



circuit breaker 3VA1 IEC Frame 160 breaking capacity class H  $I_{cu}=70 \text{ kA} @ 415 \text{ V}$   
3-pole, line protection TM220, ATFM,  $I_n=80 \text{ A}$  overload protection  $I_r=56 \text{ A} \dots 80 \text{ A}$   
short-circuit protection  $I_i=10 \times I_n$  terminal connection

| 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                                                                                        | 3                           |
| General technical data                                                                                 |                             |
| insulation voltage / rated value                                                                       | 800 V                       |
| operating voltage / at DC / rated value                                                                | 500 V                       |
| operating voltage / at AC / rated value                                                                | 690 V                       |
| power loss [W] / maximum                                                                               | 19.2 W                      |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole            | 6.4 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/retrofittable / short-circuit and overload proof | No                          |
| ground-fault monitoring version                                                                        | Without                     |
| product function                                                                                       |                             |
| • communication function                                                                               | No                          |
| • other measurement function                                                                           | No                          |
| Net Weight                                                                                             | 1.025 kg                    |
| Current                                                                                                |                             |
| operational current                                                                                    |                             |
| • at 40 °C                                                                                             | 80 A                        |
| • at 45 °C                                                                                             | 80 A                        |
| • at 50 °C                                                                                             | 80 A                        |
| • at 55 °C                                                                                             | 78 A                        |
| • at 60 °C                                                                                             | 77 A                        |
| • at 65 °C                                                                                             | 75 A                        |
| • at 70 °C                                                                                             | 74 A                        |
| Switching capacity according to IEC 60947                                                              |                             |
| switching capacity class of the circuit breaker                                                        | H                           |
| maximum short-circuit current breaking capacity ( $I_{cu}$ )                                           |                             |
| • at 240 V                                                                                             | 100 kA                      |
| • at 415 V                                                                                             | 70 kA                       |
| • at 440 V                                                                                             | 55 kA                       |
| • at 500 V                                                                                             | 10 kA                       |
| • at 690 V                                                                                             | 10 kA                       |

|                                                                                           |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating short-circuit current breaking capacity (Ics)                                   |                                                                                                                                                                |
| • at 240 V                                                                                | 100 kA                                                                                                                                                         |
| • at 415 V                                                                                | 70 kA                                                                                                                                                          |
| • at 440 V                                                                                | 40 kA                                                                                                                                                          |
| • at 500 V                                                                                | 5 kA                                                                                                                                                           |
| • at 690 V                                                                                | 5 kA                                                                                                                                                           |
| short-circuit current making capacity (Icm)                                               |                                                                                                                                                                |
| • at 240 V                                                                                | 220 kA                                                                                                                                                         |
| • at 415 V                                                                                | 154 kA                                                                                                                                                         |
| • at 440 V                                                                                | 121 kA                                                                                                                                                         |
| • at 500 V                                                                                | 17 kA                                                                                                                                                          |
| • at 690 V                                                                                | 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 |
| <b>Adjustable parameters</b>                                                              |                                                                                                                                                                |
| product feature / for L-tripping / can be switched on/off                                 | No                                                                                                                                                             |
| adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic  |                                                                                                                                                                |
| • minimum                                                                                 | 56 A                                                                                                                                                           |
| • maximum                                                                                 | 80 A                                                                                                                                                           |
| adjustable response value delay time (tr) / for L-tripping / with I2t characteristic      |                                                                                                                                                                |
| • minimum                                                                                 | 1 s                                                                                                                                                            |
| • maximum                                                                                 | 1 s                                                                                                                                                            |
| adjustable response value setting current (Ii) / for I-tripping                           |                                                                                                                                                                |
| • minimum                                                                                 | 800 A                                                                                                                                                          |
| • maximum                                                                                 | 800 A                                                                                                                                                          |
| adjustable setting current (InN) / for N-tripping                                         |                                                                                                                                                                |
| • minimum                                                                                 | 0 A                                                                                                                                                            |
| • maximum                                                                                 | 0 A                                                                                                                                                            |
| product function / grounding protection                                                   | No                                                                                                                                                             |
| <b>Mechanical Design</b>                                                                  |                                                                                                                                                                |
| product component                                                                         |                                                                                                                                                                |
| • undervoltage release                                                                    | No                                                                                                                                                             |
| • voltage trigger                                                                         | No                                                                                                                                                             |
| • trip indicator                                                                          | No                                                                                                                                                             |
| height [in]                                                                               | 5.12 in                                                                                                                                                        |
| height                                                                                    | 130 mm                                                                                                                                                         |
| width [in]                                                                                | 3 in                                                                                                                                                           |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded | 1 x (1,5 - 70 mm²)                                                                                                                                             |
| width                                                                                     | 76.2 mm                                                                                                                                                        |
| depth [in]                                                                                | 2.76 in                                                                                                                                                        |
| depth                                                                                     | 70 mm                                                                                                                                                          |
| <b>Connections</b>                                                                        |                                                                                                                                                                |
| 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                                                                                                                                                            |
| <b>Auxiliary circuit</b>                                                                  |                                                                                                                                                                |
| number of CO contacts / for auxiliary contacts                                            | 0                                                                                                                                                              |
| <b>Accessories</b>                                                                        |                                                                                                                                                                |
| product extension / optional / motor drive                                                | Yes                                                                                                                                                            |
| <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

#### 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 | Marine / Shipping |
|--------------------------|-----|-------------------|-------------------|
|--------------------------|-----|-------------------|-------------------|



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Miscellaneous](#)



| Marine / Shipping | other |
|-------------------|-------|
|-------------------|-------|



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

[Confirmation](#)

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

[Miscellaneous](#)

[Miscellaneous](#)



[Environmental Confirmations](#)

[Environmental Confirmations](#)

#### Further information

##### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/lowvoltage/catalogs>

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA1180-6EE36-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1180-6EE36-0AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1180-6EE36-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1180-6EE36-0AA0)

##### CAX-Online-Generator

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

##### Tender specifications

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





