

**INOR****USER INSTRUCTIONS****MINPAQ® C230**Universal, non-isolated, 2-wire  
head mounted temperature transmitter**NFC** **CE** **5 years**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****INOR**

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**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. Pt10...Pt100 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 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!

**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  $\leq 1.5 \text{ mm}^2$ , AWG 16  
Terminal screws max. tightening torque: 0.5 Nm  
Screw terminals Combined Slotted/Philips

**DATA (short form)**

Input RTD	2-, 3-, 4-wire connection
Pt100 (IEC 60751, $\alpha=0.00385$ )	-200 to +899 °C / -328 to +1562 °F
Pt10 (IEC 60751, $\alpha=0.00385$ )	-200 to +899 °C / -328 to +1562 °F
Ni100 (IEC 43760)	-40 to +850 °C / -40 to +1662 °F
Ni1000 (IEC 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 $\leq 4 \text{ k}\Omega$ , 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 $\pm 0.15 \text{ K}$ or $\pm 0.15 \%$ of span
EMC standards	EN 61326-1 and EN 61326-2-3
RoHS Directive	2011/65/EU + (EU) 2015/843
EU Declaration of Conformity	In accordance with EN ISO/IEC 17050-1
Connection	Single/stranded wires Max. 1.5 mm $^2$ , AWG 16 Combined Slotted/Philips
Mounting terminals	-40 to +85 °C / -40 to +185 °F
Mounting 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

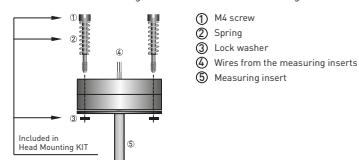
**INFORMATION!**

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



Included in Head Mounting KIT

① M4 screw

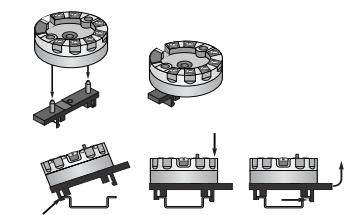
② Spring

③ Lock washer

④ Wires from the measuring insert

⑤ Measuring insert

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

**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 specification. Observe the national regulations for electrical installations.

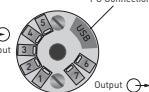
Connection: Single / stranded wires  $\leq 1.5 \text{ mm}^2$ , AWG 16  
Terminal screws max. tightening torque: 0.5 Nm  
Screw terminals Combined Slotted/Philips

**Output**

Power Supply / 4 ... 20 mA loop

8 ... 36 V DC over the transmitter

Power Supply (Nominally 24 V DC)



## CONFIGURATION

Configuration of the transmitter is possible in three different ways.

### Via NFC

- Smartphone with NFC function
- Smartphone-App INOR Connect

### Via Bluetooth

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

### Via PC

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

## CONFIGURATION via NFC

**CAUTION!**  
Configuration of the transmitter via NFC is only allowed when there are no Input/Output cables connected to the transmitter.

### 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.



INOR Connect



Read Configuration

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



Transfer button completed ok



Location of the transmitter's internal NFC-antenna.



Place the phone's NFC antenna close to the transmitter's 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.

## 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	70AD400017	
Wall mounting Adapter	70AD400015	
Surface mounting box	70AD400008	
Rail mounting box	70AD400007	

## 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.

## CONFIGURATION via Windows PC

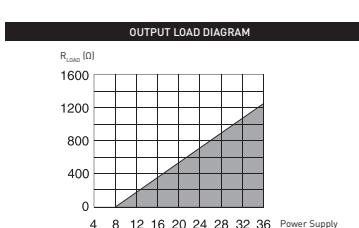
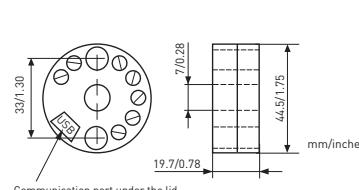
MiniPAQ C230 can be configured from a Windows PC with the PC software ConSoft, the transmitter is connected to the PC via INOR USB communication interface, ICON-X. The USB-Interface and all necessary cables are included in the Transmitter Configuration Kit, ICON-X

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

Here is a short form guide:

1. Install Software ConSoft on your PC, ConSoft can be downloaded for free from our website's download section.
2. Connect the MiniPAQ C230 to the PC via the USB interface with the included USB-cables. Configuration will be performed with or without connector power supply to the transmitter.
3. 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.
4. Edit the transmitter settings to your requirements.
5. The configuration is downloaded to the transmitter by clicking the button "Write to transmitter".

## DIMENSIONS



Maximum load is depending on power supply.  
Formula for the max. permissible output load is:  $R_{LOAD} [\Omega] = [U-8]/0.022$

