



circuit breaker 3VA1 IEC Frame 630 breaking capacity class M Icu=55 kA @ 415 V  
4-pole, line protection TM220, ATFM, In=500 A overload protection Ir=350 A...500  
A short-circuit protection Ii=10 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   | TM220                       |
| 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  | 122.7 W                     |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole           | 40.9 W                      |
| mechanical service life (operating cycles) / typical  | 20 000                      |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                      | 4 000                       |
| electrical endurance (operating cycles) / at AC-1 / at 690 V  | 3 000                       |
| 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  | 6.812 kg                    |
| Current   |                             |
| operational current   |                             |
| • at 40 °C  | 500 A                       |
| • at 45 °C  | 500 A                       |
| • at 50 °C  | 500 A                       |
| • at 55 °C  | 488 A                       |
| • at 60 °C  | 476 A                       |
| • at 65 °C  | 464 A                       |
| • at 70 °C  | 452 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  | 55 kA                       |

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• at 500 V</li> <li>• at 690 V</li> </ul>   | <p>36 kA</p> <p>7 kA</p>   |
| 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> | <p>85 kA</p> <p>55 kA</p> <p>55 kA</p> <p>36 kA</p> <p>5 kA</p>  |
| 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> | <p>187 kA</p> <p>121 kA</p> <p>121 kA</p> <p>75.5 kA</p> <p>11.9 kA</p>  |
| 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>                                     | <p>350 A</p> <p>500 A</p>     |
| 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>                                     | <p>1 s</p> <p>1 s</p>         |
| 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>                                     | <p>5 000 A</p> <p>5 000 A</p> |
| adjustable setting current (I <sub>nN</sub> ) / for N-tripping   |                               |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                     | <p>0 A</p> <p>0 A</p>         |
| 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> | <p>No</p> <p>No</p> <p>No</p> |
| height [in]   | 9.76 in                       |
| height  | 248 mm                        |
| width [in]  | 7.24 in                       |
| width   | 184 mm                        |
| depth [in]  | 4.33 in                       |
| depth   | 110 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 | 20 x 1 mm                   |
| type of connectable conductor cross-sections / for flat-bar terminal connection / maximum | 35 x 10 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)     | Silver                      |

#### 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                |        |
| • during operation / minimum       | -25 °C |
| • during operation / maximum       | 70 °C  |
| • during storage / minimum         | -40 °C |
| • during storage / maximum         | 80 °C  |

| Environmental footprint                                  |         |
|--|---------|
| global warming potential [CO2 eq] / total                | 473 kg  |
| global warming potential [CO2 eq] / during manufacturing | 23.9 kg |
| global warming potential [CO2 eq] / during operation     | 450 kg  |
| global warming potential [CO2 eq] / after end of life    | -2.9 kg |
| reference code / according to IEC 81346-2                | Q       |

### Approvals / Certificates

#### General Product Approval



[Miscellaneous](#)



[Confirmation](#)

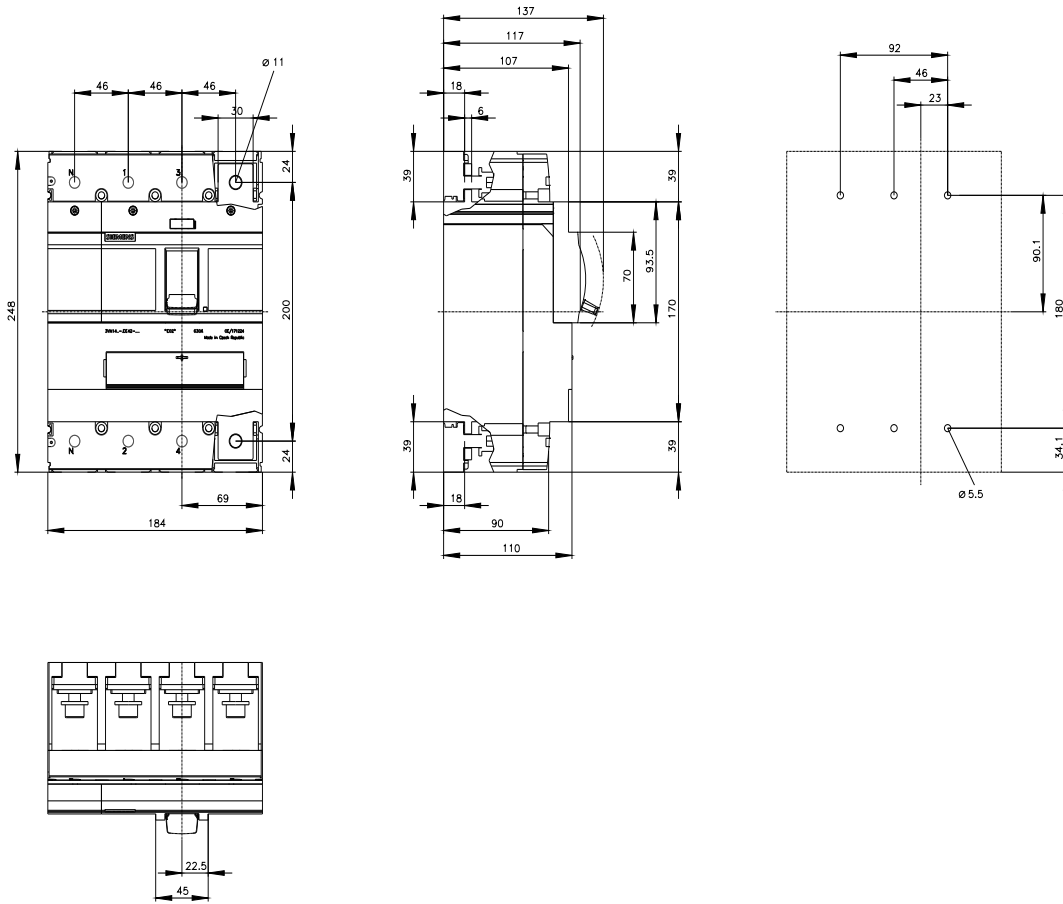
| General Product Approval | EMV      | Test Certificates |  |  |
|--------------------------|----------|-------------------|--|--|
|                          |          |                   | <a href="#">Special Test Certificate</a> | <a href="#">Miscellaneous</a>                      |
|           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

| Maritime application | other |  |  |                               |
|----------------------|-------|--|--|-------------------------------|
|                      |       |  | <a href="#">CCS (China Classification Society)</a> | <a href="#">Miscellaneous</a> |
|                      |       |  |  | <a href="#">Confirmation</a>  |

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

### 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=3VA1450-5EE42-0AA0>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3VA1450-5EE42-0AA0>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)  
[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1450-5EE42-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1450-5EE42-0AA0)
- 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=)



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