

**Siemens**  
**EcoTech**



circuit breaker 3VA2 IEC Frame 160 breaking capacity class C  $I_{cu}=110 \text{ kA @ 415 V}$  4-pole, line protection ETU320, LI,  $I_n=160 \text{ A}$  overload protection  $I_r=63 \text{ A} \dots 160 \text{ A}$  short-circuit protection  $I_i=1.5 \dots 10 \times I_n$  neutral conductor protection adjustable (OFF, 50%, 100%) terminal connection



| Model                                                                                                 |                             |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                    | SENTRON                     |
| product designation                                                                                   | Molded case circuit breaker |
| design of the product                                                                                 | Line protection             |
| design of the overcurrent release                                                                     | ETU320                      |
| protection function of the overcurrent release                                                        | LI                          |
| number of poles                                                                                       | 4                           |
| General technical data                                                                                |                             |
| insulation voltage / rated value                                                                      | 800 V                       |
| operating voltage / at AC / rated value                                                               | 690 V                       |
| power loss [W] / maximum                                                                              | 25.5 W                      |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 8.5 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                       |
| product feature / for neutral conductors / upgradable/retrofitable / short-circuit and overload proof | No                          |
| ground-fault monitoring version                                                                       | Without                     |
| product function                                                                                      |                             |
| • communication function                                                                              | No                          |
| • other measurement function                                                                          | No                          |
| Net Weight                                                                                            | 2.904 kg                    |
| Current                                                                                               |                             |
| operational current                                                                                   |                             |
| • at 40 °C                                                                                            | 160 A                       |
| • at 45 °C                                                                                            | 160 A                       |
| • at 50 °C                                                                                            | 160 A                       |
| • at 55 °C                                                                                            | 160 A                       |
| • at 60 °C                                                                                            | 160 A                       |
| • at 65 °C                                                                                            | 160 A                       |
| • at 70 °C                                                                                            | 160 A                       |
| Switching capacity according to IEC 60947                                                             |                             |
| switching capacity class of the circuit breaker                                                       | C                           |
| maximum short-circuit current breaking capacity ( $I_{cu}$ )                                          |                             |
| • at 240 V                                                                                            | 150 kA                      |

|                                                                                                                                                                                                      |                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 415 V</li> <li>• at 440 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>                                                                             | 110 kA<br>110 kA<br>85 kA<br>3 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 440 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul> | 150 kA<br>110 kA<br>110 kA<br>85 kA<br>2.5 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 440 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>             | 330 kA<br>242 kA<br>242 kA<br>187 kA<br>3.7 kA |
| <b>Adjustable parameters</b>                                                                                                                                                                         |                                                |
| product feature / for L-tripping / can be switched on/off                                                                                                                                            | No                                             |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 63 A<br>160 A                                  |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>         | 0.5 s<br>17 s                                  |
| adjustable response value setting current (I <sub>l</sub> ) / for I-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                          | 240 A<br>1 600 A                               |
| adjustable setting current (I <sub>nN</sub> ) / for N-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                        | 31 A<br>160 A                                  |
| design of the N-conductor protection                                                                                                                                                                 | adjustable OFF; 50%; 100%                      |
| product function / grounding protection                                                                                                                                                              | No                                             |
| <b>Mechanical Design</b>                                                                                                                                                                             |                                                |
| product component <ul style="list-style-type: none"> <li>• undervoltage release</li> <li>• voltage trigger</li> <li>• trip indicator</li> </ul>                                                      | No<br>No<br>No                                 |
| height [in]                                                                                                                                                                                          | 7.13 in                                        |
| height                                                                                                                                                                                               | 181 mm                                         |
| width [in]                                                                                                                                                                                           | 5.51 in                                        |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded                                                                                                            | 1 x (25 - 185 mm <sup>2</sup> )                |
| width                                                                                                                                                                                                | 140 mm                                         |
| depth [in]                                                                                                                                                                                           | 3.39 in                                        |
| depth                                                                                                                                                                                                | 86 mm                                          |
| <b>Connections</b>                                                                                                                                                                                   |                                                |
| arrangement of electrical connectors / for main current circuit                                                                                                                                      | Front terminal                                 |
| type of electrical connection / for main current circuit                                                                                                                                             | double-sided box terminal                      |
| design of the surface / of the connections / on the top of the switch (N, 1, 3, 5)                                                                                                                   | tin                                            |
| design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6)                                                                                                                | tin                                            |
| <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  |

#### Environmental footprint

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



[Confirmation](#)



[Miscellaneous](#)



| General Product Approval | EMV | Test Certificates | Maritime application |
|--------------------------|-----|-------------------|----------------------|
|--------------------------|-----|-------------------|----------------------|



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)



| Maritime application | other |
|----------------------|-------|
|----------------------|-------|



[CCS \(China Classification Society\)](#)



| other | Dangerous goods | Environment |
|-------|-----------------|-------------|
|-------|-----------------|-------------|

[Confirmation](#)

[Miscellaneous](#)

[Transport Information](#)



Siemens EcoTech



[Environmental Confirmations](#)

#### Environment

[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=3VA2116-7HL46-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA2116-7HL46-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA2116-7HL46-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA2116-7HL46-0AA0)





