



circuit breaker 3VA5 UL frame 125 breaking capacity class M 35kA @ 277 V 1-pole, line protection TM210, FTFM, In=80A overload protection Ir=80A fixed short-circuit protection li=10 x In cable connection on both sides

| Model                                                                                                                      |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                                         | SENTRON                     |
| product designation                                                                                                        | Molded-case circuit breaker |
| product designation / according to UL file                                                                                 | MEAS                        |
| Product version                                                                                                            | 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)                      | No                          |
| design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)                                | No                          |
| design of the overcurrent release                                                                                          | TM210                       |
| protection function of the overcurrent release                                                                             | LI                          |
| number of poles                                                                                                            | 1                           |
| General technical data                                                                                                     |                             |
| insulation voltage / rated value                                                                                           | 500 V                       |
| Max. rated operational voltage Ue with DC                                                                                  | 125 V                       |
| operating voltage / at AC / rated value                                                                                    | 415 V                       |
| power loss [W] / maximum                                                                                                   | 6.43 W                      |
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole                             | 6.43 W                      |
| mechanical service life (switching 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 (switching cycles) / at 480 V                                                                         | 8 000                       |
| electrical endurance (switching cycles) / at 600 V                                                                         | 4 000                       |
| Neutral conductors / upgradeable/retrofitable                                                                              | No                          |
| ground-fault monitoring version                                                                                            | without                     |
| product function                                                                                                           |                             |
| • communication function                                                                                                   | No                          |
| • other measurement function                                                                                               | No                          |
| Net Weight                                                                                                                 | 0.407 kg                    |
| Current                                                                                                                    |                             |
| marking / according to UL 489 / 100%-rated breaker                                                                         | No                          |
| operational current                                                                                                        |                             |
| • at 40 °C                                                                                                                 | 80 A                        |
| • at 45 °C                                                                                                                 | 78 A                        |
| • at 50 °C                                                                                                                 | 77 A                        |
| • at 55 °C                                                                                                                 | 76 A                        |
| • at 60 °C                                                                                                                 | 74 A                        |

- at 65 °C
- at 70 °C

73 A  
72 A

#### Switching capacity according to IEC 60947

|                                                                      |                                                                                                                                                                |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| switching capacity class of the circuit breaker                      | M                                                                                                                                                              |
| breaking capacity maximum short-circuit current (I <sub>cu</sub> )   |                                                                                                                                                                |
| • at 240 V                                                           | 36 kA                                                                                                                                                          |
| • at 415 V                                                           | 5 kA                                                                                                                                                           |
| breaking capacity operating short-circuit current (I <sub>cs</sub> ) |                                                                                                                                                                |
| • at 240 V                                                           | 36 kA                                                                                                                                                          |
| • at 415 V                                                           | 5 kA                                                                                                                                                           |
| short-circuit current making capacity (I <sub>cm</sub> )             |                                                                                                                                                                |
| • at 240 V                                                           | 75.6 kA                                                                                                                                                        |
| • at 415 V                                                           | 7.5 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 |

#### Switching capacity according to UL 489

|                           |       |
|---------------------------|-------|
| breaking capacity current |       |
| • at 120 V                | 85 kA |
| • at 277 V                | 35 kA |
| • at 347 V                | 18 kA |

#### Adjustable parameters

|                                                                                                                               |                  |
|-------------------------------------------------------------------------------------------------------------------------------|------------------|
| product feature / for L-tripping / selectable characteristic function                                                         | No               |
| type of value list setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                   | Fest             |
| reference value setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                      | x I <sub>n</sub> |
| set values setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                           | 1                |
| adjustable response factor setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / minimum | 1                |
| adjustable response factor setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / maximum | 1                |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic / minimum   | 80 A             |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic / maximum   | 80 A             |
| type of value list delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                        | Fest             |
| reference value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                           | s                |
| set values delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic                                | 1                |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / minimum       | 1 s              |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / maximum       | 1 s              |
| product feature / for S-tripping / independent of direction / selectable characteristic function                              | No               |
| product feature / for I-tripping / can be switched on/off                                                                     | No               |
| design of I-trip / adjustable                                                                                                 | No               |
| reference value setting current (I <sub>i</sub> ) / for I-tripping                                                            | x I <sub>n</sub> |
| set values setting current (I <sub>i</sub> ) / for I-tripping                                                                 | 10               |
| adjustable response factor setting current (I <sub>i</sub> ) / for I-tripping / minimum                                       | 10               |
| adjustable response factor setting current (I <sub>i</sub> ) / for I-tripping / maximum                                       | 10               |
| adjustable response value setting current (I <sub>i</sub> ) / for I-tripping / minimum                                        | 800 A            |
| adjustable response value setting current (I <sub>i</sub> ) / for I-tripping / maximum                                        | 800 A            |
| product feature / for G-tripping / selectable characteristic function                                                         | No               |
| product feature / with neutral conductor protection / can be switched on/off                                                  | No               |
| product feature / with neutral conductor protection / adjustable                                                              | Yes              |

|                                                                                                          |                                  |
|----------------------------------------------------------------------------------------------------------|----------------------------------|
| type of value list setting current (InN) / for N-tripping                                                | St                               |
| reference value setting current (InN) / for N-tripping                                                   | x In                             |
| adjustable absolute value setting current (InN) / for N-tripping / minimum                               | 0 A                              |
| adjustable absolute value setting current (InN) / for N-tripping / maximum                               | 0 A                              |
| tripping characteristic / of the lower tolerance band                                                    | AK_3VA5_1_80A_TM2_SuMuH_uT       |
| tripping characteristic / of the upper tolerance band                                                    | AK_3VA5_1_80A_TM2_SuMuH_oT       |
| let-through energy characteristic / at 240 V                                                             | DE_3VA5_1_80A_TM2_line_1p_240V   |
| let-through energy characteristic / at 415 V                                                             | DE_3VA5_1_80A_TM2_line_1p_415V   |
| type of value list setting current (Ii) / for I-tripping                                                 | Fest                             |
| tripping characteristic / of the let-through current characteristic / at 240 V                           | DS_3VA5_1_80A_TM210_line_1p_240V |
| tripping characteristic / of the let-through current characteristic / at 415 V                           | DS_3VA5_1_80A_TM210_line_1p_415V |
| Adjustable response value current / Ig min.                                                              | 80 A                             |
| adjustable current response value current / of the current-dependent overload release / full-scale value | 80 A                             |
| Ground fault protection / tripping switchable / I2t=ON/OFF                                               | No                               |

#### Mechanical Design

|                                                                                 |                   |
|---------------------------------------------------------------------------------|-------------------|
| product component                                                               |                   |
| • undervoltage release                                                          | No                |
| • voltage trigger                                                               | No                |
| • trip indicator                                                                | No                |
| height [in]                                                                     | 5.51 in           |
| Height                                                                          | 140 mm            |
| width [in]                                                                      | 1 in              |
| Type of connectable conductor cross-section, round conductor terminal, stranded | 1 x (8 AWG - 3/0) |
| Width                                                                           | 25.4 mm           |
| depth [in]                                                                      | 3.01 in           |
| depth                                                                           | 76.5 mm           |

#### Connections

|                                                                 |                                           |
|-----------------------------------------------------------------|-------------------------------------------|
| arrangement of electrical connectors / for main current circuit | Front connection                          |
| type of electrical connection / for main current circuit        | circular conductor terminal on both sides |

#### Auxiliary circuit

|                                                |   |
|------------------------------------------------|---|
| number of CO contacts / for auxiliary contacts | 0 |
|------------------------------------------------|---|

#### Accessories

|                                            |    |
|--------------------------------------------|----|
| product extension / optional / motor drive | No |
|--------------------------------------------|----|

#### 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](#)



[Miscellaneous](#)

|     |                           |                   |
|-----|---------------------------|-------------------|
| EMC | Declaration of Conformity | Marine / Shipping |
|-----|---------------------------|-------------------|



Marine / Shipping

other



[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=3VA5180-5ED16-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA5180-5ED16-0AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA5180-5ED16-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5180-5ED16-0AA0)

CAX-Online-Generator

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

Tender specifications

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





