



circuit breaker 3VA1 IEC Frame 160 breaking capacity class M Icu=55 kA @ 415 V  
3-pole, starter protection TM110M, FM, In=1 A without overload protection short-circuit protection Ii=15 x In terminal connection

| Model                                                                                                 |                             |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                    | SENTRON                     |
| product designation                                                                                   | Molded case circuit breaker |
| design of the product                                                                                 | Starter protection          |
| design of the overcurrent release                                                                     | TM110M                      |
| protection function of the overcurrent release                                                        | I                           |
| 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                                                                              | 0.39 W                      |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 0.13 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                                                                                            | 0.9 kg                      |
| Current                                                                                               |                             |
| operational current                                                                                   |                             |
| • at 40 °C                                                                                            | 1 A                         |
| • at 45 °C                                                                                            | 1 A                         |
| • at 50 °C                                                                                            | 1 A                         |
| • at 55 °C                                                                                            | 1 A                         |
| • at 60 °C                                                                                            | 1 A                         |
| • at 65 °C                                                                                            | 1 A                         |
| • at 70 °C                                                                                            | 1 A                         |
| Switching capacity according to IEC 60947                                                             |                             |
| switching capacity class of the circuit breaker                                                       | M                           |
| maximum short-circuit current breaking capacity (Icu)                                                 |                             |
| • at 240 V                                                                                            | 85 kA                       |
| • at 415 V                                                                                            | 55 kA                       |
| • at 440 V                                                                                            | 36 kA                       |
| • at 500 V                                                                                            | 5 kA                        |
| • at 690 V                                                                                            | 5 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>                                                                     | 85 kA<br>55 kA<br>36 kA<br>5 kA<br>5 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> <li>• at 440 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>            | 187 kA<br>121 kA<br>75.6 kA<br>7.5 kA<br>7.5 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>Adjustable parameters</b>                                                                                                                                                                                     |                                                                                                                                                                |
| 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>                                                      | 16 A<br>16 A                                                                                                                                                   |
| adjustable setting current (I <sub>N</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                                                                                                                                                             |
| <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]                                                                                                                                                                                                      | 5.12 in                                                                                                                                                        |
| height                                                                                                                                                                                                           | 130 mm                                                                                                                                                         |
| width [in]                                                                                                                                                                                                       | 3 in                                                                                                                                                           |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded                                                                                                                        | 1 x (1,5 - 70 mm <sup>2</sup> )                                                                                                                                |
| width                                                                                                                                                                                                            | 76.2 mm                                                                                                                                                        |
| depth [in]                                                                                                                                                                                                       | 2.76 in                                                                                                                                                        |
| depth                                                                                                                                                                                                            | 70 mm                                                                                                                                                          |
| <b>Connections</b>                                                                                                                                                                                               |                                                                                                                                                                |
| 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                                                                                                                                                            |
| <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 <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                                                                                                                             |
| <b>Environmental footprint</b>                                                                                                                                                                                   |                                                                                                                                                                |
| Environmental Product Declaration (EPD)                                                                                                                                                                          | Yes                                                                                                                                                            |
| Global Warming Potential [CO <sub>2</sub> eq] / total                                                                                                                                                            | 190 kg                                                                                                                                                         |
| Global Warming Potential [CO <sub>2</sub> eq] / during manufacturing                                                                                                                                             | 4.67 kg                                                                                                                                                        |
| Global Warming Potential [CO <sub>2</sub> eq] / during operation                                                                                                                                                 | 186 kg                                                                                                                                                         |
| Global Warming Potential [CO <sub>2</sub> eq] / after end of life                                                                                                                                                | -0.826 kg                                                                                                                                                      |
| reference code / according to IEC 81346-2                                                                                                                                                                        | Q                                                                                                                                                              |
| <b>Approvals / Certificates</b>                                                                                                                                                                                  |                                                                                                                                                                |

## General Product Approval



[Confirmation](#)



[Miscellaneous](#)

General Product Approval

EMV

Test Certificates

Marine / Shipping



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other

Environment

[Miscellaneous](#)

[Confirmation](#)

[Miscellaneous](#)



[Environmental Confirmations](#)

Environment

[Environmental Confirmations](#)

## Further information

Information on the packaging

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

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

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

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA1181-5MG36-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1181-5MG36-0AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1181-5MG36-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1181-5MG36-0AA0)

CAX-Online-Generator

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

Tender specifications

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





