



circuit breaker 3VA5 UL Frame 250 breaking capacity class C 100 kA @ 480 V 4-pole, line protection TM210, FTFM,  $I_n=45$  A overload protection, 100%-rated  $I_r=40$  A permanently set short-circuit protection  $I_i=10 \times I_n$  N conductor unprotected without connection

| Model                                                                                                                      |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                                                         | SENTRON                     |
| product designation                                                                                                        | Molded-case circuit breaker |
| product designation / according to UL file                                                                                 | CFAS                        |
| 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)                                | No                          |
| design of the overcurrent release                                                                                          | TM210                       |
| 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                                                                                    | 1 000 V                     |
| operating voltage / at AC / rated value                                                                                    | 690 V                       |
| power loss [W] / maximum                                                                                                   | 22 W                        |
| power loss [W] / for rated value of the current / at AC / in hot operating state / per pole                                | 7.4 W                       |
| mechanical service life (operating cycles) / typical                                                                       | 20 000                      |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V                                                           | 8 000                       |
| electrical endurance (operating cycles) / at AC-1 / at 690 V                                                               | 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                          |
| product function                                                                                                           |                             |
| • communication function                                                                                                   | No                          |
| • other measurement function                                                                                               | No                          |
| Net Weight                                                                                                                 | 2 800 g                     |
| Current                                                                                                                    |                             |
| marking / according to UL 489 / 100%-rated breaker                                                                         | Yes                         |
| operational current                                                                                                        |                             |
| • at 40 °C                                                                                                                 | 45 A                        |
| • at 45 °C                                                                                                                 | 44 A                        |
| • at 50 °C                                                                                                                 | 43 A                        |
| • at 55 °C                                                                                                                 | 42.1 A                      |
| • at 60 °C                                                                                                                 | 41.1 A                      |
| • at 65 °C                                                                                                                 | 40.1 A                      |
| • at 70 °C                                                                                                                 | 39.1 A                      |

|                                                                                                                   |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Switching capacity according to IEC 60947</b>                                                                  |                                                                                                                                                                |
| switching capacity class of the circuit breaker                                                                   | C                                                                                                                                                              |
| maximum short-circuit current breaking capacity (I <sub>cu</sub> )                                                |                                                                                                                                                                |
| • at 240 V                                                                                                        | 200 kA                                                                                                                                                         |
| • at 415 V                                                                                                        | 110 kA                                                                                                                                                         |
| • at 690 V                                                                                                        | 10 kA                                                                                                                                                          |
| operating short-circuit current breaking capacity (I <sub>cs</sub> )                                              |                                                                                                                                                                |
| • at 240 V                                                                                                        | 200 kA                                                                                                                                                         |
| • at 415 V                                                                                                        | 110 kA                                                                                                                                                         |
| • at 690 V                                                                                                        | 10 kA                                                                                                                                                          |
| short-circuit current making capacity (I <sub>cm</sub> )                                                          |                                                                                                                                                                |
| • at 240 V                                                                                                        | 440 kA                                                                                                                                                         |
| • at 415 V                                                                                                        | 242 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>Switching capacity according to UL 489</b>                                                                     |                                                                                                                                                                |
| current breaking capacity                                                                                         |                                                                                                                                                                |
| • at 240 V                                                                                                        | 200 kA                                                                                                                                                         |
| • at 480 V                                                                                                        | 100 kA                                                                                                                                                         |
| • at 600 V                                                                                                        | 35 kA                                                                                                                                                          |
| <b>Adjustable parameters</b>                                                                                      |                                                                                                                                                                |
| adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic |                                                                                                                                                                |
| • minimum                                                                                                         | 45 A                                                                                                                                                           |
| • maximum                                                                                                         | 45 A                                                                                                                                                           |
| adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic     |                                                                                                                                                                |
| • minimum                                                                                                         | 1 s                                                                                                                                                            |
| • maximum                                                                                                         | 1 s                                                                                                                                                            |
| adjustable response value setting current (I <sub>i</sub> ) / for I-tripping                                      |                                                                                                                                                                |
| • minimum                                                                                                         | 450 A                                                                                                                                                          |
| • maximum                                                                                                         | 450 A                                                                                                                                                          |
| adjustable setting current (I <sub>nN</sub> ) / for N-tripping                                                    |                                                                                                                                                                |
| • minimum                                                                                                         | 0 A                                                                                                                                                            |
| • maximum                                                                                                         | 0 A                                                                                                                                                            |
| design of the N-conductor protection                                                                              | Without                                                                                                                                                        |
| product function / grounding protection                                                                           | No                                                                                                                                                             |
| <b>Mechanical Design</b>                                                                                          |                                                                                                                                                                |
| product component                                                                                                 |                                                                                                                                                                |
| • undervoltage release                                                                                            | No                                                                                                                                                             |
| • voltage trigger                                                                                                 | No                                                                                                                                                             |
| • trip indicator                                                                                                  | No                                                                                                                                                             |
| height [in]                                                                                                       | 7.28 in                                                                                                                                                        |
| height                                                                                                            | 185 mm                                                                                                                                                         |
| width [in]                                                                                                        | 5.51 in                                                                                                                                                        |
| width                                                                                                             | 140 mm                                                                                                                                                         |
| depth [in]                                                                                                        | 3.27 in                                                                                                                                                        |
| depth                                                                                                             | 83 mm                                                                                                                                                          |
| <b>Connections</b>                                                                                                |                                                                                                                                                                |
| arrangement of electrical connectors / for main current circuit                                                   | Without connection                                                                                                                                             |
| type of electrical connection / for main current circuit                                                          | Without                                                                                                                                                        |
| design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6)                             | silver                                                                                                                                                         |
| <b>Auxiliary circuit</b>                                                                                          |                                                                                                                                                                |
| number of CO contacts / for auxiliary contacts                                                                    | 0                                                                                                                                                              |
| <b>Accessories</b>                                                                                                |                                                                                                                                                                |
| product extension / optional / motor drive                                                                        | Yes                                                                                                                                                            |
| manufacturer's article number                                                                                     |                                                                                                                                                                |
| • of the supplied basic switch                                                                                    | <a href="#">3VA52457ED412AA0</a>                                                                                                                               |
| <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  |
| reference code / according to IEC 81346-2 | Q      |

## Approvals / Certificates

### General Product Approval



[Confirmation](#)



[Miscellaneous](#)

|                          |     |                   |       |
|--------------------------|-----|-------------------|-------|
| General Product Approval | EMV | Marine / Shipping | other |
|--------------------------|-----|-------------------|-------|



[Miscellaneous](#)

[Confirmation](#)

[Miscellaneous](#)

## Environment

[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=3VA5245-7ED41-2AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA5245-7ED41-2AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA5245-7ED41-2AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5245-7ED41-2AA0)

### CAX-Online-Generator

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

### Tender specifications

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





