INTRODUCTION

The Universal Indicator **N1040i** combines, in one compact and convenient 1/16 DIN enclosure, a high precision microprocessor based analog circuit with a very simple configuration interface to monitor a wide range of analog variables.

This low cost tough versatile indicator is compatible with most common thermocouples, Pt100 RTD and linear as 4 to 20 mA and mV.

With a intuitive interface to program range and decimal point through the keypad, **N1040i** allows inexperienced instrumentation operators easy installation and start up for most processes.

Optionally **N1040i** has two alarm relays with 6 programmable functions and auxiliary power supply for external signal conditioners.

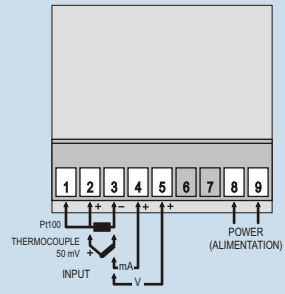
FEATURES AND SPECIFICATIONS

- Thermocouple inputs J, K, T, N, R, S, B, E, RTD Pt100 and linear 0-20 mA, 4-20 mA, 0-50 mV, 0-5 V e 0-10 V in one model.
- Input adjustable Offset allows small indication corrections
- Analog input signal retransmission over 0-20 mA or 4-20 mA
- Up to 2 programmable alarms outputs
- Up to 2 relay outputs, SPDT and SPST-NO
- Alarm Functions: minimum, maximum, differential, minimum differential, maximum differential and sensor break.
- Features Initial alarm blocking function
- Flash alarm function alerts operator to condition while in alarm state.
- Sensor failure detection
- Simple configuration and operation interface
- Password para meters protection
- Display accessible electronic serial number
- Silicone rubber keypad
- Factory calibration parameters recovery
- Universal switching power supply ensures high precision even under mains voltage oscilations
- Optional auxiliary 24 Vdc power supply to connect field transmitters
- Optional RS485 interface
- Power Supply:
  - 100 to 240 Vac (±10 %), 50/60 Hz
  - 48 to 240 Vdc (±10 %)
  - 24 to 240 Vdc (±10 %) (model N1040i-F)
- Maximum power consumption: 6 VA
- Dimensions: 48 x 48 x 80 mm
- Approximate Weight: 75 g
- Environmentl Conditions
  - Operation Temperature: 0 to 50 ºC
  - Relative Humidity: 80% a 30 ºC
  - For temperatures above 30 ºC, reduce 3 % per ºC
  - Indoor use: Installation Category II, Pollution Degree 2; altitude< 2000 meters
- Input: According to Table 01
- Internal Resolution: 32767 levels (15 bits)
- Display Resolution: 12000 levels (de -1999 to 9999)
- Input reading rate: up 55 per second
- Precision:
  - Thermocouples J, K, T, E: 0.25 % of the span 1ºC
  - Thermocouples N, R, S, B: 0.25 % of the span 3ºC
  - Pt100: 0.2 % of the span
  - 4-20 mA, 0-50 mV, 0-5 V, 0-10 V: 0.2 % of the span
- Input impedance:
  - Pt100, thermocouples, 0-50 mV >10 MΩ
  - 0-5 V, 0-10 V > 500 kΩ
  - 4-20 mA: 100 Ω
- Measuring of the Pt100: 3 wire type, (=0.00385)
- With compensation of the cable length, max 50 meters, excitation current of 0.170 mA.
- Output Alarm1: Relay SPDT; 240 Vac / 30 Vdc / 3 A
- Output Alarm2: Relay SPST-NA; 240 Vac/ 30 Vdc / 1.5 A
- Retransmission of PV: 0-20 mA / 4-20 mA / 500 Ω máx. / 12 000 levels
- 24 VDC Source: 24 Vdc (5 %) / 20 mA max.
- Case: IP65, Polycarbonate (PC) UL94 V-2
- Back Panel: IP30, ABS+PC UL94 V-0
- Adequete connections for terminals of the clamp type
- Starts operation after 3 seconds connected to the power supply
- Certifications: CE, UL

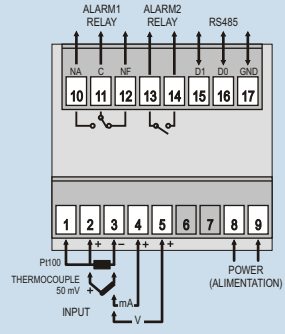
SUPPORTED SENSORS AND MAXIMUM RANGES

TYPE	CODE	RANGE OF MEASURMENT
J	tc J	Range: -110 to 950 ºC (-166 to 1742 ºF)
K	tc H	Range: -150 to 1370 ºC (-238 to 2498 ºF)
T	tc t	Range: -160 to 400 ºC (-256 to 752 ºF)
N	tc n	Range: -270 to 1300 ºC (-454 to 2372 ºF)
R	tc r	Range: -50 to 1760 ºC (-58 to 3200 ºF)
S	tc S	Range: -50 to 1760 ºC (-58 to 3200 ºF)
B	tc b	Range: 400 to 1800 ºC (752 to 3272 ºF)
E	tc E	Range: -90 to 730 ºC (-130 to 1346 ºF)
Pt100	Pt	Range: -200 to 850 ºC (-328 to 1562 ºF)
0-20mA	L0.20	Analog Linear Signal Indication programmable from -1999 to 9999.
4-20mA	L4.20	
0-50mV	L0.50	
0-5Vdc	L0.5	
0-10Vdc	L0.10	
4-20mA NON LINEAR	Ln J	Non Linear Analog Signal Indication range according to the associated sensor.
	Ln H	
	Ln t	
	Ln n	
	Ln r	
	Ln S	
	Ln b	
	Ln E	
	LnPt	

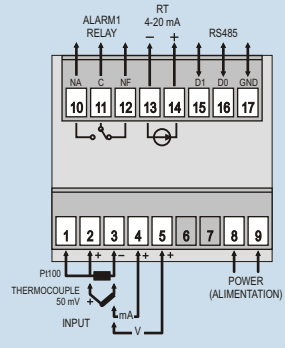
ELECTRICAL CONNECTIONS



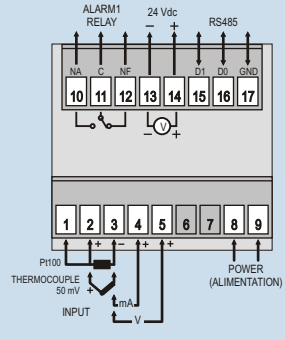
Model: N1040i-F



Model: N1040i-RR
N1040i-RR-485



Model: N1040i-RA
N1040i-RA-485



Model: N1040i-RE
N1040i-RE-485

HOW TO SPECIFY

Model	Description
N1040i-F	Basic version. Wide power supply: 100 to 240vAC, 24 to 240vDC
N1040i-RR	Model with two alarm outputs
N1040i-RA	Model with one alarm output and one output for the 4-20mA retransmission of PV
N1040i-RE	Model with one alarm output and one auxiliary 24 VDC voltage source
N1040i-RR-485	Model with two alarm outputs and serial communication RS485
N1040i-RA-485	Model with expansion one alarm output, one output for the 4-20mA retransmission of PV and serial communication RS485
N1040i-RE-485	Model with one alarm output, one auxiliary 24 VDC voltage source and serial communication RS485