

› Monitoring Relays

Voltage Control Relays

Voltage (under and over) detection with memory function

- › Automatic recognition of AC/DC
- › Overvoltage or undervoltage control with Selectable latching (memory) function
- › Control of AC and DC voltage
- › True RMS measurement
- › LED status indication



MUS80



MUS260

Selection guide					
Type	Function	Measuring range	Output	Power Supply	Part-Numbers
MUS80	Over and Undervoltage / Selectable latching memory function	20 → 80 V $\overline{\sim}$	1 x 5 A (changeover)	24 → 48 V $\overline{\sim}$	84872141
MUS260	Over and Undervoltage / Selectable latching memory function	65 → 260 V $\overline{\sim}$	1 x 5 A (changeover)	110 → 240 V $\overline{\sim}$	84872142
			MUS80	MUS260	

Timing

Timing	0.1 → 10 s (0, +10 %)
Repetition accuracy with constant parameters (according to IEC/EN 60255-1)	± 0.5 %
Power ON delay	500 ms in AC / 1 s in DC
Reset time max (ms)	1500

Supply

Voltage type for actuating	AC/DC	
Rated control supply voltage Un at AC	24 → 48 V	110 → 240 V
AC supply voltage frequency 50/60 HZ	± 10 %	
Rated control supply voltage Un at DC	24-48 V	110-240 V
Operating range	15 → 100 V $\overline{\sim}$	50 → 270 V $\overline{\sim}$
Polarity with DC voltage	Yes	
Galvanic isolation of power supply/Input circuit	No	
Galvanic isolation of power supply/Output circuit	Yes	
Galvanic isolation of Input circuit/Output circuit	Yes	
Immunity from micro power cuts: typical	10 ms	
Maximum Power consumption at Un	AC: 2 VA DC: 0.5 W	AC: 4 VA DC: 1 W

Insulation

Rated Insulation voltage (according to IEC/EN 60664-1)	250 V
Insulation coordination (according to IEC/EN 60664-1)	Overvoltage category III; pollution degree 3
Insulation resistance between supply and Input circuit (according to IEC/EN 60664-1 and IEC/EN 60255-27)	> 1 M Ω (500 V $\overline{\sim}$)

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Description:

Crouzet's Monitoring Relays are essential for enhancing the safety and efficiency of electrical systems by providing continuous and precise monitoring. These relays help in detecting and alerting users to abnormalities such as overvoltage, undervoltage, phase failure, and phase sequence errors. The relays are designed to be compact and easy to use, making them suitable for an easy integration into various electrical panels without taking up excessive space.

For more information about **Monitoring Relays** please visit www.crouzet.com

	MUS80	MUS260
Dielectric strength (according to IEC/EN 60664-1 and IEC/EN 60255-27)	2 kV / 1 min / 1 mA / 50 Hz	
Impulse voltage (according to IEC/EN 60664-1 and IEC/EN 60255-27)	4 kV wave 1.2 / 50 µs	
Input and measuring specifications		
Measurement range	20 → 80 V~	65 → 260 V~
Display accuracy (according to IEC/EN 60255-1)	± 10 % of full scale	
Measuring error with drift temperature	0.05 %/°C	
Measuring error with drift voltage	< 1 % across the whole range	
Repetition accuracy with constant parameters (according to IEC/EN 60255-1)	± 0.5 %	
Voltage threshold adjustment	20 → 80 V~	65 → 260 V~
Frequency of measured signal	0 Hz, 50...60 Hz	
Max. measuring cycle time	250 ms / True RMS measurement	
Voltage threshold hysteresis	5 → 20 % of threshold	
Output specifications		
Maximum switching power (resistive)	2500 VA / 300 W	
Maximum rate (at max switching power)	360 operations/hour at full load	
Maximum breaking current	10 AAC 250 V~ resistive 10 ADC 30 V--- resistive	
Minimum breaking current	10 mA / 5 V---	
Operating categories (according to IEC/EN 60947-5-1 and IEC/EN 60947-5-2)	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14	
Nominal rating	5 A	
Voltage breaking capacity (according to IEC/EN 60255-1)	250 V~ / 8 AAC resistive 125 V--- / 0.3 A resistive	
Electrical life (operations)	1 x 10 ⁵	
Mechanical life (operations)	1 x 10 ⁷	
1 or 2 changeover relays, AgNi (cadmium-free)	1 C/O	
Functions		
Automatic recognition of AC/DC	True	
Overvoltage and undervoltage control	False	
Overvoltage or undervoltage control Selectable latching (memory) function	True	
Control of AC and DC voltages	True	
General characteristics		
Temperature limits use (°C) (according to IEC/EN 60068-2)	-20 → +50	
Temperature limits stored (°C) (according to IEC/EN 60068-2)	-40 → +70	
MTBF in hours (according to IEC/TR 62380)	1437392.70	
MTTF (according to IEC/TR 62380)	160 years	
Led status indicator	▪ Un: Green LED (power on) ▪ R: Yellow LED (relay status ON) ▪ OFF LED (under/overvoltage) ▪ Flashing LED during time delay ▪ Un, R: Flashing LED (Position error) ▪ No Tt LED	
Creepage distance and clearance (according to IEC/EN 60664-1)	▪ 4 kV / 9.4 mm ▪ Pollution degree 3	
IP degree of protection Terminal block (according to IEC/EN 60529)	IP20	
IP degree of protection Housing (according to IEC/EN 60529)	IP30	
IP degree of protection Front face (according to IEC/EN 60529)	IP50	

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Vibration resistance (according to IEC/EN 60255-21-1)	<ul style="list-style-type: none"> ▪ 20 m/s² ▪ 10 Hz → 150 Hz 	
Relative humidity no condensation (according to IEC/EN 60068-2-30)	2 x 24 hr cycle 95 % RH max. without condensation 55 °C	
Electromagnetic compatibility - Immunity to electrostatic discharges (according to IEC/EN 61000-4-2)	Level III (Air 8 kV / Contact 6 kV)	
Immunity to radiated, radio-frequency, electromagnetic field (according to IEC/EN 61000-4-3)	<ul style="list-style-type: none"> ▪ Level I (1 V/m: 2.0 GHz → 2.7 GHz) ▪ Level II (3 V/m: 1.4 GHz → 2.0 GHz) ▪ Level III (10 V/m: 80 MHz → 1 GHz) 	
Immunity to rapid transient bursts (according to IEC/EN 61000-4-4)	Level III (direct 2 kV / Capacitive coupling clamp 1 kV)	
Immunity to shock waves on power supply (according 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 (according to IEC/EN 61000-4-6)	Level III (10V rms: 0.15 MHz → 80 MHz)	
Immunity to voltage dips and breaks (according to IEC/EN 61000-4-11)	<ul style="list-style-type: none"> ▪ 0 % residual voltage, 1 cycle ▪ 70 % residual voltage, 25/30 cycles 	
Mains-borne and radiated emissions (according to EN55032 (CISPR22), EN55011 (CISPR11))	Class B	
Fixing: Symmetrical DIN rail (according to IEC/EN 60715)	35 mm	
Mounting position	All positions	
Drop to concrete floor (according to IEC/EN IEC 60068-2-31)	High: 1m	
Rigid connecting capacity without ferrule	<ul style="list-style-type: none"> ▪ 1 x 4² - 2 x 2.5² mm² ▪ 1 x AWG11 - 2 x AWG14 	
Flexible connecting capacity with ferrule	<ul style="list-style-type: none"> ▪ 1 x 2.5² - 2 x 1.5² mm² ▪ 1 x AWG14 - 2 x AWG16 	
Tightening torque (according to IEC 60947-1)	0.5...0.6N.m	
Housing material (according to IEC/EN 60695-2-11)	<ul style="list-style-type: none"> ▪ Self-extinguishing ▪ Incandescent wire test 	
Shock and bump tests (according to IEC/EN 60255-21-2)	15 g - 11 ms	
Short interruption on power line (according to IEC/EN 61000-4-11)	0% residual voltage, 250/300 cycles	
Delivery: open terminals	True	
Type of electric connection	Screw connection	

Outline Dimensions

Depth (mm)	69
Height (mm)	90
Weight (g)	70.5
Width (mm) according to DIN 43880	17.5

International Directives & Conformity Certification

RoHS 2015/863/UE	Yes
REACH regulation N°1907/2006/CE	Yes
UK REACH regulation 2023 N°722	Yes
LVD 2014/35/UE	Yes
Directive 2012/19/EU	Yes
European Directive 2005/20/CE	Yes
ISO 14001: 2015	Yes
Certification CE	Yes
Certification UL	Yes
Recycling notice	Yes
Certification UK CA	Yes
Certification CCC	Yes

Principles

MUS voltage control relays monitor single-phase AC or DC network voltages.

These products monitor their own supply voltage.

MUS relays allow the user to choose between two operating modes:

- Under/overvoltage
- With or without fault latching

An adjustable time delay, on threshold crossing, provides immunity from transient phenomena, thus preventing spurious triggering of the output relay.

Operating principles

MUS80-MUS260 - Under/Overvoltage controller

The under or overvoltage threshold value is set by a graduated potentiometer by reading the U_n scale to be monitored directly.

The hysteresis is set by a graduated potentiometer from 5 to 20 % of the preset threshold.

The hysteresis value cannot be higher than the extremes of the measurement range.

In overvoltage mode, if the controlled voltage exceeds the preset threshold for longer than the time set on the front face (0.1 to 10 s), the output relay opens and LED R is extinguished.

During the time delay, this LED flashes.

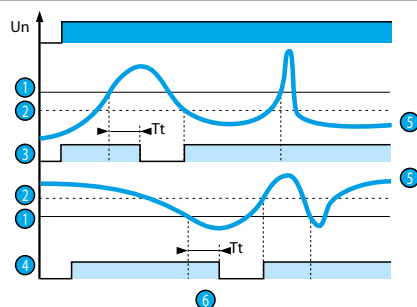
Once the voltage falls below the threshold value minus the hysteresis, the relay closes instantaneously.

In undervoltage mode, if the controlled voltage falls below the preset threshold for longer than the time set on the front face (0.1 to 10 s), the output relay opens and LED R is extinguished.

During the time delay, this LED flashes.

Once the voltage rises above the threshold value plus the hysteresis, the relay closes instantaneously.

MUS - With Memory OFF

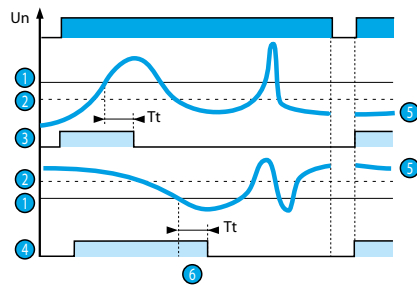


- ① Threshold
- ② Hysteresis
- ③ Overvoltage function relay
- ④ Undervoltage underload function relay
- ⑤ Controlled signal
- ⑥ Delay on threshold crossing (T_t)

MUS - Under/Overvoltage controller

MUS - With Memory ON

If "with memory" mode has been selected, the relay opens and stays in this position when threshold crossing is detected. The power supply must be disconnected to reset the product.

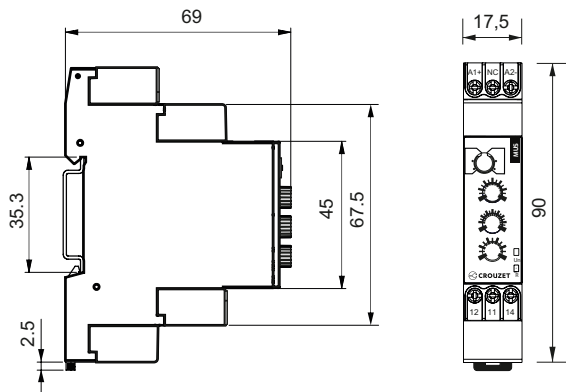


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Product Dimensions

Front and Side

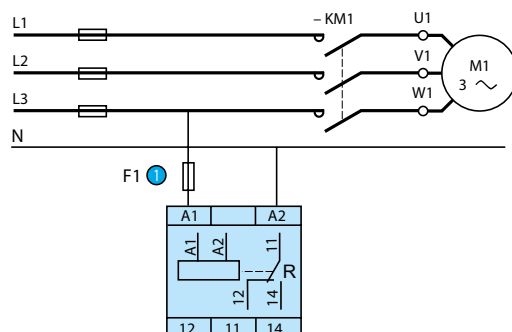
MUS80-MUS260



Electronic & Wiring Diagrams

Connections

MUS80-MUS260



- ① 1 A fast-blow fuse or cut-out

Warning:

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