



circuit breaker 3VA1 IEC Frame 160 breaking capacity class S Icu=36 kA @ 415 V  
4-pole, line protection TM220, ATFM, In=160 A overload protection Ir=112 A...160  
A short-circuit protection Ii=10 x In neutral conductor protection 50% 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  | 38 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  | 1.2 kg                      |
| Current   |                             |
| operational current   |                             |
| • at 40 °C  | 160 A                       |
| • at 45 °C  | 160 A                       |
| • at 50 °C  | 160 A                       |
| • at 55 °C  | 158 A                       |
| • at 60 °C  | 155 A                       |
| • at 65 °C  | 153 A                       |
| • at 70 °C  | 150 A                       |
| Switching capacity according to IEC 60947   |                             |
| switching capacity class of the circuit breaker   | S                           |
| maximum short-circuit current breaking capacity (Icu)   |                             |
| • at 240 V  | 55 kA                       |
| • at 415 V  | 36 kA                       |
| • at 440 V  | 25 kA                       |
| • at 500 V  | 7 kA                        |
| • at 690 V  | 7 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> | 55 kA<br>36 kA<br>25 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> | 121 kA<br>75.5 kA<br>52.5 kA<br>11.9 kA<br>11.9 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>           | 112 A<br>160 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>           | 1 600 A<br>1 600 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       |
| design of the N-conductor protection   | 50%                |
| 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 |
|--|---|

#### 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

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

[Confirmation](#)



EG-Konf.



[Miscellaneous](#)

[Special Test Certificate](#)

#### Test Certificates

Maritime application

[Type Test Certificates/Test Report](#)



#### Maritime application

other

Environment

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

[Miscellaneous](#)

[Confirmation](#)



[Environmental Confirmations](#)

[Environmental Confirmations](#)

#### Environment



#### 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=3VA1116-4FE42-0AA0>

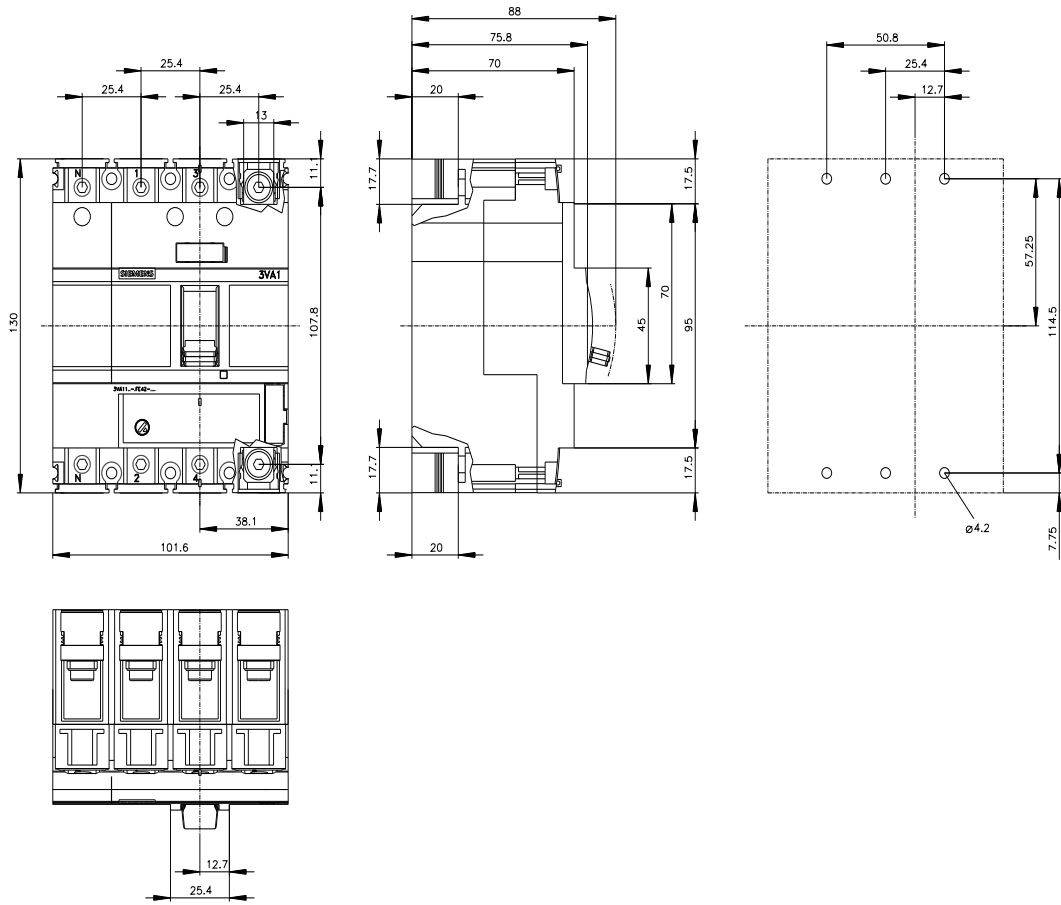
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1116-4FE42-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1116-4FE42-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1116-4FE42-0AA0)

CAX-Online-Generator





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