NOVUS
We Measure, We Control, We Record

TEMPERATURE CONTROLLER N1030

QUICK GUIDE V1.0x C

ENGLISH

QG 5011131

This quick guide presents basic information regarding controller initial setup. For the complete operating manual please access NOVUS website www.novusautomation.com.

SAFETY ALERTS

CAUTION: Read the manual thoroughly before installing and operating the equipment.	**CAUTION OR DANGER:** Electrical shock hazard.

Any control system design should take into account that any part of the system has the potential to fail. This product is not a protection or safety device and its alarms are not intended to protect against product failures. Independent safety devices should be always provided if personnel or property are at risk.

Product performance and specifications may be affected by its environment and installation. It's user's responsibility to assure proper grounding, shielding, cable routing and electrical noise filtering, in accordance with local regulations, EMC standards and good installation practices.

WARRANTY

Warranty conditions are available on our website www.novusautomation.com/warranty.

SUPPORT AND MAINTENANCE

This product contains no serviceable parts inside. Contact our local distributor in case you need authorized service.

INSTALLATION

The controller must be fastened on a panel, following the sequence of steps described below:

- Prepare a panel cut-out according Specifications;
- Remove the mounting clamps from the controller;
- Insert the controller into the panel cut-out;
- Slide the mounting clamp from the rear to a firm grip at the panel.

Recommendations for the Installation:

- Sensor input wiring should be routed away from high-current power conductors using shielded cables and inside grounded conduits.
- All electronic instruments must be powered by a clean mains supply, proper for instrumentation.
- It is strongly recommended to apply RC FILTERS (noise suppressor) to contactor coils, solenoids, etc.

Electrical Connections:

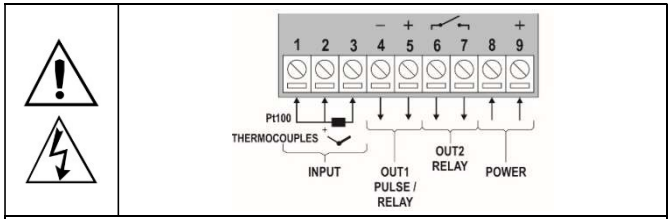

Fig. 1 – Back panel controller

OPERATION

Display of PV / Programming (top display, red color): Displays the current value of PV (Process Variable). When in configuration mode, it shows the parameters names.

Display of SP / Parameters (bottom display, green color): Displays the value of SP (Setpoint). When in configuration mode, it shows the parameters values.

TUNE Indicator: Stays ON while the controller is in tuning process.

OUT Indicator: For relay or pulse control output; it reflects the actual state of the output.

A1: signalize the occurrence of alarm situation.

P **Key:** used to walk through the menu parameters.

Increment key and **Decrement key:** allow altering the values of the parameters.

key : used to retrocede parameters.

The configuration parameters are grouped in thee cycles:

1 - TUNING / 2 - INPUT / 3 - CALIBRATION

To navigate through the cycles keep key **P** pressed. The first parameter of each cycle are presented following Parameter Description table. To enter a particular level, simply release the **P** key when the first parameter in that level is displayed.

DESCRIPTION OF THE PARAMETERS

INDICATION SCREEN

PV + SP	PV Indication Screen. Upper display (red) shows the current measured temperature value (PV). Bottom display (green) shows the desired temperature value (SP) for the process.

TUNING CYCLE

AtUn	AUTO-TUNE. It enables automatic tuning of the PID parameters. **OFF** Automatic tuning off; **FAST** Execute tuning in FAST mode; **FULL** Execute tuning in FULL mode.
Pb	Proportional Band. When set to zero (0), control action is ON/OFF.
Ir	Integral Rate.
dt	Derivative Time.
Ct	Cycle Time (PWM).
HYSt	Control Hysteresis.
ACt	Action Control: **rE** Control with Reverse Action; **dIr** Control with Direct Action.
Out1	Assign functions to the Output channels OUT1 and OUT2. **oFF** Not used; **CtrL** Acts as Temperature Controller; **AL** Acts as Alarm Output.
Out2	

INPUT CYCLE

tYPE	Input Type: (J): **tcJ** -100 to 950°C / -166 to 1742°F (K): **tcH** -150 to 1370°C / -238 to 2498°F (T): **tct** -160 to 400°C / -256 to 752°F (Pt100): **Pt** -200 to 850°C / -328 to 1562°F
dPPo	Decimal Point. Selects the decimal point position.
unit	Selects display indication for degrees: **C** - Indication in Celsius; **F** - Indication in Fahrenheit.
OFFS	Offset. Parameter that allows the user to make adjustments to the PV value.
SPLL	SP Low/High Limit. Defines maximum and minimum limits for the SP.
SPHL	
FuAL	Functions of Alarms. Defines the functions for the alarms.
SPAL	Setpoint Alarm.
bLAL	Blocking Alarm. **YES** - Enables initial blocking; **no** - Inhibits initial blocking.
HYAL	Hysteresis of Alarm. Defines the difference between the value of PV at which the alarm is triggered and the value at which it is turned off.

The Calibration Cycle procedure is described on the complete user manual version available at www.novusautomation.com.

SPECIFICATIONS

DIMENSIONS:

N1030-PR model: ..... 48 x 48 x 35 mm (1/16 DIN)
..... Approximate Weight: 60 g

N1030-RR model: ..... 48 x 53.5 x 35 mm
..... Approximate Weight: 75 g

CUTOUT IN THE PANEL: ..... 45.5 x 45.5 mm (+0.5 -0.0 mm)

POWER SUPPLY:

Standard Model: ..... 100 to 240 Vac (±10 %), 50/60 Hz
..... 48 to 240 Vdc (±10 %)

Optional 24V: ..... 12 to 24 Vdc / 24 Vac (-10 % / +20 %)

Maximum consumption: ..... 5 VA

ENVIRONMENTAL CONDITIONS:

Operation Temperature: ..... 0 to 50 °C

Relative Humidity: ..... 80 % @ 30 °C

For temperatures above 30 °C, reduce 3 % for each °C.

Internal use; Category of installation II, Degree of pollution 2; altitude < 2000 meters.

INPUT:

Internal Resolution: ..... 32767 levels (15 bits)

Resolution of Display: ..... 12000 levels (from -1999 up to 9999)

Rate of input reading: ..... up 5 per second

Accuracy: ..... Thermocouples J, K, T: 0.25 % of the span ±1 °C
..... Pt100: 0.2 % of the span

Input Impedance: ..... Pt100 and thermocouples: > 10 MΩ

Measurement of Pt100: ..... 3-wire type, (α=0.00385)

OUTPUTS: OUT1: ..... Voltage pulse, 5 Vdc / 25 mA or Relay SPST; 1.5 A / 240 Vac / 30 Vdc

OUT2: ..... Relay SPST; 1.5 A / 240 Vac / 30 Vdc

FRONT PANEL: ..... IP65, Polycarbonate (PC) UL94 V-2

ENCLOSURE: ..... IP20, ABS+PC UL94 V-0

CERTIFICATION: ..... CE and UL