

DIN Rail Mount 22.5 mm ETM2 Part number 84874023



Version ETM:

- Controls temperature of machines using built-in PTC probes
- Line break or probe short-circuit detection

Version ETM2 / ETM22 :

- Fault latching function
- Pushbutton for local reset
- Remote reset via external contact
- Pushbutton test facility
- 2 LEDs to indicate relay and power supply status

Part numbers

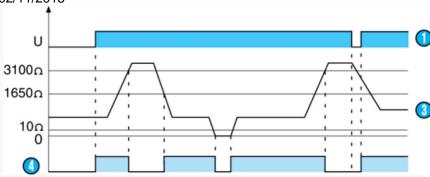
Туре	Output	Supply voltage
84 874 023 ETM2	1 changeover	120 V AC

Specifications

Galvanic isolation by transformer 24 VDC no galvanic isolationOperating range0.85 to 1.10 UnNominal power3 VAMaximal power5 VAImmunity from micro power cuts10 msDelay on pick-up500 msInsulation coordinationCategory III, degree of pollution 2 conforming to IEC/EN 60664-1 / VDE 0110 : 4 KV/2Max. resistance of cold probes1500 ΩTrip threshold3100 $\Omega \pm 10$ %Reset threshold1650 $\Omega \pm 10$ %Short-circuit detection0 - 10 ΩMeasurement voltage as per IEC/EN 60034-11 $\leq 2,5$ VRepetition accuracy with constant parameters ± 0.5 % /°CVoltage-dependent drift ± 0.05 % /°C </th <th>Supply voltage Un</th> <th>230, 120 and 24 VAC 50 / 60 Hz</th>	Supply voltage Un	230, 120 and 24 VAC 50 / 60 Hz
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Nominal power 3 VA Maximal power 5 VA Immunity from micro power cuts 10 ms Daley or pickup 500 ms Insulation coordination Category III, degree of pollution 2 conforming to IEC/EN 60664-1 / VDE 0110 ; 4 KV/2 Max. resistance of cold probes 1500 Ω Tip threshold 3100 Ω± 10 % Reset threshold 1650 Ω± 10 % Reset threshold 150 % Repetition accuracy with constant parameters 2.5 % Repetition accuracy with constant parameters 2.0 5 % Temperature diff 2.00 % /°C Votage-dependent drift 2.00 % /°C Votage-dependent drift 2.00 % /°C Value of the parameters 4.00 % /°C Votage-dependent drift 2.00 % /°C Value dependent drift 4.00 % /°C Was breaking votage 4.00 YoC Max. breaking ourrent 8.A C Max. breaking ourrent 9.00 operations Max. breaking ourrent 4.00 YoC Max. breaking ourrent 4.01 cos questions Kechanical life (operations) 5.10 fe		24 VDC no galvanic isolation
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Immunity from micro power cuts 10 ms 500 ms	Nominal power	3 VA
Delay on pick-up 500 ms Insulation coordination Category III, degree of pollution 2 conforming to IEC/EN 60664-1 / VDE 0110 : 4 KV/2	Maximal power	5 VA
Insulation coordination Category III, degree of pollution 2 conforming to IEC/EN 60664-1 / VDE 0110 : 4 KV/2 Max. resistance of cold probes 1500 Ω The prischold 1500 Ω 10 % Reset threshold 1550 Ω ± 10 % 10 % Short-circuit detection 0 - 10 Ω 10 % Measurement voltage as per IEC/EN 60034-11 ≤ 2,5 V 10 % Repetition accuracy with constant parameters ± 0.5 % \ 0 C 10 € Temperature fulfit ± 0.05 % \ 0 C 10 € Voltage-dependent drift ± 2 % 10 € Output A N 20 VM x B W Max. bracking current 8 A AC 10 € Max. bracking voltage 440 V AC 10 € Max. bracking voltage 440 V AC 10 € Max. bracking voltage 410 V AC 10 € Michanical life (operations) 5 x 10 € 10 € Electrical life AC12 : 2000 VA · 10 € operations AC15 : Cos q = 0.3 - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000 operations DC13 : L/R = 300 ms - 6000	Immunity from micro power cuts	10 ms
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Reset threshold 1650 Ω± 10 % Short-circuit detection 0 - 10 Ω Measurement voltage as per IEC/EN 60034-11 ≤ 2,5 V Repetition accuracy with constant parameters ± 0.5 % Temperature drift ± 0.05 % / °C Output AgNi 90/10 Breaking capacity 2000 VA / 80 W Max. breaking current 8 A AC Max. breaking outrent 100 mA Max breaking current 100 mA Min. breaking current 100 mA Mechanical life (operations) 5 x 10 ⁶ Electrical life AC12: 2000 VA - 10 ⁶ operations Mc15: Cos φ = 0,3 - 6000 operations AC15: LiR = 300 ms - 6000 operations Reset time ≤ 500 ms Response time ≤ 500 ms Display on ETM2/ETM22 - power supply green LED Display on ETM2/ETM22 - Relay yellow LED Class of protection (IEC EN/60529) - Casing IP 50 Housing material Self-extinguishing Weight (0) 145 Termperature limit operation (IEC 68.1.14) ("C) 20 →+70 °C Temperature limit stored (IEC 68.1.14)	Max. resistance of cold probes	1500 Ω
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Voltage-dependent drift -2 %	Repetition accuracy with constant parameters	± 0.5 %
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Max. breaking current 8 A AC Max. breaking voltage 440 V AC Min. breaking current 100 mA Maximum rate 360 operations / hour at full load Mechanical life (operations) 5 x 10 ⁶ Electrical life AC12 : 2000 VA - 10 ⁵ operations AC15 : Cos φ = 0,3 - 6000 operations DC13 : L/R = 300 ms - 6000 operations Reset time 5 500 ms Response time 5 500 ms Display on ETM2/ETM22 - power supply green LED Display on ETM2/ETM22 - Relay yellow LED Class of protection (IEC EN/60529) - Term. block IP 20 Protection class (IEC EN/60529) - Casing IP 50 Housing material Self-extinguishing Weight (g) 145 Terminal capacity 2x 1.5 mm² with ferrule 2x 2.5 mm² without ferrule Temperature limit operation (IEC 68.1.14) (°C) -20 →+60 °C Temperature limits stored (IEC 68.1.14) (°C) -30 →+70 °C	Output	AgNi 90/10
Max. breaking voltage 440 V AC Min. breaking current 100 mA Maximum rate 360 operations / hour at full load Mechanical life (operations) 5 x 10 ⁶ Electrical life AC12 : 2000 VA - 10 ⁵ operations AC15 : Cos φ = 0,3 - 6000 operations AC15 : Cos φ = 0,3 - 6000 operations DC13 : L/R = 300 ms - 6000 operations Reset time ≤ 500 ms Response time ≤ 500 ms Display on ETM2/ETM22 - power supply green LED Display on ETM2/ETM22 - Relay yellow LED Class of protection (IEC EN/60529) - Term. block IP 20 Protection class (IEC EN/60529) - Casing IP 50 Housing material Self-extinguishing Weight (g) 145 Terminal capacity 2 x 1.5 mm² with terrule 2 x 2.5 mm² without ferrule Temperature limit operation (IEC 68.1.14) (°C) -20 →+60 °C Temperature limits stored (IEC 68.1.1/2) (°C) -30 →+70 °C	Breaking capacity	2000 VA / 80 W
Min. breaking current100 mAMaximum rate360 operations / hour at full loadMechanical life (operations) 5×10^6 Electrical lifeAC12 : 2000 VA - 10^5 operations AC15 : Cos $\varphi = 0.3 - 6000$ operations DC13 : $UR = 300$ ms - 6000 operationsReset time≤ 500 msResponse time≤ 500 msDisplay on ETM2/ETM22 - power supplygreen LEDDisplay on ETM2/ETM22 - Relayyellow LEDClass of protection (IEC EN/60529) - Term. blockIP 20Protection class (IEC EN/60529) - CasingIP 50Housing materialSelf-extinguishingWeight (g)145Terminal capacity2 x 1.5 mm² with ferrule 2 x 2.5 mm² without ferruleTemperature limit operation (IEC 68.1.14) (°C)-20 → +60 °CTemperature limit stored (IEC 68.1.14) (°C)-30 → +70 °C	Max. breaking current	8 A AC
Maximum rate360 operations / hour at full loadMechanical life (operations) 5×10^6 Electrical lifeAC12 : 2000 VA - 10^5 operations AC15 : Cos φ = 0,3 - 6000 operations DC13 : L/R = 300 ms - 6000 operationsReset time ≤ 500 msResponse time ≤ 500 msDisplay on ETM2/ETM22 - power supplygreen LEDDisplay on ETM2/ETM22 - Relayyellow LEDClass of protection (IEC EN/60529) - Term. blockIP 20Protection class (IEC EN/60529) - CasingIP 50Housing materialSelf-extinguishingWeight (g)145Terminal capacity2 x 1.5 mm² with ferrule 2 x 2.5 mm² without ferruleTemperature limit operation (IEC 68.1.14) (°C)-20 →+60 °CTemperature limit stored (IEC 68.1.1/2) (°C)-30 →+70 °C	Max. breaking voltage	440 V AC
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Display on ETM2/ETM22 - Relay yellow LED Class of protection (IEC EN/60529) - Term. block IP 20 Protection class (IEC EN/60529) - Casing IP 50 Housing material Self-extinguishing Weight (g) 145 Terminal capacity $2 \times 1.5 \text{ mm}^2$ with ferrule $2 \times 2.5 \text{ mm}^2$ without ferrule Temperature limit operation (IEC 68.1.14) (°C) $-20 \rightarrow +60$ °C Temperature limits stored (IEC 68.1.1/2) (°C) $-30 \rightarrow +70$ °C	Response time	≤ 500 ms
Class of protection (IEC EN/60529) - Term. block IP 20 Protection class (IEC EN/60529) - Casing IP 50 Housing material Self-extinguishing Weight (g) 145 Terminal capacity $2 \times 1.5 \text{ mm}^2 \text{ with ferrule}$ $2 \times 2.5 \text{ mm}^2 \text{ without ferrule}$ $2 \times 2.5 \text{ mm}^2 \text{ without ferrule}$ Temperature limit operation (IEC 68.1.14) (°C) $-20 \rightarrow +60$ °C Temperature limits stored (IEC 68.1.1/2) (°C) $-30 \rightarrow +70$ °C		green LED
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Terminal capacity $ 2 \times 1.5 \text{ mm}^2 \text{ with ferrule} $ $ 2 \times 2.5 \text{ mm}^2 \text{ without ferrule} $ $ 2 \times 2.5 \text{ mm}^2 \text{ without ferrule} $ $ \text{Temperature limit operation (IEC 68.1.14) (°C)} \qquad -20 \rightarrow +60 °C $ $ \text{Temperature limits stored (IEC 68.1.1/2) (°C)} \qquad -30 \rightarrow +70 °C $	<u> </u>	
$2 \times 2.5 \text{ mm}^2 \text{ without ferrule}$ Temperature limit operation (IEC 68.1.14) (°C) $-20 \rightarrow +60 \text{ °C}$ Temperature limits stored (IEC 68.1.1/2) (°C) $-30 \rightarrow +70 \text{ °C}$	5 (6)	
Temperature limit operation (IEC 68.1.14) (°C) $-20 \rightarrow +60$ °C Temperature limits stored (IEC 68.1.1/2) (°C) $-30 \rightarrow +70$ °C	Terminal capacity	2 x 1.5 mm ² with ferrule
Temperature limits stored (IEC 68.1.1/2) (°C) -30 →+70 °C		2 x 2.5 mm ² without ferrule
	Temperature limit operation (IEC 68.1.14) (°C)	-20 →+60 °C
Relative humidity (no condensation) 95 % (+2 %; -3 %)	Temperature limits stored (IEC 68.1.1/2) (°C)	-30 →+70 °C
	Relative humidity (no condensation)	95 % (+2 % ; -3 %)

Principles





Operating principle

Control relay is used in combination with PTC thermistor probes (not supplied) for thermal protection of machines (motors, alternators, transformers, etc). The probes are placed at critical points on the equipment to be protected (normally inserted into the stator windings of motors). The resistance of the PTC probe has a positive temperature coefficient. As soon as the nominal trip temperature of the probe is exceeded, the resistance of the probe increases rapidly. Protection relay detects this and opens the power supply circuit of the protected equipment (eg motor) and the yellow fault indicator LED lights up (version ETM2/ETM22).

Test button

The ETM2/ETM22 has a TEST button which can be used to simulate a thermal overload in order to test the service condition of the relay.

Tripping

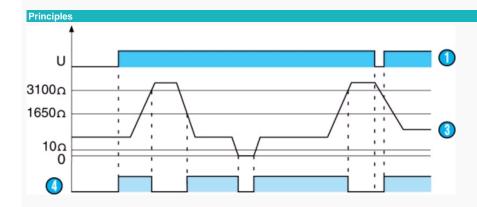
The relay drops out as soon as the protected equipment is subjected to a thermal overload, short-circuit or break in the probe measuring circuit.

Early warning of tripping

If the equipment being protected has another PTC proble with a lower nominal trip temperature, a second ETM/ETM2/ETM22 relay can be used to give early warning of tripping and thus prevent breaks in operation.

Control relay ETM/ETM2/ETM22 is automatically reset as soon as the temperature drops below the trip threshod (the yellow fault indicator LED goes out).

Nº	Legend	
•	Unit power-up	
②	Resistance between terminals T1 and T2	
③	Output relay	

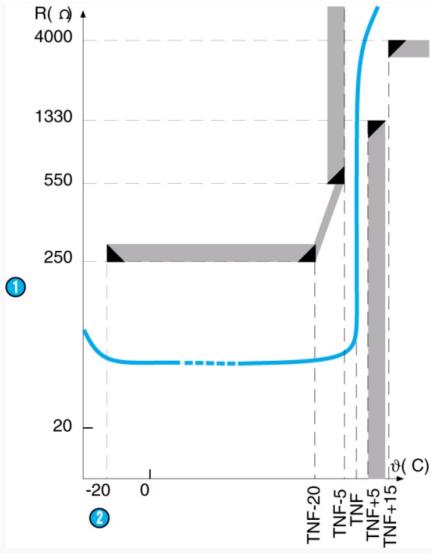


The relay is reset either using the RESET pushbutton on the front face or by opening the external contact S2 (remote reset), or by cutting the auxiliary power supply (terminals A1 - A2). If the auxiliary power is cut for a period of time greater than the reset time (500 ms), the relay is reactivated if the proble detects a normal temperature when the power supply voltage is restored.

Nº	Legend
1	Unit power-up
②	Latching contact
3	Resistance between terminals T1 and T2
•	Output relay

Principles

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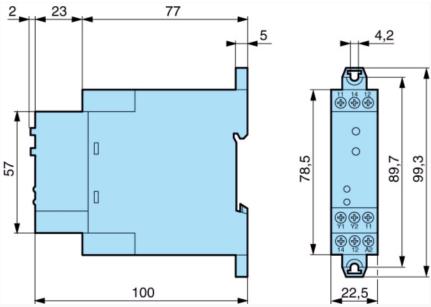
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Nº	Legend
0	Resistance R (Ω)
•	Nominal temperature Tripping (°C)

Dimensions (mm)

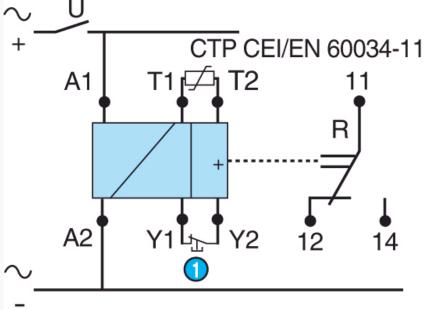
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Conne ETM2

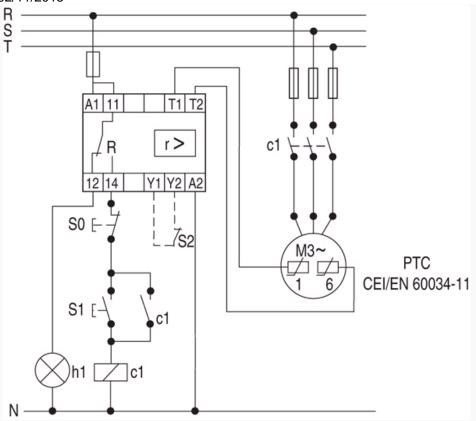




Nº	Legend
0	S2 : fault memory
	A1 - A2 : supply voltage
	11 - 12 - 14 : output relay
	T1 -T2 : external PTC probe
	Y1 - Y2 : remote reset contact

Connections

02/11/2015 www.crouzet.com



Legend	
*** TRADUCTION MANQUANTE ***	

Connections CA 84874022

