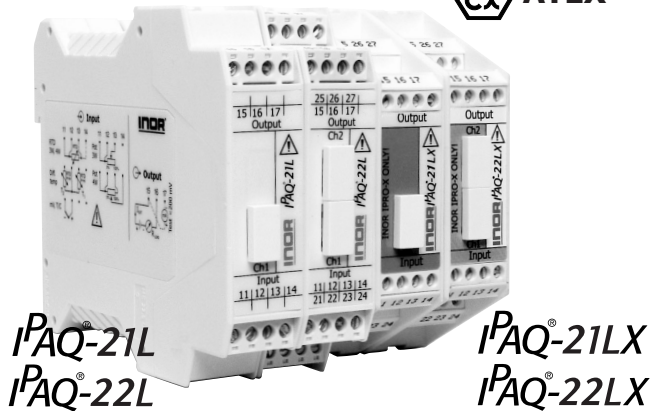


USER INSTRUCTIONS

Universal 1- & 2-channel Programmable 2-wire Transmitter



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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Phone: +49-203 7382 762 0, Fax: +49-203 7382 762 2, E-mail: info@inor-gmbh.de

KROHNE Temperature Division INOR, 7 Dearborn Road,
Peabody, MA 01960, USA,
Phone: +1 978 826 6900, Fax: +1 978 535 3882, E-mail: inor-info@krohne.com

www.inor.com, www.inor.se



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

INTRODUCTION

IPAQ-22LX is an Intrinsic Safe, 2-channel universal and intelligent 2-wire rail-mounted transmitter for temperature and other low-level measurement Ex-applications. IPAQ-21LX = 1 channel. IPAQ-21L/-22L are the non-Intrinsic Safe versions for use in safe areas.

GENERAL INFORMATION

The transmitter is configured from a standard IBM compatible PC by using the IPRO software version 4.31 or later. The latest version of IPRO can be downloaded from <http://www.inor.com>. When the transmitter is set from a PC no calibration is needed.

When calibrating/configuring the IPAQ-21LX/-22LX ATEX certified version of IPRO-X cable must be used.

Please observe that the 2 channels have separate configuration outlets so put the IPRO-X plug in outlet 1 or 2 depending on which channel to configure.

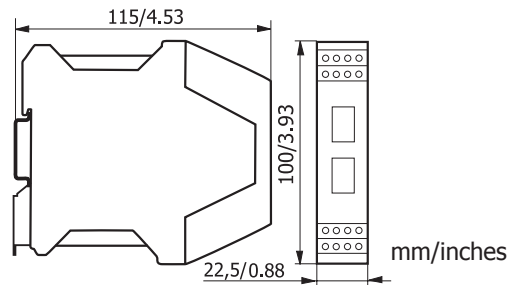
The transmitter is polarity protected for the power supply and will not be damaged by connecting with the wrong polarity, but the output will be 0 mA.

The maximum load in the output loop depends on the supply voltage, see "DATA shortform"

"Isolation input/output/PC" mentioned in the data sheet, indicates IS galvanic isolation like an isolating barrier. Therefore ordinary power supplies with $U_m < 250$ VAC can be used with IPAQ-21LX/-22LX.

Sensor wire check: the transmitter uses a pulsating technique to monitor sensor break or sensor shortened to avoid measuring errors. This pulsating signal may interfere with some electronic calibrators. By selecting "Sensor Break = None" in the IPRO software and download the configuration into the transmitter the pulsating signal is turned off.

DIMENSIONS



CONFIGURATION

Install the IPRO software from our software CD or from our web site www.inor.com.

The IPAQ-21LX/-22LX transmitters must be powered, during configuration (see CONNECTIONS Fig 1). The IPAQ-21L/-22L must be powered if you use configuration cable IPRO-X. If the 4-pole, so called "off-line" cable is used (only for IPAQ-21L/-22L), you usually don't have to power the transmitter during configuration. For computers with only USB-connection, use a USB/RS232 adapter.

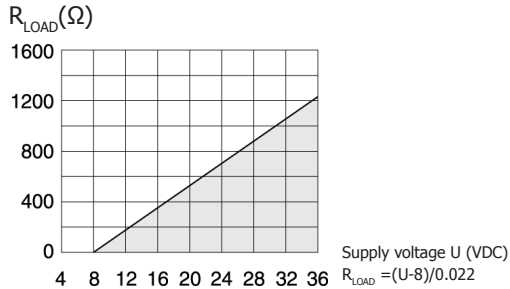


For keeping the safety of the internal circuits in the IPAQ-21LX/-22LX, always use an ATEX -approved IPRO-X configuration cable when making a configuration. Before configuring an operating IPAQ-21LX/-22LX make sure the input wiring is not connected to hazardous area.

When choosing differential temperature measurements with Pt100 be sure to select "sensor break" = none. For IPAQ-21L/-22L only, the transmitter can be configured during operation. The output is frozen while transmission from PC to IPAQ takes place. When transfer is done the transmitter uses the new parameters.

DATA (shortform)

Power supply:	8 to 36 VDC
Isolation in/out:	1500 VAC
Output:	4-20 mA limit 23 mA
Operating temperature:	IPAQ-21LX/-22LX -20 ≤ Tamb ≤ +60 °C
	IPAQ-21LX/-22LX -4 ≤ Tamb ≤ +140 °F
	IPAQ-21L/-22L -20 ≤ Tamb ≤ +70 °C
	IPAQ-21L/-22L -4 ≤ Tamb ≤ +158 °F



IPAQ-21LX/-22LX EX-DATA

Approval Demko 03 ATEX 134845X

Ex II (1) G [Ex ia] IIC
Ex II (1) D [Ex ia]D

Input (terminals 11-14, 21-24)

(Intrinsically safe sensor terminals) U_o : 15 V
 I_o : 13 mA
 L_o : 100 mH
 C_o : 550 nF

The IPAQ-21LX/-22LX shall be placed outside the hazardous area.

The IPAQ-21LX/-22LX contains no serviceable parts.

In case of repair, the product must be sent to INOR or your dealer.

CABLE LENGTH

For Ex-version IPAQ-21LX/22LX observe that maximum input cable length is restricted by cable parameters. The total capacitance, inductance and ratio inductance/resistance must be within the limits given by the certificate for the transmitter and EN 500020, EN60079-14.

If the connected sensor includes capacitance and inductance these values must be subtracted from C_o and L_o

To calculate maximum length of the cable, use the data-sheet for the cable to get the cable capacitance/meter. To get the maximum length of the cable use the formula:

$Length_{max} = C_o/C$ where L_{max} is in meter, C_o is from Ex-data above and C is cable capacitance/m (nF/m)

$Length_{max} = L_o/L$ where L_{max} is in meter, L_o is from Ex-data above and L is cable inductance/m (mH/m)

Use the smallest $Length_{max}$ of these two calculated values.

CONNECTIONS

IPAQ-21L/-22L have screw plug connectors with coding for connecting to the right position.

IPAQ-21LX/-22LX can be supplied with either fixed terminals or screw plug-in connectors with coding.

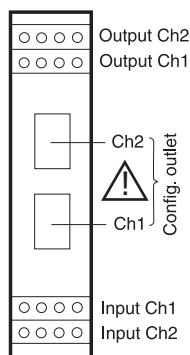
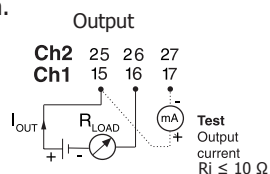


Fig 1.

1. Power supply, load and output signal are connected according to figure below.
2. Input signal is connected according to one of the figures 2-8

Cover with the delivered plastic plugs during operation.



INSTALLATION

IPAQ-21LX/-22LX must be installed in safe area.

IPAQ-21LX/-22LX/-21L/-22L are designed to fit on a standard DIN Rail.

Ch2 21 22 23 24
Ch1 11 12 13 14
RTD
4-wire connection

Fig 2

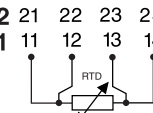


Fig 3

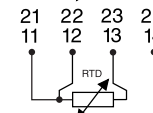


Fig 4

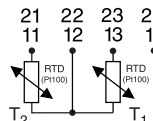


Fig 5

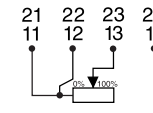


Fig 6

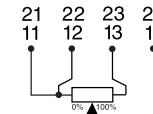


Fig 7

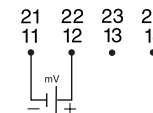
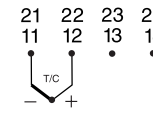


Fig 8



ORDERING TABLE

IPAQ-21L,	Non-Ex, 1-Ch	70IP21L001
IPAQ-22L,	Non-Ex, 2-Ch	70IP22L001
IPAQ-21LX,	Ex, 1-Ch Fixed conn.	70IP21LX01
IPAQ-21LX,	Ex, 1-Ch Plug-in conn.	70IP21LX02
IPAQ-22LX,	Ex, 2-Ch Fixed conn.	70IP22LX01
IPAQ-22LX,	Ex, 2-Ch Plug-in conn.	70IP22LX02
PC Configuration Kit		70CFG00092
Configuration		70CAL00001

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.