

INL100 , INL150 , input : thermocouple, PT100 3 or 4 wires, Cu10, mV, ...
INL100P , INL150P input: 4...20 mA and 0...10V

INL100(P): 4, 8 or 12 isolated inputs.

INL150(P): 16, 20 or 24 isolated inputs.

individual setting for each inputs.

2 alarm thresholds per inputs.

option: analog output.

• **Communication:**

RS485 Profibus-DP

RS485 Modbus RTU

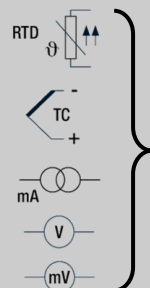
Modbus-TCP (Ethernet)

Embedded Web Server

SNMP

6 simultaneous connections

• **SIL2 option Hardware**



INL100
Up to 12 inputs
size 96 x 96mm



INL150
Up to 24 inputs
size 96 x 144mm

4/20mA

Relay

Ethernet

RS485

This versatile product can be used like a simple analog scanner with alarm management, or used as a communicating control unit with advanced processing function.

Measure input: (all measure inputs are isolated)

INL100 and INL150 : thermocouples , Pt100 ,Cu10, mV, resistance

INL100P and INL150P : 4...20 mA and 0...10V

Special input on request (by firmware update) :

CTN , CTP , NI100 , PT1000 , Balco 500, potentiometer, 0...100V,.....

Front panel:

- Display measure on 4 digits (10000 points), 14.2 mm LED display.
- Indication of selected channel on auxiliary alphanumeric display.
- Alarms status LED indicator: 2 per channel.
- Relays and Watchdog status LED indicator.
- LED indication for display mode : scanning or fixed.
- Three buttons allowing full configuration of device & alarms resetting.
(input type, thresholds setting, communication, display mode, ...)
- configuration access locking is possible via serial USB link.

Alarms:

The device has 2 configurable alarms per measure channel.
(threshold, direction, hysteresis, delay, sensor breaking detection).
These alarms control respectively two relays common to all channels alarms. An alarm hold function is available for each of these 2 relays.
In addition, a single contact relay is available for each channels allowing remote identification of channel in alarm (**inl100/R**). Each relays can be configured in positive or negative security (NO/NC). A "Watchdog" output relay (NC) signals an internal default or the loss of power.

Special and complementary functions:

- Selection or inhibition of each measured channels in the scan sequence.
- Possibility to have a mirror channel (a channel who follow another) for increase the number of alarms and relays by measure channel.
- Differential alarm for monitoring a temperature gap
- Analog output giving the image of a specific channel or an inter-channel calculation

Communication:

In option, the measurement feedback can be carried out via several communications protocols :

- RS485: Modbus RTU, Profibus-DP / - Ethernet: Modbus TCP

Features:

- DIN panel case according to DIN IEC 61554, in Noryl SE1, GFN2, 701 black, UL94 V1 non-halogen fire retardant, fastening by clamp
- pluggable spring (in standard) or screw terminal blocks
(2.5mm² for power supply, 1.5mm² for inputs)
- 4 ways galvanic isolation inputs / output / power supply / relays

Configuration: The device is fully configurable via front panel or via the serial RS232 link (jack 3.5). USB to jack cable supplied separately.
Possible firmware update via this RS232 link.

Operational safety data : (12 channels + individual relays @ 30°C)
component type B , HFT = 0 Hardware

$\lambda f = 725$ fit (1/MTBF)

DC = 90.8 % (diagnostic coverage)

SFF = 91.9 % (probability of failure fraction)

PFH = 67 fit (probability of failure per hour)

**Option IP65 enclosure with
window for "outdoor" application
200mm x 200mm x170mm**



**Option for DIN rail mounting
bracket**



Version and order code:

INL100: 4, 8, 12 Temperature inputs (Tc, 3 wires RTD) (96 x 96mm)

INL100P: 4, 8, 12 Process input (mA , V) (96 x 96mm)

INL150: 16,20,24 Temperature input (Tc, 3 wires RTD) (96 x 144mm)

INL150P: 16,20,24 Process input (mA , V) (96 x 144mm)

For all models: 2 alarm relays common to all measure channels
+ 1 Watchdog relay

OPTION:

- pt4f:** measurement board for PT100 4 wires input
- /R:** individual relay per measure channel (250V 2A)
- /Ri:** Individual relay without common (4 isolated NO contact)
- /S:** Isolated analog output. Configurable: recopy of one channel, max value, min value, sum or average of all channels, gap between all channels
- /CM** RS485 link MODBUS RTU protocol
- /CP** RS485 link PROFIBUS-DP protocol
- /CMTCP** Ethernet link, Modbus TCP, 6 connections + web
- /SNMP** Ethernet link, SNMP protocol
- /SIL2** SIL2 version Hardware

Note: Analog output and communication options are not cumulative !

INPUT

TYPE	RANGE	ACCURACY
Voltage	0 / 120 mV	+/- 30 μ V
Input impedance	> 4 Mohms	
Resistance	0 / 380 Ohms	+/- 0.2 Ohms
Pt100 2 or 3 wires	-200 / 600 °C	+/- 0.35 °C
Pt100 4 wires	-200 / 600 °C	+/- 0.15 °C
Cu10 2 or 3 wires	-100 / 200 °C	+/- 1 °C
Tc B	200 / 1800 °C	+/- 3 °C
Tc E	-250 / 1000 °C	+/- 0.5 °C
Tc J	-200 / 700 °C	+/- 0.7 °C
Tc K	-200 / 1350 °C	+/- 0.8 °C
Tc R	0 / 1750 °C	+/- 3 °C
Tc S	0 / 1600 °C	+/- 3 °C
Tc T	-250 / 400 °C	+/- 0.7 °C
Tc N	-250.....1350 °C	+/- 0.5 °C
TC W3	0.....2300 °C	+/- 2 °C
TC W5	0.....2300 °C	+/- 2 °C
T° compensation	-10 / 60 °C	+/- 0.2 °C
Other thermocouples on request		

INL100P and INL150P (process)

Voltage	0 / 10 V	+/- 5 mV
Input impedance	250 Kohms	
Current	0 / 20 mA	+/- 10 μ A
Current	4 / 20 mA	+/- 10 μ A
Input impedance	5 ohms	
cycle time (all channels acquisition)		<1500 ms

ANALOG OUTPUT

TYPE	RANGE	ACCURACY
Current	0...4 ...20 mA	+/- 10 μ A
Load	700 Ohms max	

RELAYS

Electrical endurance:	
$\leq 30\text{mV}/\leq 10\text{mA min.}$	2.5×10^6 operations
resistive, 125VDC / 0.24A - 30W	5×10^5 operations
resistive, 220VDC / 0.27A - 60W	1×10^5 operations
resistive, 250VAC / 0.25A - 62.5VA	1×10^5 operations
resistive, 30VDC / 1A - 30W	5×10^5 operations

WIRING AND OUTLINE DIMENSIONS:

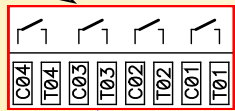
Size w x h :

INL100 : 96 x 96 mm
Cut off w x h : 89 x 92 mm

Depth: 90 mm

INL150 : 96 x 144 mm
Cut off w x h : 89 x 139 mm

Option : /Ri
contact relay without common point
(not available for INL100 PT4F)



POWER SUPPLY

20 Vdc ... 265 Vac-dc, 5 VA

ENVIRONMENT

Operating temperature	-20 to 60 °C
Storage temperature	-25 to +85 °C
Influence (% full scale)	< 0.01 % / °C
Humidity (not condensed)	85 %
Weight (depend of number of channels)	~ 500 g (12 channels)
Protection rating	IP20, standard IP65, kit in option
	IK06 (1 joule) front panel
Dielectric strength:	
input/Supply/output/relay/communication	1500 Vrms continuous
inputs/inputs	500 Vrms continuous

MTBF (MIL HDBK 217F)	> 1 500 000 Hrs @ 25°C
Life time	> 180 000 Hrs @ 30°C

Shock CEI 60068-2-27 (operational)	15 G / 11 ms
Bump CEI 60068-2-29 (transportation)	40 G / 6 ms
Vibrations CEI 60068-2-6 (operational)	1 G / 10 - 150 Hz
Vibrations CEI 60068-2-6 (transportation)	2 G / 10 - 150 Hz

COMMUNICATION

Modbus RTU (/CM option): RS485 from 1200 to 38400 bds.
Profibus-DP (/CP option): RS485 from 9600 to 1,5 Mbds.
Ethernet 10/100 T base (RJ45 connection)

Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4	
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011	
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	group 1 class A	
EN 61000-4-4 EFT	EN 61000-4-11 AC dips		
EN 61000-4-5 CWG	EN 61000-4-12 ring wave		
EN 61000-4-6 RF	EN 61000-4-29 DC dips		

Synoptic:

