



circuit breaker 3VA1 IEC Frame 160 breaking capacity class M Icu=55 kA @ 415 V  
 4-pole, line protection TM210, FTFM, In=20 A overload protection Ir=20 A  
 permanently set short-circuit protection Ii=16 x In neutral conductor protection  
 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   | TM210                       |
| protection function of the overcurrent release  | LI                          |
| number of poles   | 4                           |
| General technical data  |                             |
| insulation voltage / rated value  | 800 V                       |
| operating voltage / at DC / rated value   | 600 V                       |
| operating voltage / at AC / rated value   | 690 V                       |
| power loss [W] / maximum  | 12 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  | 1.17 kg                     |
| Current   |                             |
| operational current   |                             |
| • at 40 °C  | 20 A                        |
| • at 45 °C  | 20 A                        |
| • at 50 °C  | 20 A                        |
| • at 55 °C  | 20 A                        |
| • at 60 °C  | 19 A                        |
| • at 65 °C  | 19 A                        |
| • at 70 °C  | 19 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  | 10 kA                       |
| • at 690 V  | 10 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 (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> | 187 kA<br>121 kA<br>75.6 kA<br>17 kA<br>17 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>                                    | 20 A<br>20 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>                                    | 20 A<br>20 A   |
| design of the N-conductor protection  | 100%           |
| 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]  | 4 in                            |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded                                     | 1 x (1,5 - 70 mm <sup>2</sup> ) |
| width   | 101.6 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 | Yes |
|--|-----|

#### Environmental conditions

|  |        |
|--|--------|
| protection class IP / on the front   | IP40   |
| ambient temperature  |        |
| <ul style="list-style-type: none"> <li>• during operation / minimum</li> </ul> | -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                | 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

[KC](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

#### Test Certificates

#### Maritime application

[Special Test Certificate](#)



#### Maritime application

#### other

#### Environment

[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?mifb=3VA1120-5GD46-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1120-5GD46-0AA0>

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

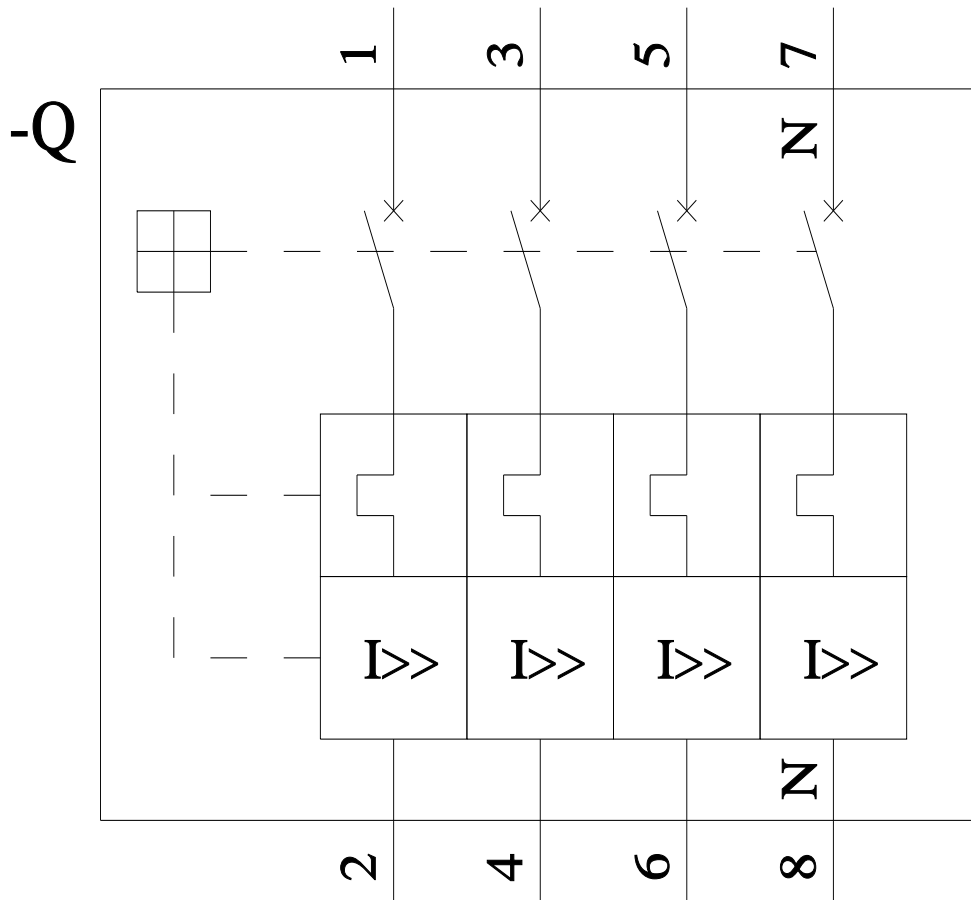
[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mifb=3VA1120-5GD46-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mifb=3VA1120-5GD46-0AA0)

#### CAX-Online-Generator

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

#### Tender specifications

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



last modified:

8/7/2025



