

Siemens  
EcoTech



circuit breaker 3VA1 IEC Frame 100 breaking capacity class N Icu=25 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 N conductor unprotected nut  
keeper kit

| 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                        |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 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                                                                                            | 1.177 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                                                       | N                           |
| maximum short-circuit current breaking capacity (Icu)                                                 |                             |

|                                                                                                                                                                                                      |                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>                                                         | 36 kA<br>25 kA<br>16 kA<br>5 kA<br>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> | 36 kA<br>25 kA<br>16 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>             | 75.5 kA<br>52.5 kA<br>32 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 |

#### Adjustable parameters

|                                                                                                                                                                         |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| product feature / for L-tripping / can be switched on/off                                                                                                               | No             |
| adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul> | 20 A<br>20 A   |
| adjustable response value delay time (tr) / for L-tripping / with I2t characteristic <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>     | 1 s<br>1 s     |
| adjustable response value setting current (Ii) / for I-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                          | 320 A<br>320 A |
| adjustable setting current (InN) / for N-tripping <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                        | 0 A<br>0 A     |
| design of the N-conductor protection                                                                                                                                    | without        |
| 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           |
| width                                                                                                                                           | 101.5 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                                  | 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                         |

#### Auxiliary circuit

|                                                          |           |
|----------------------------------------------------------|-----------|
| number of CO contacts / for auxiliary contacts           | 0         |
| <b>Accessories</b>                                       |           |
| product extension / optional / motor drive               | No        |
| <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     |
| <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         |
| <b>Approvals / Certificates</b>                          |           |
| <b>General Product Approval</b>                          |           |



[Miscellaneous](#)



[Confirmation](#)

| General Product Approval                                                                        | EMV                                                                                 | Test Certificates                                                                          |                                          |                                                    |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------|
| <br>EG-Konf. |  | <br>RCM | <a href="#">Special Test Certificate</a> | <a href="#">Type Test Certificates/Test Report</a> |
|                                                                                                 |                                                                                     |                                                                                            | <a href="#">Miscellaneous</a>            |                                                    |

| Maritime application                                                                       |                                                                                                          |                                                                                            |                                                                                            |                                                                                               |
|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <br>ABS | <br>BUREAU<br>VERITAS | <br>DNV | <br>LRS | <br>RMRS |
|                                                                                            |                                                                                                          |                                                                                            |                                                                                            | <a href="#">CCS (China Classification Society)</a>                                            |

| other                         | Environment                  |                                                                                     |                                             |                                                                                       |
|-------------------------------|------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------|
| <a href="#">Miscellaneous</a> | <a href="#">Confirmation</a> |  | <a href="#">Environmental Confirmations</a> |  |
|                               |                              |                                                                                     |                                             | <a href="#">Environmental Confirmations</a>                                           |

| Environment                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |

| Further information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Information on the packaging<br/> <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a></p> <p>Information for data generation and storage<br/> <a href="https://support.industry.siemens.com/cs/ww/en/view/109995012">https://support.industry.siemens.com/cs/ww/en/view/109995012</a></p> <p>Information- and Downloadcenter (Catalogs, Brochures,...)<br/> <a href="https://www.siemens.com/lowvoltage/catalogs">https://www.siemens.com/lowvoltage/catalogs</a></p> |

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA1020-3ED42-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1020-3ED42-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1020-3ED42-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1020-3ED42-0AA0)

CAX-Online-Generator

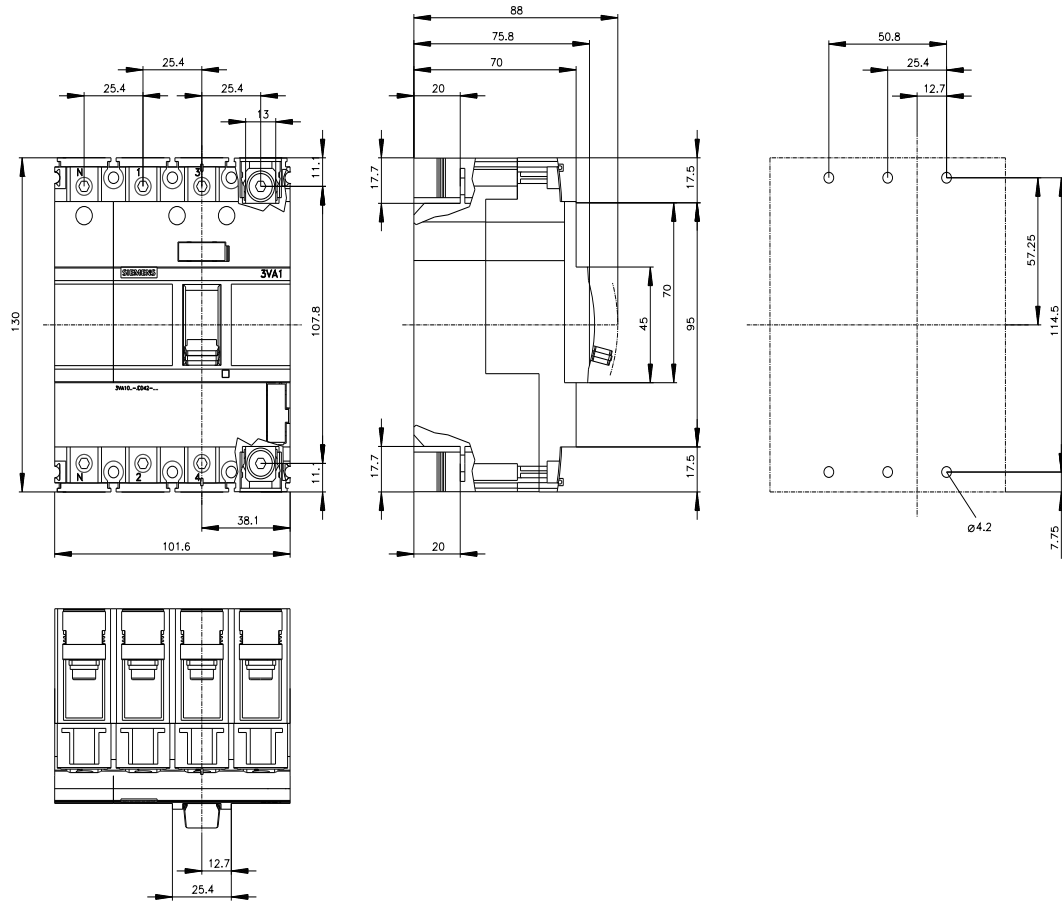
<https://www.siemens.com/cax>

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>)





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