84873222-M3US

- H3US and M3US relays control, on 3-phase networks:
  - overvoltage between phases,
  - undervoltage between phases
- The H3USN relay controls, on 3-phase networks:
  - overvoltage between phases and neutral,
  - undervoltage between phases and neutral,
  - loss of neutral
- Multi-voltage Products
- Controls its own supply voltage
- True RMS measurement
- LED status indication

Supply	
AC supply voltage frequency	50 / 60 Hz ±10%
Galvanic isolation of power supply/measurement	No
Inputs and measuring circuit	
Frequency of measured signal	50 →60 Hz ± 10%
Max. measuring cycle time	150 ms/True RMS measurement
Voltage threshold adjustment	Undervoltage -2 to -20% of selected Un for M3US: (-2 to -12% across the 3 x 208 V range) (-2 to -17% across the 3 x 220 V range) for H3US: (-2 to -12% across the 3 x 220 V range) Overvoltage 2→20% of selected Un For M3US and H3US: (+2 →+10% across the 3 x 480 V AC range)
Fixed hysteresis	2% of Un (M3US, H3US)
Display precision	± 3% of the displayed value
Repetition accuracy with constant parameters	± 0,5%
Measuring error with voltage drift	< 1% across the whole range
Measuring error with temperature drift	0,05% / °C
Timing	
Delay on thresold crossing Tt	0,3 →30 s (0, +10%)
Repetition accuracy with constant parameters	± 3%
Reset time	1500 ms
Delay on pick-up	500 ms
Alarm on delay time max.	200 ms
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
Breaking capacity (resistive)	1250 VA AC
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC 60947-5-1	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14
Mechanical life (operations)	30×10^6
Insulation	
Nominal insulation voltage IEC 60664-1	400 V
Insulation coordination (IEC 60664-1 / 60255-5)	Overvoltage category III: degree of pollution 3
Rated impulse withstand voltage IEC 60664-1/60255-5	4 KV (1,2 / 50 µs)
Dielectric strength IEC 60664-1/60255-5	2 kV AC 50 Hz 1 min
Insulation resistance IEC 60664-1 / 60255-5	> 500 MΩ / 500 VDC
General characteristics	
Display power supply	Green LED
Display relay	Yellow LED (1 for M3US, 2 for H3US and H3USN)
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material: enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11
Protection (IEC 60529)	Terminal block: IP 20 Casing: IP30
Connecting capacity IEC 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 60947-1	0,6 →1 Nm / 5,3 →8,8 Lbf.Ft

Operating temperature IEC 60068-2	-20 →+50°C
Storage temperature IEC 60068-2	-40 →+70°C
Humidity IEC 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 60068-2-6	5 g

Standards

Marking	CE (LVD) 73/23/EEC - EMC 89/336/EEC
Product standard	NF EN 60255-6 / CEI 60255-6 / UL 508 / CSA C22.2 N°14
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

Supply

Supply voltage Un	3 x 208 →3 x 480 V AC *
Voltage supply tolerance	-12% / +10%
Operating range	183 →528 V AC
Power consumption at Un	1.8 VA in AC

Inputs and measuring circuit

Selection of phase-phase nominal voltage Un	208-220-380-400-415-440-480 V AC
Selection of phase-neutral voltage	-

Output

Electrical life (number of operations)	1×10^5

General characteristics

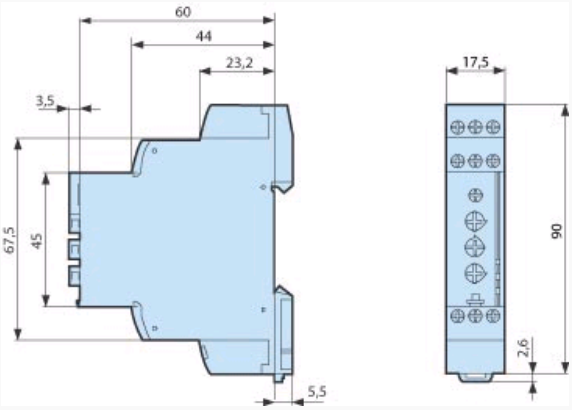
Casing	17,5 mm
Weight	80 g

Comments

	* 3-phase mains with earth

Description	Code
Removable sealable cover for 17.5 mm casing	84800000

Dimension Diagram : M3US



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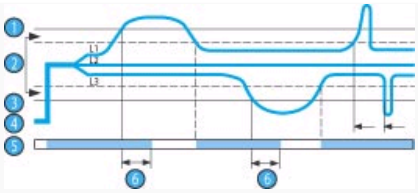
3-phase voltage controllers which monitor:
- Undervoltage, adjustable from -20 to -2% of Un
- Overvoltage, adjustable from 2 to 20% of Un
- Presence of the neutral (H3USN only)

Measurements are taken between Phases for the H3US - M3US and between Phases and Neutral for the H3USN
Faults are signalled via LEDs, distinguishing the origin of the fault (one LED for the upper threshold, one LED for the lower threshold).

Set the selector switch to the 3-phase network voltage Un.
The position of this selector switch is only taken into account when the unit is powered up.
If the switch position changes while the unit is operating, all the LEDs flash but the product continues to work normally with the voltage selected on energisation prior to the change of position.
The LEDs return to their normal state if the switch is reset to its initial position defined before the last energisation.

: M3US - Under/Overvoltage

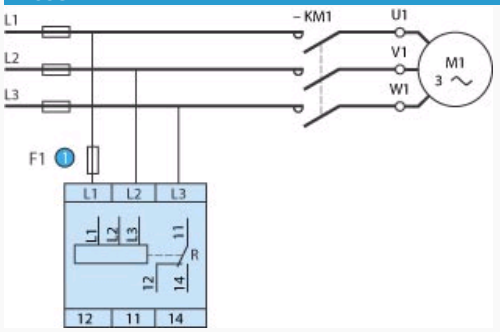


The relay monitors its own supply voltage. It controls:
- Undervoltage, adjustable from -20 to -2% of Un (-12 to -2% over the 3 x 208 V AC range and -17% to -2% for the 3 x 220 V AC range due to the minimum voltage 183 V AC)
- Overvoltage, adjustable from +2 →+20% (+2 →+10% over the 3 x 480 V AC range due to the maximum voltage 528 V AC).

An adjustable time delay from 0.3 to 30s can be used to disable the output relay during a transient fault.
In the event of a voltage fault, the relay opens at the end of the time delay set by the user.
In the event of phase failure, the relay opens instantaneously, without waiting for the end of the time delay.
When the unit is powered up with a measured fault, the relay stays open.

Nº	Legend
1	Overvoltage
2	Hysteresis
3	Undervoltage
4	Phases L1, L2, L3
5	Relay
6	Over and undervoltage threshold delay

: M3US



Nº	Legend
1	100 mA fast-blow fuse or cut-out

Special adaptations

- ✔ Customisable colours and labels
- ✔ Single voltage in the generic range
- ✔ Fixed or adjustable time delay
- ✔ Adjustable fixed hysteresis

Adaptations dedicated to M3US:

- ✔ Fixed threshold in the generic range

Adaptations dedicated to H3US:

- ✔ Fixed threshold in the generic range

Adaptations dedicated to H3USN:

- ✔ Fixed overvoltage threshold in the generic range
- ✔ Fixed undervoltage threshold in the generic range