



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 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                        |
| 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  | 1.26 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)   |                             |
| • at 240 V  | 36 kA                       |
| • at 415 V  | 25 kA                       |
| • at 440 V  | 16 kA                       |

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• at 500 V</li> <li>• at 690 V</li> </ul>   | 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>             | 75.6 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 (I <sub>r</sub> ) / of the L-trip / with I <sup>2</sup> t 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 I <sup>2</sup> t 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     |
| 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                            |
| 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 | No |
|--|----|

#### Environmental conditions

|                                    |      |
|------------------------------------|------|
| 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  |

### 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



[Miscellaneous](#)



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



[Special Test Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



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



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



| other | Environment |
|-------|-------------|
|-------|-------------|

[Confirmation](#)

[Miscellaneous](#)

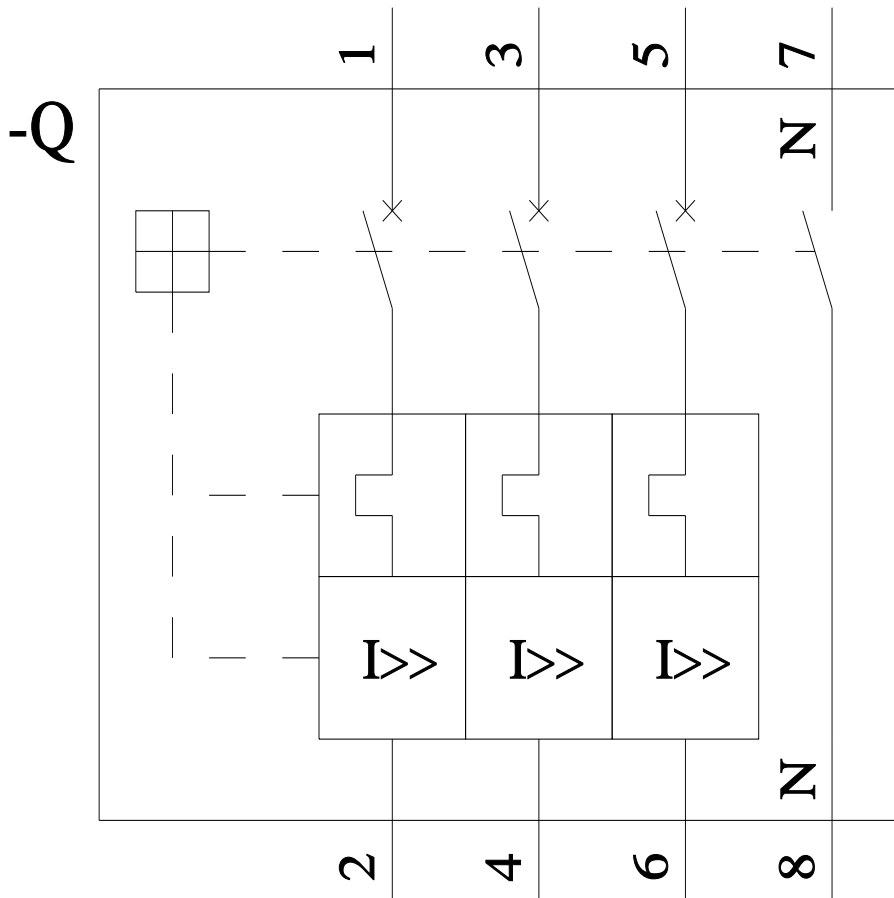
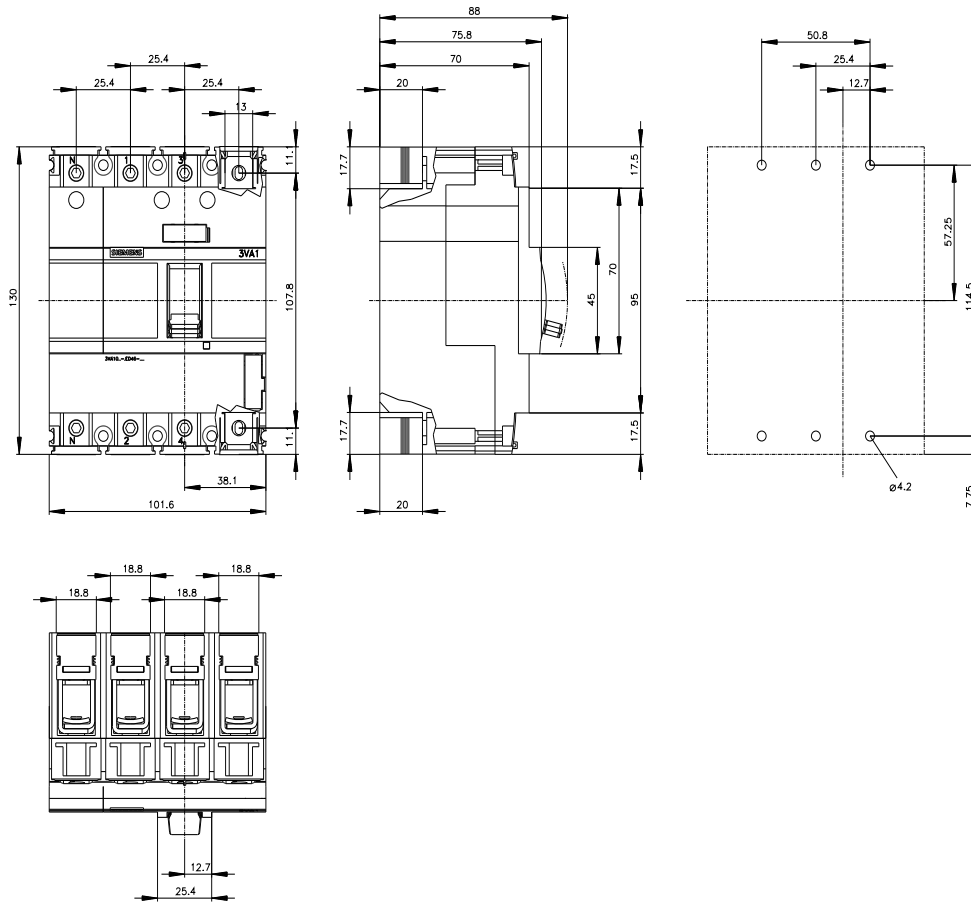


[Environmental Confirmations](#)

[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=3VA1020-3ED46-0AA0>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3VA1020-3ED46-0AA0>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)  
[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1020-3ED46-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1020-3ED46-0AA0)
- CAX-Online-Generator  
<https://www.siemens.com/cax>
- Tender specifications  
<https://www.siemens.com/specifications>



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