

**Siemens  
EcoTech**



circuit breaker 3VA6 UL Frame 150 breaking capacity class H 65 kA @ 480 V 3-pole, line protection ETU856, LSI,  $I_n=40$  A overload protection, 100% rated  $I_r=16$  A...40 A short-circuit protection  $I_{sd}=0.6..10 \times I_n$ ,  $I_i=1.5..12 \times I_n$  neutral conductor protection optionally with external current transformer, up to 160% ground fault alarm signaled via EFB300 or COM without connection

| Model                                                                                                                      |                                         |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| product brand name                                                                                                         | SENTRON                                 |
| product designation                                                                                                        | Molded-case circuit breaker             |
| product designation / according to UL file                                                                                 | HDAE                                    |
| 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                                                                                          | ETU856                                  |
| protection function of the overcurrent release                                                                             | LSI-G-alarm only                        |
| 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                                                                                                   | 2.4 W                                   |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole                                | 0.8 W                                   |
| mechanical service life (operating cycles) / typical                                                                       | 25 000                                  |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                                           | 14 000                                  |
| electrical endurance (operating cycles) / at AC-1 / at 690 V                                                               | 9 800                                   |
| electrical endurance (operating cycles) / at 480 V                                                                         | 14 000                                  |
| electrical endurance (operating cycles) / at 600 V                                                                         | 9 800                                   |
| 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                                                                                                                 | 2.3 kg                                  |
| Current                                                                                                                    |                                         |
| marking / according to UL 489 / 100%-rated breaker                                                                         | Yes                                     |
| operational current                                                                                                        |                                         |
| • at 40 °C                                                                                                                 | 40 A                                    |
| • at 45 °C                                                                                                                 | 40 A                                    |
| • at 50 °C                                                                                                                 | 40 A                                    |
| • at 55 °C                                                                                                                 | 40 A                                    |
| • at 60 °C                                                                                                                 | 40 A                                    |
| • at 65 °C                                                                                                                 | 40 A                                    |

|                                                                                                                    |        |
|--------------------------------------------------------------------------------------------------------------------|--------|
| • at 70 °C                                                                                                         | 40 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                                                                                                         | 2.5 kA |
| operating short-circuit current breaking capacity (I <sub>cs</sub> )                                               |        |
| • at 240 V                                                                                                         | 110 kA |
| • at 415 V                                                                                                         | 85 kA  |
| • at 690 V                                                                                                         | 2.5 kA |
| short-circuit current making capacity (I <sub>cm</sub> )                                                           |        |
| • at 240 V                                                                                                         | 242 kA |
| • at 415 V                                                                                                         | 187 kA |
| • at 690 V                                                                                                         | 3.8 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                                                                                                          | 15 A   |
| • maximum                                                                                                          | 40 A   |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic      |        |
| • minimum                                                                                                          | 0.5 s  |
| • maximum                                                                                                          | 25 s   |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>0t</sub> characteristic     |        |
| • minimum                                                                                                          | 24 A   |
| • maximum                                                                                                          | 400 A  |
| adjustable response value setting current (I <sub>sd</sub> ) / of S-trip / with I <sub>2t</sub> characteristic     |        |
| • minimum                                                                                                          | 24 A   |
| • maximum                                                                                                          | 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                                                                                                          | 60 A   |
| • maximum                                                                                                          | 480 A  |
| adjustable current response value current / for G-tripping / with standard characteristic                          |        |
| • initial value                                                                                                    | 15 A   |
| • full-scale value                                                                                                 | 40 A   |
| adjustable response value delay time (t <sub>g</sub> ) / for G-tripping / with I <sub>0t</sub> characteristic      |        |
| • minimum                                                                                                          | 0.05 s |
| • maximum                                                                                                          | 0.8 s  |
| adjustable response value setting current (I <sub>g</sub> ) / for G-tripping / with I <sub>2t</sub> characteristic |        |
| • minimum                                                                                                          | 15 A   |
| • maximum                                                                                                          | 40 A   |
| adjustable response value delay time (t <sub>g</sub> ) / for G-tripping / with I <sub>2t</sub> characteristic      |        |

|                                                   |                             |
|---------------------------------------------------|-----------------------------|
| • minimum                                         | 0.05 s                      |
| • maximum                                         | 0.8 s                       |
| adjustable setting current (InN) / for N-tripping |                             |
| • minimum                                         | 0 A                         |
| • maximum                                         | 0 A                         |
| design of the N-conductor protection              | adjustable OFF; 40% to 160% |
| product function / grounding protection           | Yes                         |

#### Mechanical Design

|                        |         |
|------------------------|---------|
| product component      |         |
| • undervoltage release | No      |
| • voltage trigger      | No      |
| • trip indicator       | No      |
| height [in]            | 7.8 in  |
| height                 | 198 mm  |
| width [in]             | 4.13 in |
| width                  | 105 mm  |
| depth [in]             | 3.39 in |
| depth                  | 86 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                | 61.814 kg       |
| global warming potential [CO2 eq] / during manufacturing | 14.6 kg         |
| global warming potential [CO2 eq] / during operation     | 48.9 kg         |
| global warming potential [CO2 eq] / after end of life    | -2.2 kg         |
| Siemens Eco Profile (SEP)                                | Siemens EcoTech |
| reference code / according to IEC 81346-2                | Q               |

#### Approvals / Certificates

##### General Product Approval



[Miscellaneous](#)

##### General Product Approval



##### other

Dangerous goods

Environment

**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=3VA6140-6KT31-2AA0>**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**<https://support.industry.siemens.com/cs/ww/en/ps/3VA6140-6KT31-2AA0>**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)**[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA6140-6KT31-2AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA6140-6KT31-2AA0)**CAX-Online-Generator**<https://www.siemens.com/cax>**Tender specifications**<https://www.siemens.com/specifications>



