

**Siemens**  
**EcoTech**



circuit breaker 3VA6 UL Frame 600 breaking capacity class H 65 kA @ 480 V 3-pole, line protection ETU850, LSI,  $I_n=600$  A overload protection  $I_r=240$  A...600 A short-circuit protection  $I_{sd}=0.6..9 \times I_n$ ,  $I_i=1.5..9 \times I_n$  neutral conductor protection optionally with external current transformer, up to 160% without connection



| Model                                                                                                                      |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                                         | SENTRON                     |
| product designation                                                                                                        | Molded-case circuit breaker |
| product designation / according to UL file                                                                                 | HLAE                        |
| 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                                                                                          | ETU850                      |
| protection function of the overcurrent release                                                                             | LSI                         |
| 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                                                                                                   | 151 W                       |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole                                | 50.33 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                                                               | 3 500                       |
| electrical endurance (operating cycles) / at 480 V                                                                         | 4 000                       |
| electrical endurance (operating cycles) / at 600 V                                                                         | 3 500                       |
| product feature / for neutral conductors / upgradable/retrofitable / short-circuit and overload proof                      | Yes                         |
| ground-fault monitoring version                                                                                            | without                     |
| product function                                                                                                           |                             |
| • communication function                                                                                                   | Yes                         |
| • other measurement function                                                                                               | Yes                         |
| Net Weight                                                                                                                 | 5.3 kg                      |
| Current                                                                                                                    |                             |
| marking / according to UL 489 / 100%-rated breaker                                                                         | No                          |
| operational current                                                                                                        |                             |
| • at 40 °C                                                                                                                 | 600 A                       |
| • at 45 °C                                                                                                                 | 600 A                       |
| • at 50 °C                                                                                                                 | 570 A                       |
| • at 55 °C                                                                                                                 | 540 A                       |
| • at 60 °C                                                                                                                 | 510 A                       |
| • at 65 °C                                                                                                                 | 480 A                       |

|                                                                                                                   |                             |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------|
| • at 70 °C                                                                                                        | 450 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> )                                                |                             |
| • at 240 V                                                                                                        | 110 kA                      |
| • at 415 V                                                                                                        | 85 kA                       |
| • at 690 V                                                                                                        | 6 kA                        |
| operating short-circuit current breaking capacity (I <sub>cs</sub> )                                              |                             |
| • at 240 V                                                                                                        | 110 kA                      |
| • at 415 V                                                                                                        | 85 kA                       |
| • at 690 V                                                                                                        | 6 kA                        |
| short-circuit current making capacity (I <sub>cm</sub> )                                                          |                             |
| • at 240 V                                                                                                        | 242 kA                      |
| • at 415 V                                                                                                        | 187 kA                      |
| • at 690 V                                                                                                        | 9 kA                        |
| <b>Switching capacity according to UL 489</b>                                                                     |                             |
| current breaking capacity                                                                                         |                             |
| • at 240 V                                                                                                        | 100 kA                      |
| • at 480 V                                                                                                        | 65 kA                       |
| • at 600 V                                                                                                        | 22 kA                       |
| <b>Adjustable parameters</b>                                                                                      |                             |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic |                             |
| • minimum                                                                                                         | 250 A                       |
| • maximum                                                                                                         | 600 A                       |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic     |                             |
| • minimum                                                                                                         | 0.5 s                       |
| • maximum                                                                                                         | 15 s                        |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>0t</sub> characteristic    |                             |
| • minimum                                                                                                         | 360 A                       |
| • maximum                                                                                                         | 5 400 A                     |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>2t</sub> characteristic    |                             |
| • minimum                                                                                                         | 360 A                       |
| • maximum                                                                                                         | 5 400 A                     |
| adjustable response value delay time (t <sub>sd</sub> ) / for S-tripping / with I <sub>0t</sub> characteristic    |                             |
| • minimum                                                                                                         | 0.05 s                      |
| • maximum                                                                                                         | 0.5 s                       |
| adjustable response value delay time (t <sub>sd</sub> ) / for S-tripping / with I <sub>2t</sub> characteristic    |                             |
| • minimum                                                                                                         | 0.05 s                      |
| • maximum                                                                                                         | 0.5 s                       |
| adjustable response value setting current (I <sub>l</sub> ) / for I-tripping                                      |                             |
| • minimum                                                                                                         | 900 A                       |
| • maximum                                                                                                         | 5 400 A                     |
| adjustable setting current (I <sub>ln</sub> ) / for N-tripping                                                    |                             |
| • minimum                                                                                                         | 0.2 A                       |
| • maximum                                                                                                         | 1.6 A                       |
| design of the N-conductor protection                                                                              | adjustable OFF; 20% to 160% |
| product function / grounding protection                                                                           | No                          |
| <b>Mechanical Design</b>                                                                                          |                             |
| product component                                                                                                 |                             |
| • undervoltage release                                                                                            | No                          |
| • voltage trigger                                                                                                 | No                          |
| • trip indicator                                                                                                  | 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  |

#### Connections

|                                                                 |                    |
|-----------------------------------------------------------------|--------------------|
| arrangement of electrical connectors / for main current circuit | Without connection |
| type of electrical connection / for main current circuit        | Without            |

#### Auxiliary circuit

|                                                |   |
|------------------------------------------------|---|
| number of CO contacts / for auxiliary contacts | 0 |
|------------------------------------------------|---|

#### Accessories

|                                            |     |
|--------------------------------------------|-----|
| product extension / optional / motor drive | Yes |
|--------------------------------------------|-----|

#### Environmental conditions

|                                    |        |
|------------------------------------|--------|
| 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  |

#### Environmental footprint

|                                                          |                 |
|----------------------------------------------------------|-----------------|
| Environmental Product Declaration (EPD)                  | Yes             |
| global warming potential [CO2 eq] / total                | 495 kg          |
| global warming potential [CO2 eq] / during manufacturing | 28.7 kg         |
| global warming potential [CO2 eq] / during operation     | 470 kg          |
| global warming potential [CO2 eq] / after end of life    | -4.07 kg        |
| Siemens Eco Profile (SEP)                                | Siemens EcoTech |
| reference code / according to IEC 81346-2                | Q               |

#### Approvals / Certificates

##### General Product Approval



##### General Product Approval

##### EMV

##### Test Certificates

##### Maritime application

##### Miscellaneous



##### Type Test Certificates/Test Report



##### Maritime application

##### other



##### Confirmation

##### Miscellaneous

##### Dangerous goods

##### Environment

##### Transport Information



##### 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=3VA6460-6KP31-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA6460-6KP31-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA6460-6KP31-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA6460-6KP31-0AA0)

CAX-Online-Generator

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

Tender specifications

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





