



MM509N



## Motor protection circuit breaker 3P 4-6.3A ; 1.1/2.2 kW at 230/415V

### Technical characteristics

#### Architecture

|                 |                               |
|-----------------|-------------------------------|
| Type of order   | Short thumb-grip              |
| Number of poles | 3 P                           |
| Type of pole    | 3 P                           |
| Fixing mode     | DIN rail type O (symmetrical) |

#### Configuration

|                   |     |
|-------------------|-----|
| Number of modules | 2.5 |
|-------------------|-----|

#### Main electrical features

|                              |          |
|------------------------------|----------|
| Rated operational voltage Ue | 690 V    |
| Type of supply voltage       | AC       |
| Frequency                    | 50/60 Hz |

#### Voltage

|                                 |        |
|---------------------------------|--------|
| Rated insulation voltage        | 690 V  |
| Rated impulse withstand voltage | 6000 V |

#### Electric current

|                                                                              |                                                   |
|------------------------------------------------------------------------------|---------------------------------------------------|
| Rated current                                                                | 6.3 A                                             |
| Rated ultimate short-circuit breaking capacity Icu under 690V AC IEC 60947-2 | 3 kA                                              |
| Magnetic regulating current                                                  | 12.4 / 15.5 / 18.6 In                             |
| Thermal trip setting with 30°                                                | 4 / 4.3 / 4.6 / 4.9 / 5.2 / 5.4 / 5.7 / 6 / 6.3 A |
| Rating current 0°C according to IEC 60947                                    | 6.3 A                                             |
| Rating current 10°C according to IEC 60947                                   | 6.3 A                                             |
| Rating current 20°C according to IEC 60947                                   | 6.3 A                                             |
| Rating current 30°C according to IEC 60947                                   | 6.3 A                                             |
| Rating current 40°C according to IEC 60947                                   | 6.3 A                                             |
| Rating current 50°C according to IEC 60947                                   | 6.3 A                                             |
| Rated service breaking capacity Ics AC according IEC 60947-2                 | 100 %                                             |
| Rated ultimate short-circuit breaking capacity Icu under 230V AC IEC 60947-2 | 150 kA                                            |
| Rated ultimate short-circuit breaking capacity Icu under 240V AC IEC 60947-2 | 150 kA                                            |
| Rated ultimate short-circuit breaking capacity Icu under 400V AC IEC 60947-2 | 150 kA                                            |
| Rated ultimate short-circuit breaking capacity Icu under 415V AC IEC 60947-2 | 100 kA                                            |
| Rated ultimate short-circuit breaking capacity Icu under 220V AC IEC 60947-2 | 150 kA                                            |

|                                                                              |        |
|------------------------------------------------------------------------------|--------|
| Rated ultimate short-circuit breaking capacity Icu under 380V AC IEC 60947-2 | 150 kA |
|------------------------------------------------------------------------------|--------|

#### Dimensions

|                                          |       |
|------------------------------------------|-------|
| Strip length of main circuit connections | 10 mm |
|------------------------------------------|-------|

#### Frequency

|           |             |
|-----------|-------------|
| Frequency | 50 to 60 Hz |
|-----------|-------------|

#### Power

|                           |        |
|---------------------------|--------|
| Total power loss under IN | 5.68 W |
|---------------------------|--------|

|                                                          |        |
|----------------------------------------------------------|--------|
| Standard power rating of 3 phase motor in AC3 under 230V | 1.1 kW |
|----------------------------------------------------------|--------|

|                                                          |        |
|----------------------------------------------------------|--------|
| Standard power rating of 3 phase motor in AC3 under 400V | 2.2 kW |
|----------------------------------------------------------|--------|

|                                                                        |        |
|------------------------------------------------------------------------|--------|
| Rated operational power for 3P under 220-230V AC3 according IEC60947-4 | 1.1 kW |
|------------------------------------------------------------------------|--------|

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| Rated operational power for 3P under 240V AC3 according IEC60947-4 | 1.1 kW |
|--------------------------------------------------------------------|--------|

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| Rated operational power for 3P under 415V AC3 according IEC60947-4 | 2.2 kW |
|--------------------------------------------------------------------|--------|

|                                                                    |      |
|--------------------------------------------------------------------|------|
| Rated operational power for 3P under 440V AC3 according IEC60947-4 | 3 kW |
|--------------------------------------------------------------------|------|

|                                                                    |      |
|--------------------------------------------------------------------|------|
| Rated operational power for 3P under 500V AC3 according IEC60947-4 | 3 kW |
|--------------------------------------------------------------------|------|

#### Electrical specifications

|                                           |        |
|-------------------------------------------|--------|
| Nominal tightening torque of main circuit | 1.7 Nm |
|-------------------------------------------|--------|

#### Endurance

|                                        |       |
|----------------------------------------|-------|
| Electric endurance in number of cycles | 50000 |
|----------------------------------------|-------|

|                                                       |    |
|-------------------------------------------------------|----|
| Mechanical endurance in number of operations per hour | 40 |
|-------------------------------------------------------|----|

|                                 |        |
|---------------------------------|--------|
| Number of mechanical operations | 100000 |
|---------------------------------|--------|

#### Installation, mounting

|                   |       |
|-------------------|-------|
| Tightening torque | 1,7Nm |
|-------------------|-------|

|                                  |            |
|----------------------------------|------------|
| Type connection of power circuit | with screw |
|----------------------------------|------------|

#### Connection

|                                                                                  |                       |
|----------------------------------------------------------------------------------|-----------------------|
| Connection cross-section of input and output with screws, for massive conductors | 1 / 6 mm <sup>2</sup> |
|----------------------------------------------------------------------------------|-----------------------|

|                                                                                 |                       |
|---------------------------------------------------------------------------------|-----------------------|
| Connection cross section of access and exit with screws, for flexible conductor | 1 / 6 mm <sup>2</sup> |
|---------------------------------------------------------------------------------|-----------------------|

|                                               |                                                         |
|-----------------------------------------------|---------------------------------------------------------|
| Cable flexibel cross section for main circuit | 1x (1 - 6) mm <sup>2</sup> / 2x (1 - 6) mm <sup>2</sup> |
|-----------------------------------------------|---------------------------------------------------------|

|                                            |                                                         |
|--------------------------------------------|---------------------------------------------------------|
| Cable rigid cross section for main circuit | 1x (1 - 6) mm <sup>2</sup> / 2x (1 - 6) mm <sup>2</sup> |
|--------------------------------------------|---------------------------------------------------------|

|                    |            |
|--------------------|------------|
| Type of connection | with screw |
|--------------------|------------|

#### Settings

|                                                       |                |
|-------------------------------------------------------|----------------|
| min/maxi threshold value of the AC magnetic operation | 78.1 / 117.2 A |
|-------------------------------------------------------|----------------|

|                        |    |
|------------------------|----|
| Setting type In or Ith | IN |
|------------------------|----|

#### Equipment

|                                           |            |
|-------------------------------------------|------------|
| Automatic compensation of the temperature | -5 / 40 °C |
|-------------------------------------------|------------|

|                     |     |
|---------------------|-----|
| Can be accessorized | Yes |
|---------------------|-----|

#### Use cases

|                 |     |
|-----------------|-----|
| Category of use | AC3 |
|-----------------|-----|

#### Standards

|                         |                              |
|-------------------------|------------------------------|
| Standard text           | IEC 60947-4-1 ; EN 60947-4-1 |
| European directive RoHs | voluntary compliance         |
| European directive WEEE | concerned                    |

#### Safety

|                         |      |
|-------------------------|------|
| Protection index IP     | IP20 |
| REACH conform           | Yes  |
| RoHS conform            | Yes  |
| Halogen free            | No   |
| Phase failure sensitive | Yes  |

#### Use conditions

|                                                          |             |
|----------------------------------------------------------|-------------|
| Operating temperature                                    | -25...55 °C |
| Degree of pollution according to IEC 60664 / IEC 60947-2 | 3           |
| Storage/transport temperature                            | -25...80 °C |

#### temperatur

|                            |       |
|----------------------------|-------|
| Temperature of calibration | 30 °C |
|----------------------------|-------|