltage data in the technical data specification. Observe the national regulations for electrical installations.



DANGER!
 This instrument complies with requirements of Low Voltage Directive. Instruments must not be connected to power supply before reading instructions described in the manual.



DANGER!
 This device cannot be used in Hazardous Locations or Explosive Gas Atmospheres!

DATA (short form)

Input RTD	2-, 3-, 4-wire connection
Pt100 (IEC 60751, α=0.00385)	-200 to +850 °C / -328 to +1562 °F
Pt X (10 x X ≤ 1000), (IEC 60751, α=0.00385)	-200 to +850 °C / -328 to +1562 °F
Ni100 (DIN 43760)	-40 to +250 °C / -76 to +482 °F
Ni120 (Edison Curve No. 7)	-40 to +250 °C / -76 to +482 °F
Ni1000 (DIN 43760)	-50 to +180 °C / -58 to +356 °F
Input Thermocouple	Type B, C, D, E, J, K, N, R, S, T
Additional inputs	Plain resistance (0 to 4 kΩ), Plain mV (-10 to +1000 mV)
Output	4-20 mA, in 2-wire connection
Operating temperature	-40 to +85 °C / -40 to +185 °F
Galvanic isolation	None
Power supply	8.0 to 36.0 VDC
Typical accuracy (RTD)	Max. of ±0.15 K or ±0.15 % of span
EMC standards	EN 61326-1 and EN 61326-2-3
RoHS Directive	2011/65/EU + (EU) 2019/683
EU Declaration of Conformity	In accordance with EN ISO/IEC 17050-1
Connection	Single/stranded wires Max. 1.5 mm², AWG 16
Screw terminals	Combined Slotted/Phillips
Screw terminal torque	0.5 Nm (max.)
Mounting	Head form B acc. to DIN EN 50446, or larger
Factory default settings	
Input	Pt100 3W, 0 to 100 °C
Output	4 to 20 mA
Sensor error indication	Upscale

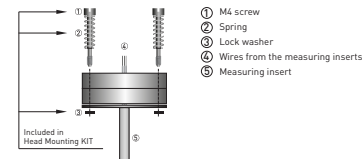


INFORMATION!
 For more data, consult the technical data sheet for MiniPAQ C230

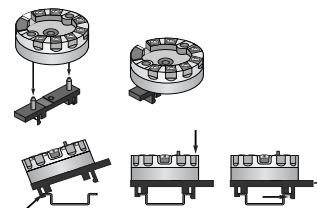
INSTALLATION

The transmitter is intended for installation in a connection head Form B according to DIN EN 50446.
 Additional the transmitter can be installed on a DIN-Rail 35 mm according to EN 60715 with an adapter.

Installation on a measuring insert with INOR Head Mounting KIT



Installation on a DIN-Rail 35 mm with INOR DIN-Rail Adapter



ELECTRICAL CONNECTIONS, INPUT

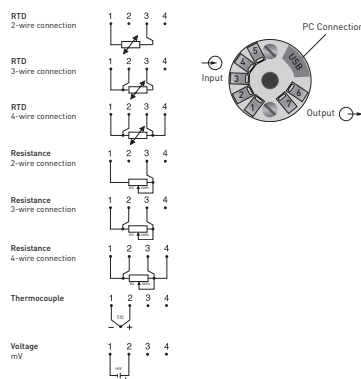
The Input signal must be connected in accordance with the following data and illustrations:



DANGER!
 All work on the electrical connections may only be carried out with the power disconnected. Observe the national regulations for electrical installations.

Connection:	Single / stranded wires ≤1.5 mm², AWG 16
Terminal screws max. tightening torque:	0.5 Nm
Screw terminals	Combined Slotted/Phillips

Input



ELECTRICAL CONNECTIONS, OUTPUT

The Output signal / Power Supply must be connected in accordance with the following data and illustrations:

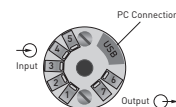
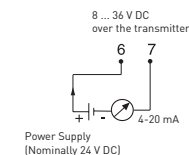


DANGER!
 All work on the electrical connections may only be carried out with the power disconnected. Take note of the voltage data in the technical data specification. Observe the national regulations for electrical installations.

Connection:	Single / stranded wires ≤1.5 mm², AWG 16
Terminal screws max. tightening torque:	0.5 Nm
Screw terminals	Combined Slotted/Phillips

Output

Power Supply / 4 ... 20 mA loop



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MEASURE OF SUCCESS

CONFIGURATION

Configuration of the transmitter is possible in three different ways.

Via NFC

Equipments:
- Smartphone with NFC function
- Smartphone-App INOR Connect

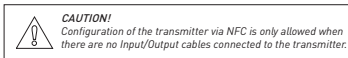
Via Bluetooth

Equipments:
- Smartphone with Bluetooth function
- Smartphone-App INOR Connect
- INOR Bluetooth Configuration Kit, ICON-BT

Via PC

Equipments:
- PC with Windows OS
- PC Software INOR ConSoft
- INOR USB Configuration Kit, ICON-X

CONFIGURATION via NFC



Preparations

1. Download the app INOR Connect to your mobile device, it is available for both Android and iOS and is free to download and use.
2. Make sure NFC communication is activated on your mobile device.



Scan the QR code to download and install the app INOR Connect

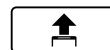
Configuration procedure

1. Launch the app by clicking on the INOR Connect App icon, or by holding your mobile device's NFC area close to the transmitter's NFC-antenna for auto launch (auto launch is only possible with Android).
2. Click on "Read Configuration" and hold your mobile device against the transmitter's NFC-area for reading the transmitter settings.
3. In the app you can edit and configure all the transmitter settings, such as type of input sensor, measuring range, upscale or downscale error indication, etc.

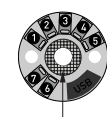


Read Configuration

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



Data transfer completed ok



Location of the transmitter's internal NFC-antenna.



NOTE!
Communication via NFC is only possible from this side of the transmitter. The Smartphone's NFC antenna may be located in different places depending on the brand and model you have.

Please consult the specific NFC Quick Start Guide for more guidance if needed.

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 MERCHANTABILITY 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.

CONFIGURATION via Windows PC

MiniPAQ C230 can be configured from a Windows PC with the PC software ConSoft, the transmitter is connected to the PC via INOR USB communication interface, ICON-X. The USB-interface and all necessary cables are included in the Transmitter Configuration Kit, ICON-X.



INFORMATION!
Consult the specific manual for ICON-X for a detailed description about installation and usage.

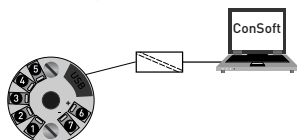
Here is a short form guide:

Preparations

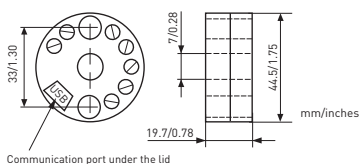
1. Install software ConSoft on your PC, ConSoft can be downloaded for free from our website's download section.

Configuration procedure

1. Connect the MiniPAQ C230 to the PC via the USB interface with the included USB-cables. Configuration can be performed with or without connected power supply to the transmitter.
2. Start ConSoft and click on the "Read Configuration" button. The software will recognize the connected transmitter and open the C / R230 configuration window with the transmitter's current settings after uploading.
3. Edit the transmitter settings to your requirements.
4. The configuration is downloaded to the transmitter by clicking the button "Write to transmitter".

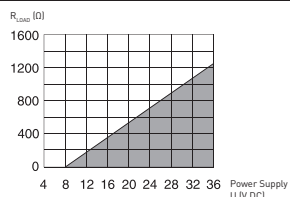


DIMENSIONS



Communication port under the lid

OUTPUT LOAD DIAGRAM



Maximum load is depending on power supply.
Formula for the max. permissible output load is: $R_{Lmax} [Ω] = (U-8)/0.022$

CONFIGURATION via Bluetooth

Configuration via Bluetooth requires the Bluetooth-modem ICON-BT to be connected to the transmitter's USB-port. Modem and cables are included in the configuration kit ICON-BT.

Consult the ICON-BT Quick Start guide for description about installation and usage.

Here is a short form guide:

1. Insert two AAA batteries into the ICON-BT interface.

2. Install the Smartphone-app INOR Connect.

3. Set Bluetooth communication to ON in your smartphone.

4. Connect the ICON-BT Bluetooth modem to the transmitter using the supplied cable, see image below.

5. Start INOR Connect on your device.

6. When selecting Read Configuration or Monitoring, the app will scan for available Bluetooth devices and show them in a list. Click on the device you want to connect to. The name of your ICON-BT modem is the same as its serial number, which can be found on the product label on the ICON-BT modem.



ORDERING INFORMATION

Transmitter	
MiniPAQ C230	70C2300011
Configuration tools	
ICON-X, PC Configuration kit	70CFGUSX01
ICON-BT, Bluetooth® configuration kit	70CFGBT001
PC Software ConSoft	www.inor.com
Smartphone-app INOR Connect	Google Play App Store Huawei AppGallery
Accessories	
Head mounting kit	70ADAD0017
Rail mounting Adapter	70ADAD0015
Surface mounting box	70ADAD0008
Rail mounting box	70ADAD0009

DISPOSAL



LEGAL NOTICE!
Disposal must be carried out in accordance with legislation applicable in your country.

Separate collection of WEEE (Waste Electrical and Electronic Equipment):



According to the directive 2012/19/EU or UK Regulation 2013 No. 3113, the monitoring and control instruments marked with the WEEE symbol and reaching their end-of-life must not be disposed of with other waste.
The user must dispose of the WEEE to a designated collection point for the recycling of WEEE or send them back to our local organisation or authorised representative.