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Temperature Control

digital thermostats and controllers for refrigerat

RD31

APPLICATION FIELD: the RD31 is an electronic 1-stage thermostat conceived for applications both for refrigeration and heating. The large measuring range ($-55 \times +270 \text{ }^{\circ}\text{C}$ / $-67 \times +518 \text{ }^{\circ}\text{F}$) combined with the decimal resolution, makes the RD31 a thermostat suitable for several applications.

CARRIED OUT ACTION: the RD31 operates as an ON/OFF cooling (heating) regulator. This means that the compressor stops (starts) when set point temperature is reached and restarts (stops) at a temperature equal to the set point one plus (minus) a differential. The RD31 allows managing defrost cycles by time by simple compressor stop.

SETTING: the set point temperature and the differential (hysteresis), are set by the user. Defrost cycle duration and the interval between two consecutive cycles are settable too. Users are allowed to manage operating parameters (max./min. temperature alarms, $^{\circ}\text{C}/^{\circ}\text{F}$ choice, probe error correction, keyboard locking, etc.).

USER-FRIENDSHIP: the RD31 stands out for the innovative design of the ColorLine series, based on the only push button on the frontal mask and on the new alphanumerical system to visualize parameters that permits a quick and intuitive controller setting. Available on request the version with the "ENCO" push button, a new and exclusive tool to have access to the instrument configuration in a practical and intuitive way, by simply pressing and rotating the knob on the frontal mask.

INPUT: the RD31 is provided with 1 input for PTC standard probe for medium-low temperatures. For applications up to $270 \text{ }^{\circ}\text{C}$

TECHNICAL SPECIFICATIONS

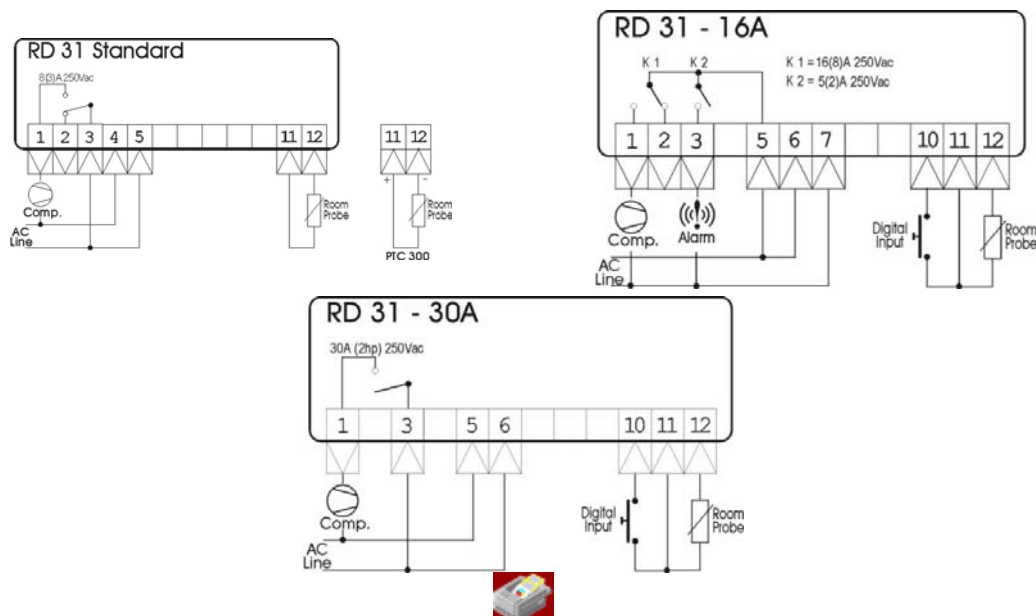
Housing: self-extinguish UL94V0 ABS plastics, black colour
 Size: frontal 32 x 74 mm; depth 78 mm (incl. terminal cover)
 Mounting: flush-panel on hole 28 x 70 mm (with "fast-lock" sliding brackets)
 Protection: IP 64 for the frontal panel
 Connections: on screw terminal board for wires with cross section area < 2.5 mm²
 Display: LED, 3 digits, 12.5 mm high
 Data storing: on not volatile memory
 Operating temperature: $-5 \times +65 \text{ }^{\circ}\text{C}$ ($+23 \times +149 \text{ }^{\circ}\text{F}$)
 Storing temperature: $-30 \times +75 \text{ }^{\circ}\text{C}$ ($-22 \times +167 \text{ }^{\circ}\text{F}$)
 Relative humidity: 20 x 85 % (not condensing)
 Measure range: $-55 \times +150 \text{ }^{\circ}\text{C}$ ($-67 \times +302 \text{ }^{\circ}\text{F}$) for PTC probe; $-25 \times +270 \text{ }^{\circ}\text{C}$ ($-13 \times +518 \text{ }^{\circ}\text{F}$) for PTC-300 probe
 Output: 1 on a SPDT 8(3) A 250 Vac relay (on request, SPDT 16(8) A 250 Vac or SPST 30(15) A 250 Vac) (*) 2nd optional alarm relay SPST 5(2) A 250 Vac (**)
 Analogue input: 1 for PTC/PTC-300 thermostatic probe
 Resolution: 0.1 $^{\circ}\text{C}$ (0.2 $^{\circ}\text{F}$)
 Accuracy: better than 0.5% f.s. ± 1 digit
 Power supply: standard 12 Vac/dc $\pm 15\%$; available 230 Vac $\pm 5\%$ 50/60 Hz through built-in transformer
 (*): with only-ohmic loads, the max. amperage tolerable for the terminal board is 24 A

(518 °F) it can use the innovative PTC-300 probe. Furthermore, it can manage 1 digital input to check door state (open/close), for energy saving, etc. The "Quick-Key" programming connector is also available; through it users can quickly and easily reset default values of operating parameters.

OUTPUT: it is provided with 1 relay for 8 A loads (16 A or 30 A on request). The alarm condition can be managed through an internal buzzer, or through a 5 A relay, for external drive (in this case the main relay can be not bigger than 16 A). On request the serial output RS-232 type is available. This allows the connection with external devices.

POWER SUPPLY: it can be connected directly to the supply mains with 230 Vac voltage (115 Vac on request) through the internal transformer. It can be supplied with switching-mode facility (12-24 Vac/dc). This feature is a decisive factor for the automotive field, where voltage rushes can be relevant.

(**): with the 2nd alarm relay, the main relay can be not bigger than 16 A



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