INTRODUCTION

Novus features a wide range of electronic thermostats that provide the users with the right choice for process control. The cutting-edge 320 series was specially designed to fulfill the requirements of the HVAC markets. They indicate temperature or humidity in the most different processes with a high accuracy degree. Low-cost and easy to implement, they provide process optimization and reduce power consumption costs.

FEATURES

- **N320** Model: Digital electronic thermometer that indicates measured temperature values. Offset adjustment.
- **N321/N322/N323** Models: Thermostat with one, two or three relay outputs. They can be configured through keypad for heating or cooling control. They all feature a relay output for control, **N322** has also an alarm output and **N323** has two alarm outputs. The alarm output can be configured as minimum, maximum or differential alarm.
  Example: Multi-stage HVAC systems.
- **N321R** Model: Automatically defrosts by interrupting the compressor activity with programmable time interval and manual defrost key. Holds indication while the defrosting cycle is performing. Application example: Chambers and frozen food displays.
- **N322T** Model: Thermostat with two relay outputs. It features a relay output for control and a relay with timed triggering for use in enforced defrosting, agitation and other applications that require periodic triggering. It is employed in HVAC systems.
  Example: Milk coolers and heating pumps.
- **N322RHT** Model: Digital controller for relative humidity and temperature. It features two relay outputs for control that can be separately configured as control or alarm.
  Example: Fruit storage and air conditioning.
- **N323R** Model: Thermostat that controls the end of defrosting by temperature. It features three output relays: compressor, defrosting and fan. Operates with two sensors (NTC), one for room temperature and other to be attached to the evaporator for control of defrost end. Employed in cooling and defrosting.
  Example: Frozen chambers and displays.
- LED indicators 3 ½ digits.
- Sensor offset adjustment.
- Adjustable hysteresis.
- Minimum and maximum range for configurable setpoints.
- Configuration is maintained even with energy failures.
- Configurable password for configuration lock.
- Long life silicone keys.
- CE and UL Certified. (USA and Canada).

OPTIONAL:

- RS485 interface with Modbus RTU protocol.
- Power supply: 12 to 24 Vcc.

SPECIFICATIONS

- Range of Measurement Temperature:
  - NTC: -50 to 120 °C (-58 to 248 °F) ;
  - Pt100: -50 to 300 °C (-58 to 572 °F);
  - Pt1000: -200 to 530 °C (-328 to 986 °F);
  - Keypad-selectable thermocouples (Except N321R and N323R):
    - J Thermocouple 0 to 600 °C (32 to 1112 °F);
    - K Thermocouple -50 to 1000 °C (-58 to 1832 °F);
    - T Thermocouple -50 to 400 °C (-58 to 752 °F);
- Accuracy:
  - NTC: 0.6 °C (1,08 °F);
  - Pt100 and Pt1000: 0.7 °C (1,26 °F);
  - Thermocouple: 3 °C (5,4 °F).
- RHT Accuracy 3% at 25 °C, 20 to 80% RH.
- Output 1: SPDT relay, 1HP(16A resistive) /250 Vac.
- Output 2: SPST relay, 3 A (5A resistive) /250 Vac.
- Output 3: SPST relay, 3 A (5A resistive) /250 Vac.
- Resolution: 0,1°C or 0,1 °F ranging from -19,9 to 199,9 °C/°F.
- Front-panel with IP56 protecton.
- Sampling: 1.5 times per second.
- Power supply: 100 to 240 Vac /dc ±10%.
- Frequency: 50~60 Hz.
- Consumption: 5 VA.
- Dimensions: 75 x 33 x 2.95 mm.
- Panel cutout: 70 x 29 mm.
- Weight: 120 g.
- Operating temperature: 0 to 40 °C (32 to 104 °F) .
- Storage temperature: -20 to 60 °C (-4 to 140 °F).

HOW TO SPECIFY

Model: **N323 - A - B - C**, where:	
A: Sensor:	**NTC** or **Pt100** or **Pt1000** or **J/K/T** (Thermocouples)
B: Communication:	**Blank** or **485** (RS485, RTU Modbus Protocol)
C: Power supply:	**Blank** (100-240 Vac/cc) or **24V** (24 Vac/cc)

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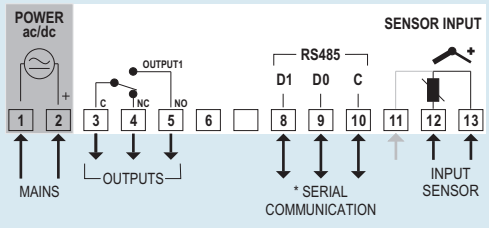
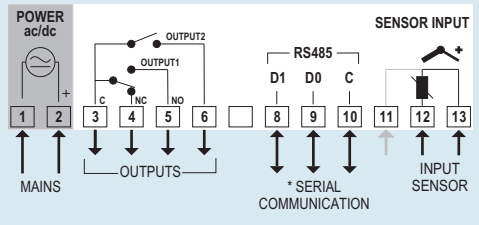
ELECTRICAL CONNECTIONS

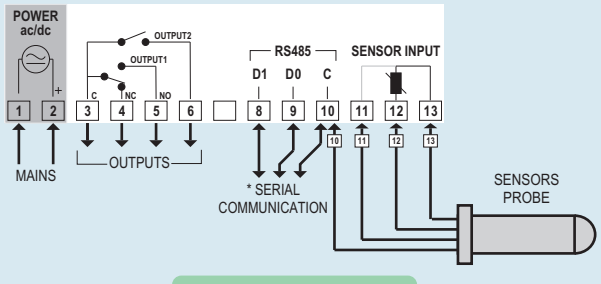
N320



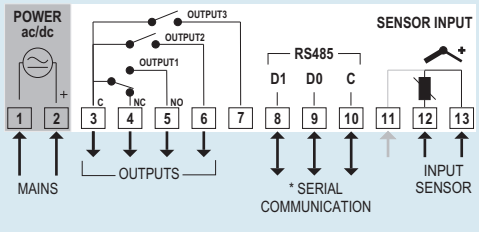
N321/N321R



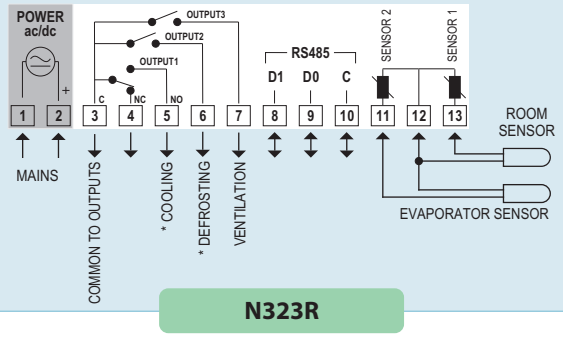
N322/N322T



N322RHT



N323



N323R

N322 RHT MEASUREMENT ACCURACY AND SENSOR OPERATING LIMITS