



circuit breaker 3VA1 IEC Frame 160 breaking capacity class H Icu=70 kA @ 415 V  
3-pole, starter protection TM120M, AM, In=80 A without overload protection short-  
circuit protection Ii=7...16 x In nut keeper kit

| Model                                                                                                 |                             |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                    | SENTRON                     |
| product designation                                                                                   | Molded case circuit breaker |
| design of the product                                                                                 | Starter protection          |
| design of the overcurrent release                                                                     | TM120M                      |
| 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                                                                              | 19.2 W                      |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 6.4 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                                                                                            | 930 g                       |
| Current                                                                                               |                             |
| operational current                                                                                   |                             |
| • at 40 °C                                                                                            | 80 A                        |
| • at 45 °C                                                                                            | 80 A                        |
| • at 50 °C                                                                                            | 80 A                        |
| • at 55 °C                                                                                            | 78 A                        |
| • at 60 °C                                                                                            | 77 A                        |
| • at 65 °C                                                                                            | 75 A                        |
| • at 70 °C                                                                                            | 74 A                        |
| Switching capacity according to IEC 60947                                                             |                             |
| switching capacity class of the circuit breaker                                                       | H                           |
| maximum short-circuit current breaking capacity (Icu)                                                 |                             |
| • at 240 V                                                                                            | 100 kA                      |
| • at 415 V                                                                                            | 70 kA                       |
| • at 440 V                                                                                            | 55 kA                       |
| • at 500 V                                                                                            | 5 kA                        |

|                                                                                                                                                                                              |                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 690 V</li> </ul>                                                                                                                                 | 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>                                                 | 100 kA<br>70 kA<br>40 kA<br>5 kA<br>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>                                                 | 220 kA<br>154 kA<br>121 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 (Ii) / for I-tripping                                                                                                                              |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                                                                               | 560 A<br>1 280 A                                                                                                                                               |
| adjustable setting current (InN) / for N-tripping                                                                                                                                            |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                                                                               | 80 A<br>80 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                                                                                                                                                           |
| 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                                                                                                                                     | nut keeper kit on both ends                                                                                                                                    |
| type of connectable conductor cross-sections / for flat-bar terminal connection / minimum                                                                                                    | 12 x 1 mm                                                                                                                                                      |
| type of connectable conductor cross-sections / for flat-bar terminal connection / maximum                                                                                                    | 17 x 6,5 mm                                                                                                                                                    |
| 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 [CO2 eq] / total                                                                                                                                                    | 190 kg                                                                                                                                                         |

|                                                          |           |
|----------------------------------------------------------|-----------|
| global warming potential [CO2 eq] / during manufacturing | 4.67 kg   |
| global warming potential [CO2 eq] / during operation     | 186 kg    |
| global warming potential [CO2 eq] / after end of life    | -0.826 kg |
| reference code / according to IEC 81346-2                | Q         |

#### Approvals / Certificates

##### General Product Approval



[Confirmation](#)



[Miscellaneous](#)

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



[Special Test Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

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



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

[Confirmation](#)



[Miscellaneous](#)

#### 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=3VA1180-6MH32-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1180-6MH32-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1180-6MH32-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1180-6MH32-0AA0)

##### CAX-Online-Generator

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

##### Tender specifications

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





