



circuit breaker 3VA1 IEC Frame 160 breaking capacity class S  $I_{cu}=36 \text{ kA} @ 240 \text{ V}$   
1-pole, line protection TM210, FTFM,  $I_n=16 \text{ A}$  overload protection  $I_r=16 \text{ A}$   
permanently set short-circuit protection  $I_i=20 \times I_n$  terminal connection

| Model                                                                                                 |                             |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                    | SENTRON                     |
| product designation                                                                                   | Molded case circuit breaker |
| design of the product                                                                                 | Line protection             |
| design of the overcurrent release                                                                     | TM210                       |
| protection function of the overcurrent release                                                        | LI                          |
| number of poles                                                                                       | 1                           |
| General technical data                                                                                |                             |
| insulation voltage / rated value                                                                      | 500 V                       |
| operating voltage / at DC / rated value                                                               | 125 V                       |
| operating voltage / at AC / rated value                                                               | 415 V                       |
| power loss [W] / maximum                                                                              | 3.53 W                      |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 3.53 W                      |
| mechanical service life (operating cycles) / typical                                                  | 20 000                      |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                      | 9 000                       |
| electrical endurance (operating cycles) / at AC-1 / at 690 V                                          | 6 300                       |
| 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                                                                                            | 404 g                       |
| Current                                                                                               |                             |
| operational current                                                                                   |                             |
| • at 40 °C                                                                                            | 16 A                        |
| • at 45 °C                                                                                            | 16 A                        |
| • at 50 °C                                                                                            | 16 A                        |
| • at 55 °C                                                                                            | 16 A                        |
| • at 60 °C                                                                                            | 15 A                        |
| • at 65 °C                                                                                            | 15 A                        |
| • at 70 °C                                                                                            | 15 A                        |
| Switching capacity according to IEC 60947                                                             |                             |
| switching capacity class of the circuit breaker                                                       | S                           |
| maximum short-circuit current breaking capacity ( $I_{cu}$ )                                          |                             |
| • at 240 V                                                                                            | 36 kA                       |
| • at 415 V                                                                                            | 6 kA                        |
| operating short-circuit current breaking capacity ( $I_{cs}$ )                                        |                             |

|                                                                                  |                                                                                                                                                                |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> </ul> | 36 kA<br>6 kA                                                                                                                                                  |
| short-circuit current making capacity (I <sub>cm</sub> )                         |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> </ul> | 75.5 kA<br>9 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 |

#### Adjustable parameters

|                                                                                                                   |                |
|-------------------------------------------------------------------------------------------------------------------|----------------|
| 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>                                    | 16 A<br>16 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>                                    | 1 s<br>1 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>                                    | 320 A<br>320 A |
| 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     |
| product function / grounding protection                                                                           | No             |

#### Mechanical Design

|                                                                                                                               |                                 |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 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]                                                                                                                   | 5.12 in                         |
| height                                                                                                                        | 130 mm                          |
| width [in]                                                                                                                    | 1 in                            |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded                                     | 1 x (1,5 - 70 mm <sup>2</sup> ) |
| width                                                                                                                         | 25.4 mm                         |
| depth [in]                                                                                                                    | 2.76 in                         |
| depth                                                                                                                         | 70 mm                           |

#### Connections

|                                                                                       |                            |
|---------------------------------------------------------------------------------------|----------------------------|
| arrangement of electrical connectors / for main current circuit                       | Front terminal             |
| type of electrical connection / for main current circuit                              | box terminal on both sides |
| design of the surface / of the connections / on the top of the switch (N, 1, 3, 5)    | Silver                     |
| design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) | Tin                        |

#### Auxiliary circuit

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

#### Accessories

|                                            |    |
|--------------------------------------------|----|
| product extension / optional / motor drive | No |
|--------------------------------------------|----|

#### Environmental conditions

|                                                                                                                                                                                              |                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| protection class IP / on the front                                                                                                                                                           | IP40                               |
| ambient temperature                                                                                                                                                                          |                                    |
| <ul style="list-style-type: none"> <li>• during operation / minimum</li> <li>• during operation / maximum</li> <li>• during storage / minimum</li> <li>• during storage / maximum</li> </ul> | -25 °C<br>70 °C<br>-40 °C<br>80 °C |

#### Environmental footprint

|                                                                      |         |
|----------------------------------------------------------------------|---------|
| Environmental Product Declaration (EPD)                              | Yes     |
| global warming potential [CO <sub>2</sub> eq] / total                | 63.6 kg |
| global warming potential [CO <sub>2</sub> eq] / during manufacturing | 1.81 kg |
| global warming potential [CO <sub>2</sub> eq] / during operation     | 62 kg   |

|                                                       |           |
|-------------------------------------------------------|-----------|
| global warming potential [CO2 eq] / after end of life | -0.282 kg |
| reference code / according to IEC 81346-2             | Q         |

#### Approvals / Certificates

##### General Product Approval



[Miscellaneous](#)



[Confirmation](#)

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



[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

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



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

[Miscellaneous](#)

[Confirmation](#)



#### Environment

[Environmental Confirmations](#)

[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=3VA1196-4ED16-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1196-4ED16-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1196-4ED16-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1196-4ED16-0AA0)

##### CAX-Online-Generator

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

##### Tender specifications

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

##### Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP='HAUPT'></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>)





