



circuit breaker 3VA5 UL frame 125 breaking capacity class M 35kA @ 480 V 3-pole, line protection TM230, FTAM, In=20A overload protection Ir=20A fixed short-circuit protection li=7.5...15 x In without connection

### Model

|                                                                                                                            |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                                         | SETRON                      |
| product designation                                                                                                        | Molded-case circuit breaker |
| product designation / according to UL file                                                                                 | MEAS                        |
| design of the product                                                                                                      | System protection           |
| design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) | Yes                         |
| design of the load switch / according to UL 489 / High-Intensity-Discharge circuit breaker (HID Type)                      | Yes                         |
| design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)                                | Yes                         |
| design of the overcurrent release                                                                                          | TM230                       |
| protection function of the overcurrent release                                                                             | LI                          |
| number of poles                                                                                                            | 3                           |

### General technical data

|                                                                                                       |         |
|-------------------------------------------------------------------------------------------------------|---------|
| insulation voltage / rated value                                                                      | 800 V   |
| Max. rated operational voltage Ue with DC                                                             | 500 V   |
| operating voltage / at AC / rated value                                                               | 690 V   |
| power loss [W] / maximum                                                                              | 12.2 W  |
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole        | 4.07 W  |
| mechanical service life (operating cycles) / typical                                                  | 20 000  |
| Electrical endurance (switching cycles) / at AC-1 / at 380/415 V 50/60 Hz                             | 8 000   |
| Electrical endurance (switching cycles) / at AC-1 / at 690 V 50/60 Hz                                 | 4 000   |
| electrical endurance (operating cycles) / at 480 V                                                    | 8 000   |
| electrical endurance (operating cycles) / at 600 V                                                    | 4 000   |
| 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                                                                                            | 967 g   |

### Current

|                                                    |      |
|----------------------------------------------------|------|
| marking / according to UL 489 / 100%-rated breaker | No   |
| operational current                                |      |
| • at 40 °C                                         | 20 A |
| • at 45 °C                                         | 20 A |
| • at 50 °C                                         | 19 A |
| • at 55 °C                                         | 19 A |

|                                                                                                                               |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 60 °C</li> <li>• at 65 °C</li> <li>• at 70 °C</li> </ul>                          | 19 A<br>18 A<br>18 A                                                                                                                                           |
| <b>Switching capacity according to IEC 60947</b>                                                                              |                                                                                                                                                                |
| switching capacity class of the circuit breaker                                                                               | M                                                                                                                                                              |
| maximum short-circuit current breaking capacity (I <sub>cu</sub> )                                                            |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>                          | 85 kA<br>55 kA<br>7 kA                                                                                                                                         |
| operating short-circuit current breaking capacity (I <sub>cs</sub> )                                                          |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>                          | 85 kA<br>55 kA<br>5 kA                                                                                                                                         |
| short-circuit current making capacity (I <sub>cm</sub> )                                                                      |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>                          | 187 kA<br>121 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 |
| <b>Switching capacity according to UL 489</b>                                                                                 |                                                                                                                                                                |
| current breaking capacity                                                                                                     |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 480 V</li> <li>• at 600 Y/347 V</li> </ul>                    | 85 kA<br>35 kA<br>18 kA                                                                                                                                        |
| <b>Adjustable parameters</b>                                                                                                  |                                                                                                                                                                |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic             |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                | 20 A<br>20 A                                                                                                                                                   |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> 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>l</sub> ) / for I-tripping                                                  |                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                | 150 A<br>300 A                                                                                                                                                 |
| adjustable absolute value 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                                                                                                                                                     |
| adjustable current response value current / of the current-dependent overload release                                         | 20 ... 20 A                                                                                                                                                    |
| Ground fault protection / tripping switchable / I <sub>2t</sub> =ON/OFF                                                       | No                                                                                                                                                             |
| <b>Mechanical Design</b>                                                                                                      |                                                                                                                                                                |
| 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]                                                                                                                   | 5.51 in                                                                                                                                                        |
| height                                                                                                                        | 140 mm                                                                                                                                                         |
| width [in]                                                                                                                    | 3 in                                                                                                                                                           |
| width                                                                                                                         | 76.2 mm                                                                                                                                                        |
| depth [in]                                                                                                                    | 3.01 in                                                                                                                                                        |
| depth                                                                                                                         | 76.5 mm                                                                                                                                                        |
| <b>Connections</b>                                                                                                            |                                                                                                                                                                |
| arrangement of electrical connectors / for main current circuit                                                               | Without connection                                                                                                                                             |
| type of electrical connection / for main current circuit                                                                      | Without                                                                                                                                                        |
| <b>Auxiliary circuit</b>                                                                                                      |                                                                                                                                                                |
| number of CO contacts / for auxiliary contacts                                                                                | 0                                                                                                                                                              |
| <b>Accessories</b>                                                                                                            |                                                                                                                                                                |
| 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  |

## Certificates

|                                           |   |
|-------------------------------------------|---|
| reference code / according to IEC 81346-2 | Q |
|-------------------------------------------|---|

### General Product Approval



[Confirmation](#)



### General Product Approval

### EMC

### Declaration of Conformity

### Test Certificates

[Miscellaneous](#)



[Miscellaneous](#)

### Test Certificates

### Marine / Shipping

### other

[Special Test Certificate](#)



[Miscellaneous](#)

[Miscellaneous](#)

## Further information

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=3VA5120-5EC31-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA5120-5EC31-0AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA5120-5EC31-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5120-5EC31-0AA0)

CAX-Online-Generator

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

Tender specifications

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



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last modified:

7/14/2022 [🔗](#)

