CROUZET CONTROL

Temperature control relay for lift service rooms - according to EN81 - 35 mm HWT81 Part number 84874130

- Control relay designed to monitor the temperature in lift machine rooms in accordance with standard EN81
- PT100 input
- Adjustable control between 5 °C and 40 °C
- Independent setting of high and low thresholds
- Built-in phase control option

Part numbers

	Type	Function	Nominal voltage (V)	3-phase control
84874130	HWT81	Under/Overtemperature window mode + phase sequence and failure	24 →240 V AC/DC	3 x 208 →480 V AC

Specifications

Supply

Supply voltage Un	24 V →240 V AC/DC
Voltage supply tolerance	-15 %, + 10 % AC -10 %, +10 % DC
Operating range	20,4 V →264 V AC 21,6 V →264 V DC
Polarity with DC voltage	No
AC supply voltage frequency	50 / 60 Hz ±10 %
Power consumption at Un	3.5 VA in AC/0.6 W in DC
Immunity from micro power cuts	10 ms

Inputs and measuring circuit

Low temperature measurement selection	-1 °C, 1 °C, 3 °C, 5 °C, 7 °C, 9 °C, 11 °C
High temperature measurement selection	34 °C, 36 °C, 38 °C, 40 °C, 42 °C, 44 °C, 46 °C
Temperature measurement input resistance	1330 Ω
Fixed hysteresis	2 °C
Display precision	± 2 %
Max. length of Pt100 probe cables	10 m

Timing

Delay on thresold crossing	1 →10 s
Display precision	0, + 10 %
Reset time	8 s
Delay on pick-up	200 ms
Maximum response time on disappearance of fault	3.5 s for a temperature fault 500 ms for a phase fault

Output

Type of contacts	No cadmium
Maximum breaking voltage	250 V AC/DC
Max. breaking current	5 A AC/DC
Min. breaking current	10 mA / 5 V DC
Electrical life (number of operations)	1×10^4
Breaking capacity (resistive)	1250 VA AC
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC/EN 60947-5-1	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14
Mechanical life (operations)	30×10^6

Insulation

Insulation coordination (IEC/EN 60664-1)	Overvoltage category III : degree of pollution 3
Rated impulse withstand voltage (IEC/EN 60664-1)	4 kV (1,2 / 50 µs)
Dielectric strength (IEC/EN 60664-1)	2 kV AC 50 Hz 1 min.
Insulation resistance (IEC/EN 60664-1)	> 100 MΩ - 500 V DC

General characteristics

Display power supply	Green LED
Temperature indication	Yellow LED (HWT81)
"Phase" indication	Yellow LED (HWT81)
High threshold relay	Yellow LED (HT81, HT81-2)
Low threshold relay	Yellow LED (HT81, HT81-2)
Casing	35 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions

Unless otherwise specified, the characteristics given are applicable to all or part of the product range selected

Material : enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11
Protection (IEC/EN 60529)	Terminal block : IP 20 IP 30 casing
Weight	121 g
Connecting capacity IEC/EN 60947-1	Rigid : 1 x 4^2 - 2 x 2.5^2 mm^2 1 x 11 AWG - 2 x 14 AWG Flexible with ferrules : 1 x 2.5^2 - 2 x 1.5^2 mm^2 1 x 14 AWG - 2 x 16 AWG
Max. tightening torques IEC/EN 60947-1	0,6 →1 Nm / 5,3 →8,8 Lbf.In
Operating temperature IEC/EN 60068-2	-20 →+50 °C
Storage temperature IEC/EN 60068-2	-40 →+70 °C
Humidity IEC/EN 60068-2-30	2 x 24 hr cycle 95 % RH max. without condensation 55 °C
Vibrations according to IEC/EN60068-2-6	10 →150 Hz, A = 0.035 mm
Shocks IEC/EN 60068-2-6	5 g

Standards

Marking	CE (LVD) 73/23/EEC - EMC 89/336/EEC
Product standard	NF EN 60255-6 / IEC 60255-6 / UL 508 / CSA C22.2 N°14 / EN 81-1
Electromagnetic compatibility	Immunity EN 61000-6-2/IEC 61000-6-2 Emission EN 61000-6-4/EN 61000-6-3 IEC 61000-6-4/IEC 61000-6-3 Emission EN 55022 class B
Certifications	UL, CSA, GL
Conformity with environmental directives	RoHS, WEEE

Inputs and measuring circuit

Phase control voltage range	208 V →480 V (-15 % / +10 %) *
Phase failure detection with regeneration	> 30 % of the average of the 3 phases
Frequency of measured signal	50 →60 Hz ± 1 Hz
Relay drop-out voltage (phase failure)	70 %
3-phase input resistors	600 KΩ

Timing

Maximum response time in the event of a 3-phase fault (ms)	500 ms

Output

Type of output	2 single pole NO relay

Insulation

Galvanic isolation of power supply/measurement	Yes, between power supply and PT100 (transformer) Yes, between power supply and output (transformer and relay) Yes, between power supply and 3-phase network (transformer) Yes, between 3-phase network and output (relay) No, between 3-phase network and PT100 (leakage current limited by several high-value resistors) Yes, between PT 100 and output (relay)
Nominal insulation voltage	400 V

Comments

Accessories

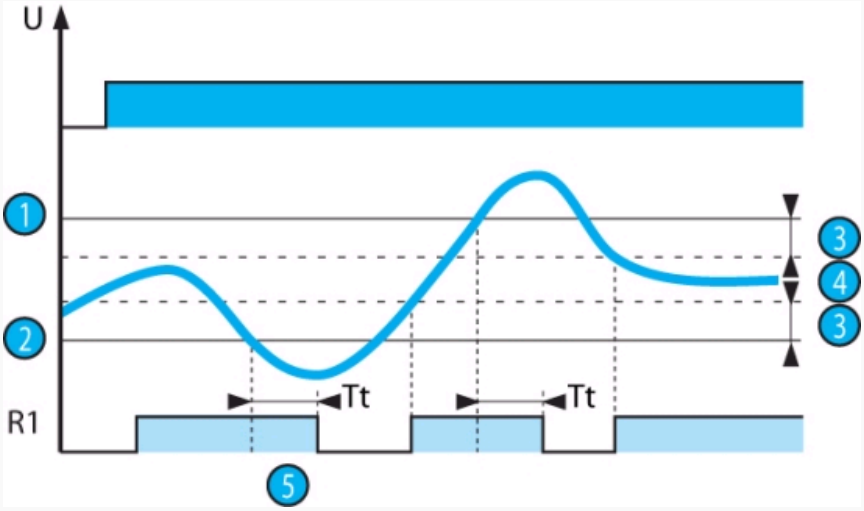
Description	Code
Removable sealable cover for 35 mm casing	84800001

Principles

Overview

Temperature control relays for lift machine rooms are designed for monitoring the temperature between 5 °C and 40 °C according to standard EN81.

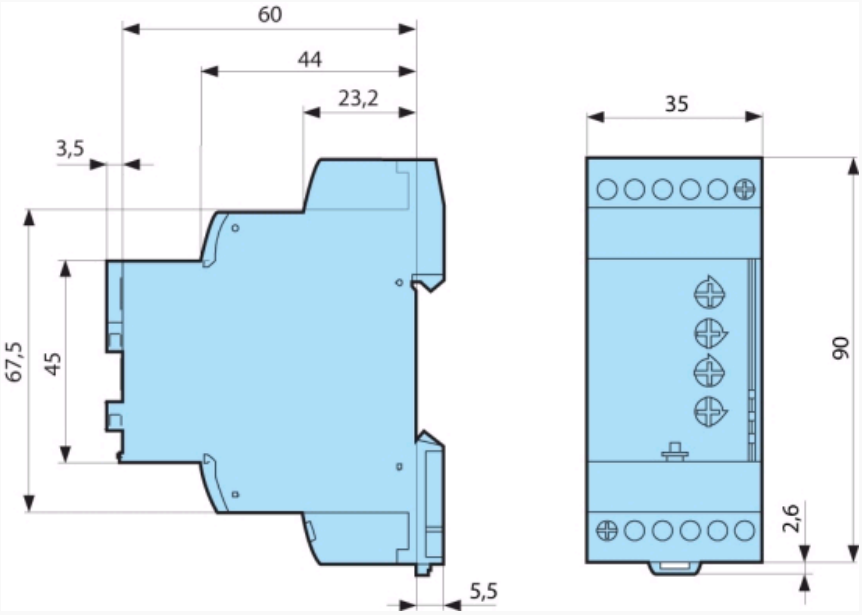
Principles



HWT81 operating principle :
As long as the temperature controlled by the PT100 stays between the two preset thresholds on the front face, the temperature relay is closed.
When the temperature exceeds one of the preset thresholds on the front face (upper or lower threshold), the preset time delay on the front face (Tt) is activated. The yellow temperature LED (R1) flashes. At the end of the time delay, if the temperature still exceeds the preset threshold, the output relay opens and the yellow LED is extinguished.
The output relay R1 closes instantaneously when the temperature returns within the window of the two preset thresholds on the front face plus or minus the fixed hysteresis.
The unit also monitors correct sequencing of phases L1, L2 and L3 of the 3-phase network and the total phase failure in the event of phase regeneration (<70 %).
After a time delay on pick-up (t) and as long as the presence and sequence of the phases are correct, relay R2 and the R2 "phase" LED are active. When a fault appears, the "phase" relay opens and the R2 "phase" LED is extinguished instantly (response time from the appearance of a fault).
On disappearance of the fault, both relay R2 and the phase control LED are activated (response time from the disappearance of a fault). See "Phase failure and phase sequence" curve on page
If the PT100 probe is wired incorrectly (missing or short-circuited), output relay R1 opens and the yellow R1 LED flashes.

Nº	Legend
1	High threshold
2	Low threshold
3	Hysteresis
4	Monitored temperature
5	Threshold crossing delay adjustable on front face (Tt)

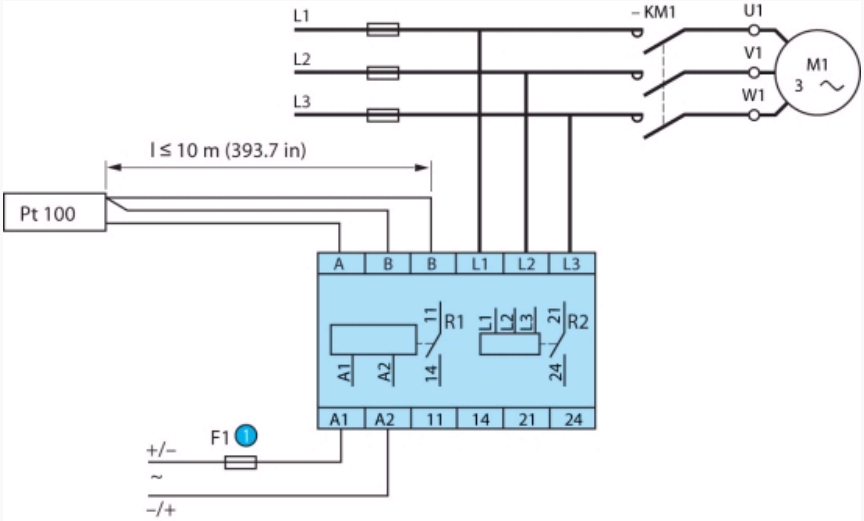
Dimensions (mm)



mm

Connections

HWT81



Nº	Legend
1	Fusible ultra rapide 1 A ou coupe circuit

Product adaptations

- Customisable colours and labels
- Fixed threshold in the generic measurement range
- Fixed or adjustable time delay
- Adjustable fixed hysteresis