



circuit breaker 3VA1 IEC Frame 160 breaking capacity class M Icu=55 kA @ 415 V  
3-pole, line protection TM220, ATFM, In=20 A overload protection Ir=14 A...20 A  
short-circuit protection Ii=16 x In 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                                                                                       | 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                                                                              | 12 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                                                                                            | 952 g                       |
| 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                                                       | M                           |
| maximum short-circuit current breaking capacity (Icu)                                                 |                             |
| • at 240 V                                                                                            | 85 kA                       |
| • at 415 V                                                                                            | 55 kA                       |
| • at 440 V                                                                                            | 36 kA                       |
| • at 500 V                                                                                            | 10 kA                       |
| • at 690 V                                                                                            | 10 kA                       |

|                                                         |                                                                                                                                                                |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating short-circuit current breaking capacity (Ics) |                                                                                                                                                                |
| • at 240 V                                              | 85 kA                                                                                                                                                          |
| • at 415 V                                              | 55 kA                                                                                                                                                          |
| • at 440 V                                              | 36 kA                                                                                                                                                          |
| • at 500 V                                              | 5 kA                                                                                                                                                           |
| • at 690 V                                              | 5 kA                                                                                                                                                           |
| short-circuit current making capacity (Icm)             |                                                                                                                                                                |
| • at 240 V                                              | 187 kA                                                                                                                                                         |
| • at 415 V                                              | 121 kA                                                                                                                                                         |
| • at 440 V                                              | 75.6 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 |

#### 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 |       |
| • minimum                                                                                | 14 A  |
| • maximum                                                                                | 20 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                                                                                | 320 A |
| • maximum                                                                                | 320 A |
| adjustable setting current (InN) / for N-tripping                                        |       |
| • minimum                                                                                | 0 A   |
| • maximum                                                                                | 0 A   |
| product function / grounding protection                                                  | No    |

#### Mechanical Design

|                        |         |
|------------------------|---------|
| product component      |         |
| • undervoltage release | No      |
| • voltage trigger      | No      |
| • trip indicator       | No      |
| height [in]            | 5.12 in |
| height                 | 130 mm  |
| width [in]             | 3 in    |
| width                  | 76.2 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



[Confirmation](#)



[Miscellaneous](#)

##### General Product Approval

##### EMV

##### Test Certificates

[KC](#)



[Special Test Certificate](#)

[Miscellaneous](#)

##### Test Certificates

##### Maritime application

[Type Test Certificates/Test Report](#)



##### Maritime application

##### other

##### Environment

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

[Confirmation](#)



[Miscellaneous](#)



#### Environment

[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=3VA1120-5EE32-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1120-5EE32-0AA0>

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

[https://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1120-5EE32-0AA0](https://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1120-5EE32-0AA0)

##### CAX-Online-Generator

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





