



circuit breaker 3VA6 UL Frame 1000 breaking capacity class M 35 kA @ 480 V 3-pole, line protection ETU860, LSIG,  $I_n=1000$  A overload protection  $I_r=400$  A ...1000 A short-circuit protection  $I_{sd}=0.6..10 \times I_n$ ,  $I_i=1.5..10 \times I_n$  neutral conductor protection optionally with ext. CT up to 160% ground-fault protection  $I_G=0.2...1 \times I_n$ ,  $t_g=0.05-0.8$  s

| Model                                                                                                                      |                                         |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| product brand name                                                                                                         | SENTRON                                 |
| product designation                                                                                                        | Molded-case circuit breaker             |
| product designation / according to UL file                                                                                 | MMNAE                                   |
| design of the product                                                                                                      | System protection                       |
| design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) | Yes                                     |
| design of the overcurrent release                                                                                          | ETU860                                  |
| protection function of the overcurrent release                                                                             | LSIG                                    |
| number of poles                                                                                                            | 3                                       |
| General technical data                                                                                                     |                                         |
| insulation voltage / rated value                                                                                           | 800 V                                   |
| operating voltage / at AC / rated value                                                                                    | 690 V                                   |
| power loss [W] / maximum                                                                                                   | 330 W                                   |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole                                | 110 W                                   |
| mechanical service life (operating cycles) / typical                                                                       | 10 000                                  |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                                           | 4 900                                   |
| electrical endurance (operating cycles) / at AC-1 / at 690 V                                                               | 3 400                                   |
| electrical endurance (operating cycles) / at 480 V                                                                         | 4 900                                   |
| electrical endurance (operating cycles) / at 600 V                                                                         | 3 400                                   |
| product feature / for neutral conductors / upgradable/retrofitable / short-circuit and overload proof                      | Yes                                     |
| ground-fault monitoring version                                                                                            | Summation current formation L-conductor |
| product function                                                                                                           |                                         |
| • communication function                                                                                                   | Yes                                     |
| • other measurement function                                                                                               | Yes                                     |
| Net Weight                                                                                                                 | 12.76 kg                                |
| Current                                                                                                                    |                                         |
| marking / according to UL 489 / 100%-rated breaker                                                                         | No                                      |
| operational current                                                                                                        |                                         |
| • at 40 °C                                                                                                                 | 1 000 A                                 |
| • at 45 °C                                                                                                                 | 940 A                                   |
| • at 50 °C                                                                                                                 | 880 A                                   |
| • at 55 °C                                                                                                                 | 840 A                                   |
| • at 60 °C                                                                                                                 | 800 A                                   |
| • at 65 °C                                                                                                                 | 750 A                                   |
| • at 70 °C                                                                                                                 | 700 A                                   |
| Switching capacity according to IEC 60947                                                                                  |                                         |
| switching capacity class of the circuit breaker                                                                            | M                                       |
| maximum short-circuit current breaking capacity ( $I_{cu}$ )                                                               |                                         |

|                                                                                                                                                              |                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>                                                         | 85 kA<br>55 kA<br>25 kA   |
| operating short-circuit current breaking capacity (Ics) <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul> | 85 kA<br>55 kA<br>19 kA   |
| short-circuit current making capacity (Icm) <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>             | 187 kA<br>121 kA<br>53 kA |

#### Switching capacity according to UL 489

|                                                                                                                                |                          |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| current breaking capacity <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 480 V</li> <li>• at 600 V</li> </ul> | 100 kA<br>35 kA<br>25 kA |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|

#### Adjustable parameters

|                                                                                                                                                                                                    |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>  | 400 A<br>1 000 A            |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>      | 0.5 s<br>25 s               |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>0</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 600 A<br>10 000 A           |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 600 A<br>10 000 A           |
| adjustable response value delay time (t <sub>sd</sub> ) / for S-tripping / with I <sub>0</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 0.05 s<br>0.5 s             |
| adjustable response value delay time (t <sub>sd</sub> ) / for S-tripping / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 0.05 s<br>0.5 s             |
| adjustable response value setting current (I <sub>i</sub> ) / for I-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                        | 1 500 A<br>10 000 A         |
| adjustable current response value current / for G-tripping / with standard characteristic <ul style="list-style-type: none"> <li>• initial value</li> <li>• full-scale value</li> </ul>            | 200 A<br>1 000 A            |
| adjustable response value delay time (t <sub>g</sub> ) / for G-tripping / with I <sub>0</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>      | 0.05 s<br>0.8 s             |
| adjustable response value setting current (I <sub>g</sub> ) / for G-tripping / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul> | 200 A<br>1 000 A            |
| adjustable response value delay time (t <sub>g</sub> ) / for G-tripping / with I <sub>2</sub> t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>      | 0.05 s<br>0.8 s             |
| adjustable setting current (I <sub>nN</sub> ) / for N-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                      | 0 A<br>0 A                  |
| design of the N-conductor protection                                                                                                                                                               | adjustable OFF: 20% to 160% |

|                                         |          |
|-----------------------------------------|----------|
| product function / grounding protection | Yes      |
| <b>Mechanical Design</b>                |          |
| product component                       |          |
| • undervoltage release                  | No       |
| • voltage trigger                       | No       |
| • trip indicator                        | No       |
| height [in]                             | 12.91 in |
| height                                  | 328 mm   |
| width [in]                              | 8.27 in  |
| width                                   | 210 mm   |
| depth [in]                              | 4.72 in  |
| depth                                   | 120 mm   |

|                                                                                           |                             |
|-------------------------------------------------------------------------------------------|-----------------------------|
| <b>Connections</b>                                                                        |                             |
| arrangement of electrical connectors / for main current circuit                           | Front connection            |
| type of electrical connection / for main current circuit                                  | nut keeper kit on both ends |
| type of connectable conductor cross-sections / for flat-bar terminal connection / minimum | 20 x 4 mm                   |
| type of connectable conductor cross-sections / for flat-bar terminal connection / maximum | 50 x 28 mm                  |

|                                                |   |
|------------------------------------------------|---|
| <b>Auxiliary circuit</b>                       |   |
| number of CO contacts / for auxiliary contacts | 0 |

|                                            |    |
|--------------------------------------------|----|
| <b>Accessories</b>                         |    |
| product extension / optional / motor drive | No |

|                                           |        |
|-------------------------------------------|--------|
| <b>Environmental conditions</b>           |        |
| protection class IP / on the front        | IP40   |
| ambient temperature                       |        |
| • during operation / minimum              | -25 °C |
| • during operation / maximum              | 70 °C  |
| • during storage / minimum                | -40 °C |
| • during storage / maximum                | 80 °C  |
| reference code / according to IEC 81346-2 | Q      |

|                                 |  |
|---------------------------------|--|
| <b>Approvals / Certificates</b> |  |
| <b>General Product Approval</b> |  |



[Confirmation](#)



|                               |     |                                                    |                   |
|-------------------------------|-----|----------------------------------------------------|-------------------|
| General Product Approval      | EMV | Test Certificates                                  | Marine / Shipping |
|                               |     |                                                    |                   |
| <a href="#">Miscellaneous</a> |     | <a href="#">Type Test Certificates/Test Report</a> |                   |

|                              |                               |
|------------------------------|-------------------------------|
| Marine / Shipping            | other                         |
|                              |                               |
|                              |                               |
| <a href="#">Confirmation</a> | <a href="#">Miscellaneous</a> |

|                               |                                       |                                             |
|-------------------------------|---------------------------------------|---------------------------------------------|
| other                         | Dangerous Good                        | Environment                                 |
| <a href="#">Miscellaneous</a> | <a href="#">Transport Information</a> | <a href="#">Environmental Confirmations</a> |

## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/lowvoltage/catalogs>

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA6610-5KQ32-0AA0>

### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3VA6610-5KQ32-0AA0>

### Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA6610-5KQ32-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA6610-5KQ32-0AA0)

### CAX-Online-Generator

<http://www.siemens.com/cax>

### Tender specifications

<http://www.siemens.com/specifications>





