



circuit breaker 3VA5 UL Frame 600 breaking capacity class H 65 kA @ 480 V 3-pole, line protection TM230, FTAM,  $I_n=450$  A overload protection  $I_r=450$  A permanently set short-circuit protection  $I_i=5...10 \times I_n$  without connection

| Model                                                                                                                      |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                                         | SENTRON                     |
| product designation                                                                                                        | Molded-case circuit breaker |
| product designation / according to UL file                                                                                 | HLAS                        |
| 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 load switch / according to UL 489 / High-Intensity-Discharge circuit breaker (HID Type)                      | No                          |
| design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)                                | No                          |
| design of the overcurrent release                                                                                          | TM230                       |
| protection function of the overcurrent release                                                                             | LI                          |
| number of poles                                                                                                            | 3                           |
| General technical data                                                                                                     |                             |
| insulation voltage / rated value                                                                                           | 800 V                       |
| operating voltage / at DC / rated value                                                                                    | 500 V                       |
| operating voltage / at AC / rated value                                                                                    | 690 V                       |
| power loss [W] / maximum                                                                                                   | 99 W                        |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole                                | 33 W                        |
| mechanical service life (operating cycles) / typical                                                                       | 20 000                      |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                                           | 4 000                       |
| electrical endurance (operating cycles) / at AC-1 / at 690 V                                                               | 2 700                       |
| electrical endurance (operating cycles) / at 480 V                                                                         | 4 000                       |
| electrical endurance (operating cycles) / at 600 V                                                                         | 2 700                       |
| product feature / for neutral conductors / upgradable/retrofitable / short-circuit and overload proof                      | No                          |
| product function                                                                                                           |                             |
| • communication function                                                                                                   | No                          |
| • other measurement function                                                                                               | No                          |
| Net Weight                                                                                                                 | 4.735 kg                    |
| Current                                                                                                                    |                             |
| marking / according to UL 489 / 100%-rated breaker                                                                         | No                          |
| operational current                                                                                                        |                             |
| • at 40 °C                                                                                                                 | 450 A                       |
| • at 45 °C                                                                                                                 | 440 A                       |
| • at 50 °C                                                                                                                 | 429 A                       |
| • at 55 °C                                                                                                                 | 419 A                       |
| • at 60 °C                                                                                                                 | 409 A                       |

|                                                                                                                    |                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 65 °C</li> </ul>                                                       | 398 A                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• at 70 °C</li> </ul>                                                       | 388 A                                                                                                                                                          |
| <b>Switching capacity according to IEC 60947</b>                                                                   |                                                                                                                                                                |
| switching capacity class of the circuit breaker                                                                    | H                                                                                                                                                              |
| maximum short-circuit current breaking capacity (I <sub>cu</sub> )                                                 |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                       | 100 kA                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 415 V</li> </ul>                                                       | 70 kA                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• at 690 V</li> </ul>                                                       | 10 kA                                                                                                                                                          |
| operating short-circuit current breaking capacity (I <sub>cs</sub> )                                               |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                       | 100 kA                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 415 V</li> </ul>                                                       | 70 kA                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• at 690 V</li> </ul>                                                       | 6 kA                                                                                                                                                           |
| short-circuit current making capacity (I <sub>cm</sub> )                                                           |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                       | 220 kA                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 415 V</li> </ul>                                                       | 154 kA                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 690 V</li> </ul>                                                       | 17 kA                                                                                                                                                          |
| design of short-circuit protection                                                                                 | For switching power values in DC networks, see the 3VA molded case circuit breaker device manual; link to be found under Service & Support in the last chapter |
| <b>Switching capacity according to UL 489</b>                                                                      |                                                                                                                                                                |
| current breaking capacity                                                                                          |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> </ul>                                                       | 100 kA                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 480 V</li> </ul>                                                       | 65 kA                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• at 600 V</li> </ul>                                                       | 25 kA                                                                                                                                                          |
| <b>Adjustable parameters</b>                                                                                       |                                                                                                                                                                |
| 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> </ul>                                                        | 450 A                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                                        | 450 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> </ul>                                                        | 1 s                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                                        | 1 s                                                                                                                                                            |
| adjustable response value setting current (I <sub>i</sub> ) / for I-tripping                                       |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> </ul>                                                        | 2 250 A                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                                        | 4 500 A                                                                                                                                                        |
| adjustable setting current (I <sub>nN</sub> ) / for N-tripping                                                     |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> </ul>                                                        | 0 A                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                                        | 0 A                                                                                                                                                            |
| product function / grounding protection                                                                            | No                                                                                                                                                             |
| <b>Mechanical Design</b>                                                                                           |                                                                                                                                                                |
| product component                                                                                                  |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• undervoltage release</li> </ul>                                           | No                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• voltage trigger</li> </ul>                                                | No                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• trip indicator</li> </ul>                                                 | No                                                                                                                                                             |
| height [in]                                                                                                        | 9.76 in                                                                                                                                                        |
| height                                                                                                             | 248 mm                                                                                                                                                         |
| width [in]                                                                                                         | 5.43 in                                                                                                                                                        |
| width                                                                                                              | 138 mm                                                                                                                                                         |
| depth [in]                                                                                                         | 4.33 in                                                                                                                                                        |
| depth                                                                                                              | 110 mm                                                                                                                                                         |
| <b>Connections</b>                                                                                                 |                                                                                                                                                                |
| arrangement of electrical connectors / for main current circuit                                                    | Without connection                                                                                                                                             |
| type of electrical connection / for main current circuit                                                           | Without                                                                                                                                                        |
| <b>Auxiliary circuit</b>                                                                                           |                                                                                                                                                                |
| number of CO contacts / for auxiliary contacts                                                                     | 0                                                                                                                                                              |
| <b>Accessories</b>                                                                                                 |                                                                                                                                                                |
| product extension / optional / motor drive                                                                         | Yes                                                                                                                                                            |
| <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      |

#### Approvals / Certificates

##### General Product Approval



[Confirmation](#)



##### General Product Approval

##### EMV

##### Test Certificates

##### other

[Miscellaneous](#)



[Type Test Certificates/Test Report](#)

[Confirmation](#)

##### other

##### Environment

[Miscellaneous](#)

[Environmental Confirmations](#)

#### Further information

##### Information on the packaging

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

##### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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

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

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA5445-6EC31-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA5445-6EC31-0AA0>

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

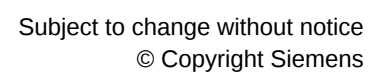
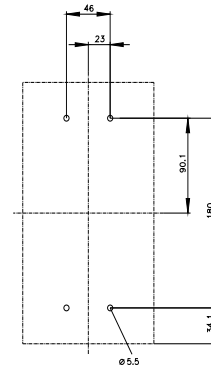
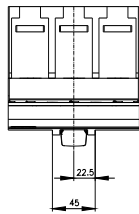
[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA5445-6EC31-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5445-6EC31-0AA0)

##### CAX-Online-Generator

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

##### Tender specifications

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



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