■ **For alternating current fans with thermal contacts wired to the terminal board**

☐ **Full motor protection switch MW**
Switch and full protection device in plastic casing for surface mounting or installation in switch cabinet (clamping assembly for mounting rail).

■ **For three-phase current fans with thermal contacts**

☐ **Full motor protection switch MD**
Switch and full protection device in plastic casing for surface mounting or installation in switch cabinet (clamping assembly for mounting rail).

■ **For pole-changeable three-phase current fans with separate winding and thermal contacts**

☐ **Full motor protection switch M 2**
Switch and full protection device in light-grey plastic casing with indicator light for surface mounting.

■ **For pole-changeable three-phase current fans with Dahlander winding and thermal contacts**

☐ **Full motor protection switch M 3**
Design and function like M 2

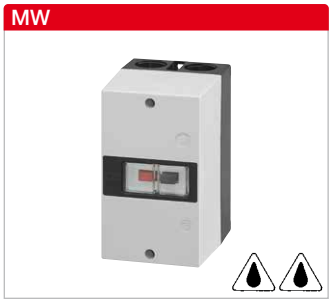
■ **For two-speed three-phase current fans with ϒ/Δ switching and thermal contacts**

☐ **Full motor protection switch M 4**
Design and function like M 3

■ **For three-phase current fans with built-in PTC thermistors (PTC temperature sensors) for thermal motor protection. Use mandatory for speed-controlled, explosion-proof fans.**

☐ **Full motor protection switch MSA**
Triggering device with lockout for 1 to 6 PTC thermistor temperature sensors connected in series.

MW



MW Ref. no. 01579
On/off actuation by push-button switch. Manual recommissioning after fault.
Potential-free auxiliary contact for connection for fault report.
230 V, 1~, 50/60 Hz, use from 80 V
Nominal current 0.4 to 10 A
Protection cat. IP55 Weight approx. 0.5 kg
Dimensions mm W 80 x H 140 x D 95
Wiring diagram no. 517

MD

MD Ref. no. 05849
On/off actuation by push-button switch. Manual recommissioning after fault.
Potential-free auxiliary contact for connection for fault report.
400 V, 3~, 50/60 Hz, use from 80 V
Nominal current 0.1 to 25 A
Protection cat. IP55 Weight approx. 0.5 kg
Dimensions mm W 80 x H 140 x D 95
Wiring diagram no. 518

M

M 2 Ref. no. 01292
Motor disconnected from the mains with TK response. Recommissioning after fault by switch rotation over position “0”.

Voltage 400 V, 50/60 Hz
Switching capacity AC 3 / 5.5 kW
Nominal current approx. 12 A
Protection cat. IP55 Weight approx. 1.0 kg
Dimensions mm W 170 x H 135 x D 115
Wiring diagram no. 142

M

M 3 Ref. no. 01293
Like M 2, but for pole-switching 3~ fans with Dahlander winding and built-in TK.
Dimensions mm W 170 x H 135 x D 135
Wiring diagram no. 143

M 4 Ref. no. 01571
Like M 3, but for two speed 3~ fans with ϒ/Δ switching and built-in TK.
Wiring diagram no. 144

MSA

When the nominal response temperature of a PTC thermistor is reached, the built-in relay drops out. A fault is indicated by built-in LED. Recommissioning by pressing the “Reset” button or via externally connectable switch. Plastic casing for switch cabinet installation on mounting rail according to DIN EN 60715.

MSA Ref. no. 01289
For thermal protection of electric motors (also explosion-proof electric motors according to guideline 2014/34/EU (ATEX)) with built-in PTC resistor temperature sensors according to DIN 44081 and DIN 44082.
When following is reached
Voltage 230 V ± 15 %, 50/60 Hz
3~ operation via contactor
Switching capacity at 230 V 3 A AC 15
Connection options 1 to 6 PTC thermistors in series. Type-tested by Federal Institute of Physics and Metrology, according to
DIN EN 60079-14 / VDE 0165-1
DIN EN 60079-0 / VDE 0170-1
DIN EN 60079-17 / VDE 0165-10-1
Protection category IP20
Weight approx. 0.2 kg
Dimensions mm W 35 x H 90 x D 58
Wiring diagram no. 325.1

■ **Motor protection Regulations and standards**
The harmonised European standards and national installation directives require thermal overload protection for electric motors. This can be achieved in various ways and depends on the motor specification.

☐ Optimal protection is provided by thermal contacts (hereinafter “TK”), which monitor the motor winding temperature. These contacts also protect the speed-controlled motors.

☐ For low motor powers, the thermal contacts are wired in series with the motor windings, i.e. they are internally wired. This ensures an automatic function (deactivation and reactivation after cooling) without the operator necessarily having to react to the fault.

☐ For motors/fans with higher power, the connections of the thermal contacts or PTC thermistor temperature sensors are wired to the terminal block and must be connected to the adjacent motor full motor protection/triggering devices. Only under this condition can the warranty claim be preserved.

☐ Motors/fans without thermal monitoring elements in the winding (e. g. IEC standard motors) must be all-pole protected by a suitable motor protection switch.