

- › **MAR1**
- › **Timers**
- › **DIN rail mount**
- › **17.5 mm - 1 Relay 8A**

- › Multi-function or mono-function
- › Multi-range
- › Multi-voltage
- › Screw or spring terminals
- › LED status indicator (relay version)
- › Possibility of external load connection in parallel to the control input
- › 3-wire PNP sensor compatible



Specifications						
Functions	Timing	Output	Nominal rating	Connections	Supply voltage	Code
A - At	0,1 s → 100 h	1 changeover relay	8 A	Screw terminals	24 V DC / 24 → 240 V AC	88827115

Timing	
Timing ranges (7 ranges)	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
Repetition accuracy with constant parameters	± 0.5% (IEC/EN 61812-1)
Drift Temperature	± 0,05% / °C
Drift Voltage	± 0,2% / V
Display accuracy according to IEC/EN 61812-1	± 10% / 25 °C
Immunity from micro power cuts : typical	< 10 ms
Minimum pulse duration typically (relay version)	30 ms
Minimum pulse duration typically (solid state version)	50 ms
Minimum pulse duration typically (relay version under load)	100 ms
Maximum reset time by de-energisation typically (relay version)	120 ms
Maximum reset time by de-energisation typically (solid state version)	350 ms

Supply	
Multi-voltage power supply	Depending on version
Frequency (Hz)	50 / 60
Operating factor	100%
Operating range	85 → 110% Un 85 → 120% Un for 12 V AC / DC
Max. absorbed power	32 VA (240 VAC) 1,5 W (240 VDC) 0,6 W (24 VDC) 0,7 VA (12 VAC) 0,7 W (12 VDC)

Output specification	
Rated power	2000 VA/80 W

Output specification	
Maximum breaking current	8 AAC 250 VAC resistive 8 ADC 30 VDC resistive
Minimum breaking current	10 mA / 5 VDC
Voltage breaking capacity	250 VAC / 8 AAC resistive 250 VDC / 0,3 A resistive
Electrical life (operations)	10 <sup>5</sup> 8 A 250 VAC resistive
Mechanical life (operations)	10 x 10 <sup>6</sup>
Breakdown voltage acc. to IEC/EN 61812-1	2,5 kV / 1 min / 1 mA / 50 Hz
Impulse voltage acc. to IEC/EN 60664-1, IEC/EN 61812-1	5 kV wave 1.2 / 50 µs
1 or 2 changeover relays, AgNi (cadmium-free)	1 C/O
General characteristics	
Conformity to standards	IEC/EN 61812-1 IEC/EN 61000-6-1 IEC/EN 61000-6-2 IEC/EN 61000-6-3 IEC/EN 61000-6-4
Certifications	CE, UL, cUL, CSA, GL
Temperature limits use (°C)	-20 →+60
Temperature limits stored (°C)	-30 →+60
Installation category (acc. to IEC/EN 60664-1)	Voltage surge category III
Creepage distance and clearance acc. to IEC/EN 60664-1	4 kV / 3 mm
Protection (IEC/EN 60529)	IP20 IP40
Degree of protection acc. to IEC/EN 60529 Front face	IP50
Vibration resistance acc. to IEC/EN 60068-2-6	20 m/s <sup>2</sup> 10 Hz →150 Hz
Relative humidity no condensation acc. to IEC/EN 60068-2-30	93 % non-condensing
Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC/EN 61000-4-2	Level III (Air 8 kV / Contact 6 kV)
Immunity to radiated, radio-frequency, electromagnetic field acc. IEC/EN 61000-4-3	Level I (1 V/m : 2,0 G Hz →2,7 G Hz) Level II (3 V/m : 1,4 G Hz →2,0 G Hz) Level III (10 V/m : 80 M Hz →1 G Hz)
Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4	Level III (direct 2 kV / Capacitive coupling clamp 1 kV)
Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5	Level III (2 kV / common mode 2 kV/residual current mode 1 kV)
Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6	Level III (10V rms : 0.15 M Hz to 80 M Hz)
Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11	0% residual voltage, 1 cycle 70% residual voltage, 25/30 cycles
Mains-borne and radiated emissions acc. to EN 55022 (CISPR22), EN55011 (CISPR11)	Class B
Fixing : Symmetrical DIN rail	35 mm
Terminal capacity Single-wire without ferrule	1 x 0,5 →3,3 mm <sup>2</sup> (AWG 20 →AWG 12) 2 x 0,5 →2,5 mm <sup>2</sup> (AWG 20 →AWG 14)
Terminal capacity Multi-wire with ferrule	1 x 0,5 →2,5 mm <sup>2</sup> (AWG 20 →AWG 14) 2 x 0,5 →1,5 mm <sup>2</sup> (AWG 20 →AWG 16)
Housing material	Self-extinguishing
Shock test IEC/EN 60068-2-27	15 g - 11 ms
Short interruption on power line acc to IEC/EN 61000-4-11	0% residual voltage, 250/300 cycles
Spring terminals, 2 terminals per connection point - flexible wire	2 x 0,5 →1,5 mm <sup>2</sup> (AWG 20 →AWG 16)
Spring terminals, 2 terminals per connection point - rigid wire	2 x 0,5 →1,5 mm <sup>2</sup> (AWG 20 →AWG 16)

General characteristics	
Weight : casing 17,5 mm	88827105 (MUR1) : 63 g 88827115 (MAR1) : 63 g 88827125 (MBR1) : 63 g 88827135 (MCR1) : 62 g 88827145 (MHR1) : 63 g 88827150 (MLR4) : 63 g 88827155 (MLR1) : 64 g 88827100 (MUR4) : 62 g 88827103 (MUR3) : 66 g 88827503 (MURc3) : 59 g 88827150 (MLR4) : 63 g 88827185 (MXR1) : 63 g 88827004 (MUS2) : 55 g 88827014 (MAS5) : 53 g 88827044 (MHS2) : 53 g 88827054 (MLS2) : 56 g
Insulation resistance according to IEC/EN 60664-1	100 MOhm(s) (500 V DC)

Dimensions	

Curves	
Function A Delay on energisation 1 relay	
Function At Timing on energisation with memory 1 relay	

Connections	
1 changeover relay output	

Connections

The technical drawing shows the internal wiring of a Crouzet timer. It includes a terminal block with terminals labeled A1, 15, and Y1. The drawing also shows the internal wiring connections for terminals U, T, R, Y1, and A2. The terminal block is labeled with A1, 15, Y1, 18, 16, and A2. The drawing includes a barcode with the number MAR1 88 827 115 and the text 00000. It also features various certification marks including CE, UL, and SF. The text 'Made in Indonesia' is present. The drawing includes a torque table and a note 'Use copper conductors only'. The torque table is as follows:

Terminal	Terminal	Terminal
U, T, R	Y1	A2
0.8 - 2.5mm <sup>2</sup>	0.8 - 2.5mm <sup>2</sup>	0.8 - 2.5mm <sup>2</sup>
0.5 - 1.5mm <sup>2</sup>	0.5 - 1.5mm <sup>2</sup>	0.5 - 1.5mm <sup>2</sup>
0.2 - 0.5mm <sup>2</sup>	0.2 - 0.5mm <sup>2</sup>	0.2 - 0.5mm <sup>2</sup>

The drawing also includes a note 'Use copper conductors only' and a torque table with the following values:

Terminal	Terminal	Terminal
U, T, R	Y1	A2
0.8 - 2.5mm <sup>2</sup>	0.8 - 2.5mm <sup>2</sup>	0.8 - 2.5mm <sup>2</sup>
0.5 - 1.5mm <sup>2</sup>	0.5 - 1.5mm <sup>2</sup>	0.5 - 1.5mm <sup>2</sup>
0.2 - 0.5mm <sup>2</sup>	0.2 - 0.5mm <sup>2</sup>	0.2 - 0.5mm <sup>2</sup>