# 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					
Туре	Function	Measuring range	Output	Power Supply	Part-Numbers	
MUS80	Over and Undervoltage / Selectable latching memory function	$20 \rightarrow 80 \ V \overline{\sim}$	1 x 5 A (changeover)	$24 \rightarrow 48 \ V \overline{\sim}$	84872141	
MUS260	Over and Undervoltage / Selectable latching memory function	$65 \rightarrow 260 \ V \overline{\sim}$	1 x 5 A (changeover)	110 → 240 V≂	84872142	
		MUS80		MUS260		
Timing						
Timing		$0.1 \rightarrow 10$	$0.1 \rightarrow 10 \text{ s} (0, \pm 10 \%)$			
	accuracy with constant parameters to IEC/EN 60255-1)	± 0.5 %	± 0.5 %			
Power ON	delay	500 ms i	500 ms in AC / 1 s in DC			
Reset time	max (ms)	1500	1500			
Supply						
Voltage typ	be for actuating	AC/DC	AC/DC			
Rated control supply voltage Un at AC		$24 \rightarrow 48$	$24 \rightarrow 48 \text{ V} \qquad \qquad 110 \rightarrow 240 \text{ V}$			
AC supply voltage frequency 50/60 HZ		± 10 %	± 10 %			
Rated control supply voltage Un at DC		24-48 V	24-48 V		110-240 V	
Operating	range	15 →100	15 →100 V≂ 50 →27		$\overline{}$	
Polarity wit	h DC voltage	Yes	Yes			
Galvanic is	solation of power supply/Input circuit	No	No			
Galvanic is	solation of power supply/Output circuit	Yes	Yes			
Galvanic is	solation of Input circuit/Output circuit	Yes	Yes			
Immunity f	rom micro power cuts: typical	10 ms	10 ms			
Maximum Power consumption at Un		AC: 2 VA		AC: 4 VA		
		DC: 0.5	DC: 0.5 W		DC: 1 W	
Insulation						
	lation voltage (according to IEC/EN 60664-1)	250 V				
Insulation coordination (according to IEC/EN 60664-1)		Overvolt	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 MΩ (500 V)				

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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	2 kV / 1 min / 1 mA / 50 Hz		
(according to IEC/EN 60664-1 and IEC/EN 60255-27)			
Impulse voltage	4 kV		
(according to IEC/EN 60664-1 and IEC/EN 60255-27)	wave 1.2 / 50 µs		
Input and measuring specifications			
Measurement range	$20 \rightarrow 80 \ V \overline{\sim}$	$65 \rightarrow 260 \ V \overline{\sim}$	
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	± 0.5 %		
(according to IEC/EN 60255-1)			
Voltage threshold adjustment	$20 \rightarrow 80 \ V \overline{\sim}$	$65 \rightarrow 260 \ V \overline{\sim}$	
Frequency of measured signal	0 Hz, 5060 Hz		
Max. measuring cycle time	250 ms / True RMS measurement		
Voltage threshold hysteresis	$5 \rightarrow 20$ % 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	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14		
(according to IEC/EN 60947-5-1 and IEC/EN 60947-5-2)			
Nominal rating	5 A		
Voltage breaking capacity (according to IEC/EN 60255-1)	250 V $\sim$ / 8 AAC resistive		
	125 V / 0.3 A resistive		
Electrical life (operations)	1 x 10 <sup>5</sup>		
Mechanical life (operations)	1 x 10 <sup>7</sup>		
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	True		
Selectable latching (memory) function			
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	<ul> <li>Un: Green LED (power on)</li> <li>R: Yellow LED (relay status ON)</li> <li>OFF LED (under/overvoltage)</li> <li>Flashing LED during time delay</li> <li>Un, R: Flashing LED (Position e</li> <li>No Tt LED</li> </ul>		
Creepage distance and clearance (according to IEC/EN 60664-1)	<ul> <li>4 kV / 9.4 mm</li> <li>Pollution degree 3</li> </ul>		
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		

Vbraton resistance (according to IEC/EN 60255-21-1)         -20 mbs <sup>2</sup> Relative humidity no condensation (according to IEC/EN 60086-23-20)         2x AP roycle 59 % RN max, without condensation 55 °C           Electonagnetic compatibility - Immunity to dectostatic discharge (according to IEC/EN 61000-4.2)         Level II (Vim: 2.0 GHz2.7 GHz)           Immunity to radiated, radia-frequency, electronagnetic field (according to IEC/EN 61000-4.4)         Level II (Vim: 2.0 GHz2.7 GHz)           Immunity to radia transient bursts (according to IEC/EN 61000-4.4)         Level II (Vim: 2.0 GHz2.7 GHz)           Immunity to radia transient bursts (according to IEC/EN 61000-4.4)         Level II (Vim: 2.0 GHz2.0 GHz)           (according to IEC/EN 61000-4.5)         Level II (Vim: 2.0 GHz2.0 GHz)           (according to IEC/EN 61000-4.5)         Level II (Vim: 0.15 MHz1 GHz)           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles           (according to IEC/EN 61000-4.5)         Vis realidual voltage, 2.500 cycles <th></th> <th>MUS80 MUS260</th>		MUS80 MUS260
- 10 Hz - 150 Hz           Relative humidity no condensation (according to IEC/EN 80089-2-30)         2x 24 hr yole 65 % H max. without condensation 55 °C           Electromagnetic compatibility - immunity to electrostatia discharges         (according to IEC/EN 81000-4-2)           Immunity for radiust, radio-fequency, electromagnetic field         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 81000-4-3)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to EC/EN 81000-4-3)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 81000-4-3)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 81000-4-3)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 81000-4-3)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 8100-4-10)         - Level II (1 Vim 2.0 GHz2.7 GHz)           (according to IEC/EN 8100-4-5)         - Level II (1 Vim 2.0 GHz2.7 GHz)           Immunity to valtage dips and breaks         - 0 % residual voltage, 1 cycle           (according to IEC/EN 8100-4-10)         - 2 N Matalau voltage, 25,00 cycles           Main-borne and radiated emissions         - 0 % residual voltage, 25,00 cycles           Main-borne and radiated emissions         - 0 % residual voltage, 25,00 cycles           Main-borne and radiated emissions         - 1 X AVG 14 - 2 X AVG 14           Relactore and radiated emissions	Vibration resistance (according to IEC/EN 60255-21-1)	■ 20 m/s <sup>2</sup>
Electomagnetic compatibility - Immunity to electrostatic discharges (according to IEC/EN 61000-4-2) Immunity to radiate, radio-frequency, electromagnetic field (according to IEC/EN 61000-4-3) · Level II (1 Vim: 20 GHz2.7 GHz) · To % residual voltage dps and trans · Gater drans demands · Level II (1 Vim: 20 GHz2.7 GHz) · Level II (1 Vim: 20 GHz2.7 GHz) · Level II (1 Vim: 20 GHz2.7 GHz) · Level drans demands · Gater drans		
(according to IEC/EN 61000-4:2)         - Level II (V Vm: 2.0 GHz2.7 GHz)           (according to IEC/EN 61000-4:3)         - Level II (V Vm: 3.0 GHz2.7 GHz)           (according to IEC/EN 61000-4:3)         - Level II (V Vm: 3.0 MHz2.0 GHz)           Immunity to abdx waves on power supply         Level II (V Vm: 3.0 MHz2.0 GHz)           Immunity to abdx waves on power supply         Level II (V Vm: 0.15 MHZ80 MHz)           (according to IEC/EN 61000-4:5)         Immunity to abdx waves on power supply           (according to IEC/EN 61000-4:1)         -0 % residual uvitage, 1 cycle           (according to IEC/EN 61000-4:1)         -0 % residual uvitage, 2 s/d0 cycles           (according to IEC/EN 61000-4:1)         -0 % residual uvitage, 2 s/d0 cycles           (according to IEC/EN 61000-4:1)         -0 % residual uvitage, 2 s/d0 cycles           (according to IEC/EN 6100-4:1)         -1 X 4* -2 X 2.5" mm²           (according to IEC/EN 6006-2:31)         High: fm           Ruigd connecting capacity without ferrule         -1 X 4* -2 X 2.5" mm²           -1 X AWG14 - 2 X AWG16         -1 X AWG14 - 2 X AWG16           Tightening torque (according to IEC/EN 6025-21-2)         IS g-11 ms           Shock and bump tests (according to IEC/EN 6025-21-2)         IS g-11 ms           Short interruption on ower line (according to IEC/EN 6025-21-2)         IS g-11 ms           Short interruption on	Relative humidity no condensation (according to IEC/EN 60068-2-30)	2 x 24 hr cycle 95 % RH max. without condensation 55 °C
(according to IEC/EN 61000-4-3)         • Level III (13 V/m: 14 GHz20 GHz)           Immunity to rapid transient bursts (according to IEC/EN 61000-44)         Level III (10 V/m: 0.15 MHz1 GHz)           Immunity to shock waves on power supply         Level III (10 V/m: 0.15 MHz1 GHz)           Immunity to shock waves on power supply         Level III (10 V/m: 0.15 MHz1 GHz)           (according to IEC/EN 61000-4-5)         Immunity to shock waves on power supply           (according to IEC/EN 61000-4-5)         Immunity to shock waves on power supply           (according to IEC/EN 61000-4-5)         Immunity to rapid transient bursts (according to IEC/EN 61000-4-11)           (according to IEC/EN 61000-4-11)         - 0 % residual voltage, 1 cycle           (according to IEC/EN 61000-4-11)         - 70 % residual voltage, 25/30 cycles           Mains-borne and radide demissions         Gas B           (according to IEC/EN IEC 60068-2-11)         1 f ghz: tm           Rigd connecting capacity with ferrule         - 1 x 4/ - 2 x 2.5 mm²           To pot occording to IEC/EN 1600-4-11)         9 Self-extinguishing           Housing material (according to IEC/EN 6065-2-11)         - Self-extinguishing           Not interruption on power line (according to IEC/EN 6065-2-11)         - Self-extinguishing           Not interruption on power line (according to IEC/EN 6005-2-11)         - Self-extinguishing           Not interruption on p		Level III (Air 8 kV / Contact 6 kV)
• Level III (10 V/m: 80 MHz1 GHz)           Immunity to rapid transient bursts (according to IEC/EN 61000-4-4)         Level III (2 kV / common mode 2 kV / residual current mode 1 kV)           (according to IEC/EN 61000-4-5)         Level III (2 kV / common mode 2 kV / residual current mode 1 kV)           (according to IEC/EN 61000-4-5)         Level III (2 kV / common mode 2 kV / residual current mode 1 kV)           (according to IEC/EN 61000-4-5)         Level III (10V rms: 0.15 MHz 80 MHz)           (according to IEC/EN 61000-4-1)         70 % residual voltage, 1 cycle           (according to IEC/EN 61000-4-1)         70 % residual voltage, 2503 cycles           Minar-borne and radiated emissions         Class B           (according to IEC/EN 61001 (CISPR22), ENSO11 (CISPR21)         Sift residual voltage, 2503 cycles           Minurito position         All positions         Class B           Drop to concrete floor (according to IEC/EN 16C 6008-2-31)         High: 'm         Rigid connacting capacity with forrule         1 x 2 x 2.5 <sup>2</sup> mm²           Tightening torque (according to IEC/EN 16C 60085-2-11)         1 x 4VG14 - 2 x A/WG14         1 x 4WG14           Bout interuption on power line (according to IEC/EN 6025-2-12)         1 S g - 11 m.         1 s d - 2 x 2.5 <sup>2</sup> mm²           Tightening torque (according to IEC/EN 6025-2-11)         Self extring using a string a	Immunity to radiated, radio-frequency, electromagnetic field	<ul> <li>Level I (1 V/m: 2.0 GHz →2.7 GHz)</li> </ul>
Immunity to rapid transient bursts (according to IEC/EN 61000-44)         Level III (direct 2 kV / Capacitive coupling damp 1 kV)           Immunity to shock waves on power supply         Level III (direct 2 kV / Common mode 2 kV / residual current mode 1 kV)           (according to IEC/EN 61000-45)         Immunity to radio frequency in common mode         Level III (10V ms: 0.15 MHz 80 MHz)           (according to IEC/EN 61000-41)         -0 % residual voltage, 1 cycle         (according to IEC/EN 61000-41)           Mains-borne and radiated emissions         Class B         (according to IEC/EN 61000-41)           Mains-borne and radiated emissions         Class B         (according to IEC/EN 61000-41)           Mains-borne and radiated emissions         Class B         (according to IEC/EN IEC/EN IEC 60068-2.31)           Mounting position         All positions         Direc/EN 61000-410           Prop to concrete floor (according to IEC/EN IEC 60068-2.31)         High: 1m           Rigid connecting capacity with ferrule         -1 x 47 - 2 x 2.57 mm²           -1 x AVOI14 - 2 x AVOI16         -1 x XVOI14 - 2 x AVOI16           Tiphening torque (according to IEC/EN 6025-21-1)         -5 Gelf-extinguishing           -1 radiated emissions         Class B           Delivery: open terminals         Tue           Pays of electric connection         Oscilla voltage, 250/300 cycles           Delivery: open terminals	(according to IEC/EN 61000-4-3)	■ Level II (3 V/m: 1.4 GHz →2.0 GHz)
Immunity to shock waves on power supply         Level III (2 kV / common mode 2 kV / residual current mode 1 kV)           (according to EC/EN 61000-4-6)         Immunity to add frequency in common mode           Immunity to voltage dips and breaks         • 0 % residual voltage, 1 cycle           (according to EC/EN 61000-4-6)         - 70 % residual voltage, 1 cycle           (according to EC/EN 51000-4-11)         • 70 % residual voltage, 1 cycle           (according to EC/EN 51000-4-11)         • 70 % residual voltage, 1 cycle           (according to EC/EN 51000-4-11)         • 70 % residual voltage, 1 cycle           (according to EC/EN 51000-4-11)         • 70 % residual voltage, 25/30 cycles           Mains-borne and radiated emissions         Class B           (according to EC/EN EC/EN EC/EN 600715)         35 mm           Mounting position         All positions           Drop to concrete floor (according to EC/EN EC/EN 60068-2-31)         High: 1m           Rigid connecting capacity with errule         • 1 x 4 × 2 x 2 x 1.5° mm²           • 1 x AWG31 • 2 x AWG14         • 1 x AWG31 • 2 x AWG16           Tightening torque (according to EC/EN 60055-21-1)         • 50.6N m           Housing material (according to EC/EN 60055-21-2)         15 g - 11 ms           Short interruption on power line (according to EC/EN 6100-4-11)         0% residual voltage, 250/300 cycles           Delivey: open termi		
(according to IEC/EN 61000-4-5)Level II (10V ms: 0.15 MHz -> 60 MHz)Immunity to voltage dips and breaks-0 % residual voltage, 1 cycle(according to IEC/EN 61000-4-11)-70 % residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to EC/EN 61000-4-11)-70 % residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to EC/EN 61000-4-11)-70 % residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to EC/EN 61000-4-11)-70 % residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to EC/EN 60715)35 mnMounting positionAll positionsDrop to concretel floor (according to IEC/EN 6008-2-31)High: 1mRigid connecting capacity without ferrule-1 x 4 * - 2 x 2 .5 * nm²+1 x 4 * - 2 x 2 .5 * nm²+1 x 4 * - 2 x AWG16Tightening torque (according to IEC/EN 6008-2-11)-5 elf-extinguishing+1 x 4 * - 2 x AWG16-1 x 2 + x 4 × 2 x 2 * 1 × 1 × 1 × 1 × 2 × 1 × 1 × 1 × 1 × 2 × 1 × 1		
(according to IEC/EN 61000-4-6)··· 0% residual voltage, 1 cycle (according to IEC/EN 6100-4-11)·· 0% residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to IES/EN 6100-4-11)S mmMounting positionAll positionsMounting positionAll positionsDrop to concrete floor (according to IEC/EN IEC 60068-2-31)High: 1mRigid connecting capacity with our ferule:1 x 4 <sup>2</sup> - 2 x 5 <sup>5</sup> mm² ·1 x 4WG11 - 2 x AWG14Fiexble connecting capacity with ferule:1 x 2.5 <sup>5</sup> - 2 x 1.5 <sup>5</sup> mm² ·1 x AWG14 - 2 x AWG16Tightening torque (according to IEC/EN 60058-2-11):5 eafl-extinguishing ·1 x AWG14 - 2 x AWG16Tightening torque (according to IEC/EN 60058-2-12)15 eafl-extinguishing ·1 x AWG14 - 2 x AWG16Shock and bump tests (according to IEC/EN 60255-21-22)15 eafl-extinguishing ·1 reardescent wire testShock and bump tests (according to IEC/EN 60255-21-22)15 eafl-extinguishing ·1 reardescent wire testShock and bump tests (according to IEC/EN 60064-01)% residual voltage, 250/300 cyclesDeliver; open terminalsGrueDeliver; open terminalsScree connectionUting DuracionScree connectionUting Duracion9Veght (m)9Quita State (SCR)YesUting Concept (SCR)YesInternation N*1907/2005/CEYesUting Concept (SCR)YesUting Concept (SCR)YesUting Concept (SCR)YesUting Concept (SCR)YesUting Concept (SCR)YesStat		· · · · · · · · · · · · · · · · · · ·
(according to IEC/EN 8100-4-11)-70 % residual voltage, 25/30 cyclesMains-borne and radiated emissionsClass B(according to IEC/EN 60715)35 mmMounting positionAll positionsDrop to concrete floor (according to IEC/EN 160715)35 mmRigid connecting capacity without ferrule1 x 4" - 2 x 2.5" mm"Rigid connecting capacity without ferrule1 x 2.5" rmm"1 x XMG11 - 2 x AWG141 x 2.5" rmm"Filexible connecting capacity with ferrule1 x 2.5" rmm"1 x 2.5" runding to recording to IEC/EN 60695-211)050.6N.mHousing material (according to IEC/EN 60595-212)156-11 msShock and bump tests (according to IEC/EN 60255-21-2)159-11 msShock and bump tests (according to IEC/EN 600694-71)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueType of electric connectionScrew connectionOutine DimensionsCrew connectionUtine Dimensions90Weight (g)7.5With (mm) according to IEV/EN 60054)% sVeight (g)7.5With (mm) according to IEV/EN 60054)% sLivery (Livery (Live		Level III (10V rms: 0.15 MHz $\rightarrow$ 80 MHz)
Mains-borne and radiated emissions         Class B           (according to ENS5032 (CISPR22), ENS5011 (CISPR11)))         Fixing: Symmetrical DIN rail (according to IEC/EN 60715)         35 mm           Mounting position         All positions         Mounting positions         Minomition position         All positions           Drop to concrete floor (according to IEC/EN IEC 60068-2-31)         High: 1m         Rigid connecting capacity with out ferrule         1 x 4 <sup>2</sup> - 2 x 2.5 <sup>5</sup> mm <sup>2</sup> Fixible connecting capacity with ferrule         1 x 2.5 <sup>6</sup> - 2 x 1.5 <sup>5</sup> mm <sup>2</sup> 1 x AWG14           Fixible connecting capacity with ferrule         1 x 2.5 <sup>6</sup> - 2 x 1.5 <sup>5</sup> mm <sup>2</sup> 1 x AWG14           Fixible connecting to IEC/EN 60695-2-11)         0.506.N.m         Housing material (according to IEC/EN 60695-2-12)         15 g - 11 ms           Shock and bump tests (according to IEC/EN 60695-2-12)         15 g - 11 ms         Soff-extinguishing         Incandescent wire test           Shock and bump tests (according to IEC/EN 6025-21-2)         15 g - 11 ms         Soff-extinguishing         Incandescent wire test           Type of electric connection         Screw connection         Screw connection         Commontoget Scord/Sc		
(according to ENS5032 (CISPR22), ENS5011 (CISPR11))Fixing: Symmetrical DIN rall (according to IEC/EN 60715)35 mmMouting positionAll positionsDrop to concrete floor (according to IEC/EN IEC 60068-2-31)High: 1mRigid connecting capacity without ferrule1 x 4² - 2 x 25² mm² -1 x XWG14 - 2 x AWG14Fixible connecting capacity with ferrule1 x 2² - 2 x 1.5² mm² -1 x XWG14 - 2 x AWG16Tightening torque (according to IEC 60947-1)0.50.6N.mHousing material (according to IEC/EN 60695-2-11)Self-extinguishing -Incandescent wire testShock and bump tests (according to IEC/EN 6025-21-2)15 - 11 msShort Interruption on power line (according to IEC/EN 61000-4-11)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueType of electric connection69Vultine Dimensions70.5Utiling Informations70.5Widh (mm) according to IEN/ENCORDYesReACh regulation N°1907/2006/CEYesUK PEACh regulation N°1907/2006/CEYesUK PEACh regulation N°1907/2006/CEYesUN 2014/36/UEYesEuropean Directive 2005/20/CEYesEuropean Directive 2005/20/CEYesCertification CEYesCertification CEYesCertification CEYesCertification CEYesCertification CEYesCertification ULYesCertification VL CAYes	(according to IEC/EN 61000-4-11)	<ul> <li>70 % residual voltage, 25/30 cycles</li> </ul>
Fixing: Symmetrical DIN rail (according to IEC/EN 60715)36 mmMounting positionAll positionsDrop to concrete floor (according to IEC/EN IEC 60068-2-31)High: 1mRigid connecting capacity without ferrule1 x 4² - 2 x 25* mm² - 1 x AWG11 - 2 x AWG14Fiexble connecting capacity with ferrule1 x 25* - 2 x 1.5* mm² - 1 x AWG14 - 2 x AWG16Tightening torque (according to IEC 60947-1)0.56.0.mHousing material (according to IEC/EN 60695-2-11)- Self-extinguishing - Incandescent Wire testShock and bump tests (according to IEC/EN 60255-21-2)15 g - 11 msShoct interruption on power line (according to IEC/EN 60025-21-3)5 resu - runePilvery: open terminalsTrueType of electric connectionScrew connectionOutline Dimensions-Utine Dimensions-Weight (g)70.5Widt (mm) according to DIN 4388017.5International Directives & Conformity CertificationYeesREACh regulation N*1907/2006/CEYesUV 2014/36/UEYeesEuropean Directive 2005/20/CEYesUV 2014/36/UEYesCertification CEYesCertification CEYesCertification ULYesCertification ULYesCertification ULYesCertification ULYesCertification ULYesCertification ULYesCertification ULYes		Class B
Mounting positionAll positionsDrop to concrete floor (according to IEC/EN IEC 60068-2-31)High: 1mRigid connecting capacity without ferrule $1 \times 4^2 - 2 \times 2.5^{\circ}$ mm² $1 \times XMG11 - 2 \times AWG14$ Flexible connecting capacity with ferrule $1 \times 2.5^{\circ} - 2 \times 1.5^{\circ}$ mm² $1 \times 2.5^{\circ} - 2 \times 1.5^{\circ}$ Short interruption on power line (according to IEC/EN 61000-4-11)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueTrueTrueDirective connection69Delivery: open terminals70.5Utine Dimensions10 \times 10^{\circ}Delivery: open terminals70.5Midth (mm) according to DIN 438070.5Utine at 0.5 2.05 (200 CE)Yes <tr< td=""><td></td><td>25 mm</td></tr<>		25 mm
Drop to concrete floor (according to IEC/EN IEC 60068-2-31)         High: 1m           Rigid connecting capacity without ferrule         1 x 4 <sup>2</sup> - 2 x 2.5 <sup>2</sup> mm <sup>2</sup> 1 x AWG11 - 2 x AWG14           Flexible connecting capacity with ferrule         1 x 2 <sup>2</sup> - 2 x 1.5 <sup>2</sup> mm <sup>2</sup> 1 x AWG14 - 2 x AWG16           Tightening torque (according to IEC 60947-1)         0.50.6N.m           Housing material (according to IEC/EN 60695-2-11)         • Self-extinguishing • Incandescent wire test           Shock and bump tests (according to IEC/EN 60256-21-2)         15 g - 11 ms           Short interruption on power line (according to IEC/EN 60256-21-2)         0% residual voltage, 250/300 cycles           Delivery: open terminals         True           Type of electric connection         Screw connection           Outine Dimensions         U           Weight (g)         70.5           Width (mm) according to DIN 43880         17.5           International Directives & Conformity Certification         Yes           REACh regulation N°1907/2006/CE         Yes           UV D 2014/35/UE         Yes           Directive 2012/19/EU         Yes           European Directive 205/20/CE         Yes           ISO 14001: 2015         Yes           Certification UL         Yes           Certification UL         Yes           Certi		
Rigid connecting capacity without ferrule1 x 4x² - 2 x 2.5² mm² 1 x AWG11 - 2 x AWG14Flexible connecting capacity with ferrule1 x 2.5² - 2 x 1.5² mm² 1 x AWG14 - 2 x AWG16Tightening torque (according to IEC 60947-1)0.50.6N.mHousing material (according to IEC/EN 60695-2-11)Self-extinguishing • Incandescent wire testShock and bump tests (according to IEC/EN 60255-21-2)15 g - 11 msShort interruption on power line (according to IEC/EN 61000-4-11)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueType of electric connectionScrew connectionOutline Dimensions90Weight (g)70.5Width (mm) according to ID 4388017.5International Directives & Conformity CertificationYesREACh regulation N*1907/2006/CEYesLVD 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesEuropean Directive 2005/20/CEYesCertification ULYesRecycling noticeYesCertification ULYesRecycling noticeYesCertification ULYesRecycling noticeYesCertification UL KCAYes		
- 1 x AWG11 - 2 x AWG14         Flexible connecting capacity with ferrule       - 1 x 2.5² - 2 x 1.5² mm²         - 1 x AWG14 - 2 x AWG16         Tightening torque (according to IEC 60047-1)       0.50.6N.m         Housing material (according to IEC/EN 60055-2-11)       - Self-extinguishing         - I ncandescent 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 60100-4-11)       0% residual voltage, 250/300 cycles         Delivery: open terminals       True         Type of electric connection       connection         Outline Dimensions       -         Depth (mm)       69         Height (mm)       90         Weight (g)       70.5         Width multi colonaction       -         RoHS 2015/863/UE       Yes         REACh regulation N*1907/2006/CE       Yes         UV D 2014/35/UE       Yes         Directive 2012/19/EU       Yes         Europen Directive 2005/20/CE       Yes         Certification UL       Yes         Certification UL       Yes         Certification UL       Yes         Certification UL KCA       Yes		·
- 1 x AWG14 - 2 x AWG16           Tightening torque (according to IEC 60947-1)         0.50.6N.m           Housing material (according to IEC/EN 60695-2-11)         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         Screw connection           Pepth (mm)         69           Height (mm) according to DIN 43880         70.5           Width (mg) according to DIN 43880         70.5           RoHS 2015/863/UE         Yes           RACh regulation N°1907/2006/CE         Yes           LVD 2014/35/UE         Yes           Directive 2005/20/CE         Yes           European Directive 2005/20/CE         Yes           European Directive 2005/20/CE         Yes           European Directive 2005/20/CE         Yes           Certification CE         Yes           Certification CE         Yes           Certification CE         Yes           Certification UL CA         Yes	Rigid connecting capacity without terrule	
Housing material (according to IEC/EN 60695-2-11)Self-extinguishing Incandescent wire testShock and bump tests (according to IEC/EN 60255-21-2)15 g - 11 msShort interruption on power line (according to IEC/EN 61000-4-11)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueType of electric connectionScrew connectionOutline Dimensions69Height (mm)90Weight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationYesReACh regulation N° 1907/2006/CEYesUV 2014/36/UEYesIver 2012/19/EUYesIsconder 2005/20/CEYesIsconder 2005/20/CEYesCertification ULYesRecycling noticeYesCertification UK CAYes	Flexible connecting capacity with ferrule	
Incandescent wire testShock and bump tests (according to IEC/EN 60255-21-2)15 g - 11 msShort interruption on power line (according to IEC/EN 61000-4-11)0% residual voltage, 250/300 cyclesDelivery: open terminalsTrueType of electric connectionScrew connectionOutline DimensionsDepth (mm)69Height (mm)90Wight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationReACh regulation N°1907/2006/CEYesUK REACh regulation N°1907/2006/CEYesLVD 2014/35/UEYesEuropean Directive 2005/20/CEYesLiongan Directive 2005/20/CEYesLiongan Directive 2005/20/CEYesCertification CEYesCertification ULYesRecycling noticeYesCertification ULYesCertification ULYesRecycling noticeYesCertification UK CAAYes	Tightening torque (according to IEC 60947-1)	0.50.6N.m
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Type of electric connectionScrew connectionOutline Dimensions69Depth (mm)69Height (mm)90Weight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationYesReACh regulation N°1907/2006/CEYesUK REACh regulation N°1907/2006/CEYesUV 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesEuropean Directive 2005/20/CEYesCertification CEYesCertification ULYesRecycling noticeYesCertification ULYesRecycling noticeYesCertification UK CAYes		
Outline DimensionsDepth (mm)69Height (mm)90Weight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationresRoHS 2015/863/UEYesREACh regulation N°1907/2006/CEYesUK REACh regulation 2023 N°722YesLVD 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesEloropean Directive 2005/20/CEYesCertification CEYesCertification ULYesRecycling noticeYesCertification UK CAYes	Delivery: open terminals	True
Depth (mm)69Height (mm)90Weight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationRoHS 2015/863/UEYesRACh regulation N°1907/2006/CEYesUK REACh regulation 2023 N°722YesLVD 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesEuropean Directive 2005/20/CEYesCertification CEYesCertification ULYesRecycling noticeYesRecycling noticeYesCertification UK CAYes	Type of electric connection	Screw connection
Height (mm)90Weight (g)70.5Width (mm) according to DIN 4388017.5International Directives & Conformity CertificationRoHS 2015/863/UEYesREACh regulation N°1907/2006/CEYesUK REACh regulation 2023 N°722YesLVD 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesISO 14001: 2015YesCertification CEYesCertification ULYesRecycling noticeYesCertification UK CAYes	Outline Dimensions	
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International Directives & Conformity CertificationRoHS 2015/863/UEYesREACh regulation N°1907/2006/CEYesUK REACh regulation 2023 N°722YesLVD 2014/35/UEYesDirective 2012/19/EUYesEuropean Directive 2005/20/CEYesISO 14001: 2015YesCertification CEYesCertification ULYesRecycling noticeYesVesYesRecycling noticeYesYe	Weight (g)	70.5
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Certification ULYesRecycling noticeYesCertification UK CAYes	ISO 14001: 2015	Yes
Recycling notice     Yes       Certification UK CA     Yes	Certification CE	Yes
Certification UK CA Yes	Certification UL	Yes
	Recycling notice	Yes
Certification CCC 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 Un 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.

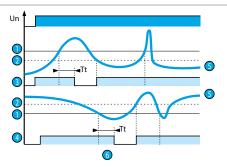
Once the voltage falls below the threshold value minus the hysteresis, the relay closes instantaneously.

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





Hysteresis

Threshold

- Overvoltage function relay
- Undervoltage underload function relay

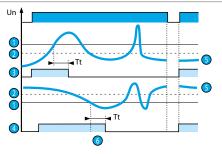
Controlled signal

Delay on threshold crossing (Tt)

# 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.

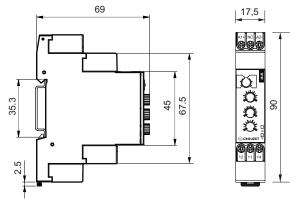


- 1 2 3 4 5 Threshold
- Hysteresis
- Overvoltage function relay
- Undervoltage underload function relay
- Controlled signal Ğ
  - Delay on threshold crossing (Tt)

### **Product Dimensions**

Front and Side

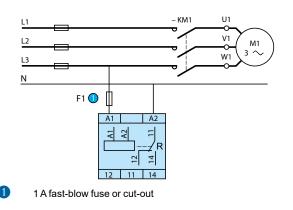
### MUS80-MUS260



### **Electronic & Wiring Diagrams**

Connections

MUS80-MUS260



### Warning:

The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Crouzet and its subsidiaries reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is usitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.