



circuit breaker 3VA1 IEC frame 160 breaking capacity class M Icu=55kA @ 240V 1-pole, line protection TM210, FTFM, In=16A overload protection Ir=16A fixed short-circuit protection li=20 x In nut keeper kit

| Model                                                                                          |                             |
|------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name                                                                             | SENTRON                     |
| product designation                                                                            | Molded case circuit breaker |
| Product version                                                                                | Line protection             |
| design of the overcurrent release                                                              | TM210                       |
| protection function of the overcurrent release                                                 | LI                          |
| number of poles                                                                                | 1                           |
| General technical data                                                                         |                             |
| rated insulation voltage Ui                                                                    | 500 V                       |
| Max. rated operational voltage Ue with DC                                                      | 125 V                       |
| operating voltage / at AC / rated value                                                        | 415 V                       |
| power loss [W] / maximum                                                                       | 3.53 W                      |
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole | 3.53 W                      |
| mechanical service life (switching cycles) / typical                                           | 20 000                      |
| Electrical endurance (switching cycles) / at AC-1 / at 380/415 V 50/60 Hz                      | 9 000                       |
| Electrical endurance (switching cycles) / at AC-1 / at 690 V 50/60 Hz                          | 6 300                       |
| Neutral conductors / upgradeable/retrofitable                                                  | No                          |
| ground-fault monitoring version                                                                | Without                     |
| product function                                                                               |                             |
| • communication function                                                                       | No                          |
| • other measurement function                                                                   | No                          |
| Net Weight                                                                                     | 383 g                       |
| Current                                                                                        |                             |
| Max. rated operational current of the frame size                                               | 160 A                       |
| Courant permanent assigné lu                                                                   | 16 A                        |
| operational current                                                                            |                             |
| • at 40 °C                                                                                     | 16 A                        |
| • at 45 °C                                                                                     | 16 A                        |
| • at 50 °C                                                                                     | 16 A                        |
| • at 55 °C                                                                                     | 16 A                        |
| • at 60 °C                                                                                     | 15 A                        |
| • at 65 °C                                                                                     | 15 A                        |
| • at 70 °C                                                                                     | 15 A                        |
| Switching capacity according to IEC 60947                                                      |                             |
| switching capacity class of the circuit breaker                                                | M                           |
| breaking capacity maximum short-circuit current (Icu)                                          |                             |
| • at 240 V                                                                                     | 55 kA                       |

|                                                                                                                                          |                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 415 V</li> </ul>                                                                             | 6 kA                                                                                                                                                           |
| breaking capacity operating short-circuit current (Ics) <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> </ul> | 55 kA<br>6 kA                                                                                                                                                  |
| short-circuit current making capacity (Icm) <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> </ul>             | 121 kA<br>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 |

| Adjustable parameters                                                                                |       |
|------------------------------------------------------------------------------------------------------|-------|
| reference value setting current (Ir) / for L-tripping / with I2t characteristic                      | x In  |
| set values setting current (Ir) / for L-tripping / with I2t characteristic                           | 1     |
| adjustable response factor setting current (Ir) / for L-tripping / with I2t characteristic / minimum | 1     |
| adjustable response factor setting current (Ir) / for L-tripping / with I2t characteristic / maximum | 1     |
| adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic / minimum   | 16 A  |
| adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic / maximum   | 16 A  |
| type of value list delay time (tr) / for L-tripping / with I2t characteristic                        | Fest  |
| reference value delay time (tr) / for L-tripping / with I2t characteristic                           | s     |
| set values delay time (tr) / for L-tripping / with I2t characteristic                                | 1     |
| adjustable response value delay time (tr) / for L-tripping / with I2t characteristic / minimum       | 1 s   |
| adjustable response value delay time (tr) / for L-tripping / with I2t characteristic / maximum       | 1 s   |
| adjustable response value setting current (Ii) / for I-tripping / maximum                            | 320 A |
| adjustable response value setting current (Ii) / for I-tripping / minimum                            | 320 A |
| reference value setting current (Ii) / for I-tripping                                                | x In  |
| type of value list setting current (Ii) / for I-tripping                                             | Fest  |
| adjustable absolute value setting current (InN) / for N-tripping / maximum                           | 0 A   |
| adjustable absolute value setting current (InN) / for N-tripping / minimum                           | 0 A   |
| Adjustable response value current / Ii min.                                                          | 320 A |
| Adjustable response value current / Ii max.                                                          | 320 A |
| Ground fault protection / tripping switchable / I2t=ON/OFF                                           | No    |

| Mechanical Design |         |
|-------------------|---------|
| height [in]       | 5.12 in |
| Height            | 130 mm  |
| width [in]        | 1 in    |
| Width             | 25.4 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-section, connection screw, width x thickness , min. | 12 x 1 mm                   |
| Type of connectable conductor cross-section, connection screw, width x thickness , max. | 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                              |        |     |
|------------------------------------------------|--------|-----|
| product component                              |        |     |
| • undervoltage release                         | No     |     |
| • voltage trigger                              | No     |     |
| • trip indicator                               | No     |     |
| 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                       |        | EMC |

[Confirmation](#)



[Miscellaneous](#)



| Declaration of Conformity | Test Certificates |                               |                                          | Marine / Shipping                                  |
|---------------------------|-------------------|-------------------------------|------------------------------------------|----------------------------------------------------|
| <br>EG-Konf.              |                   | <a href="#">Miscellaneous</a> | <a href="#">Special Test Certificate</a> | <a href="#">Type Test Certificates/Test Report</a> |
|                           |                   |                               |                                          |                                                    |

| Marine / Shipping | other                                              |                               |                                             |                               |
|-------------------|----------------------------------------------------|-------------------------------|---------------------------------------------|-------------------------------|
|                   | <a href="#">CCS / China Classification Society</a> | <a href="#">Miscellaneous</a> | <a href="#">Environmental Confirmations</a> | <a href="#">Miscellaneous</a> |

| Further information                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Information- and Downloadcenter (Catalogs, Brochures,...)</b><br><a href="http://www.siemens.com/lowvoltage/catalogs">http://www.siemens.com/lowvoltage/catalogs</a>                                                                                                           |
| <b>Industry Mall (Online ordering system)</b><br><a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA1196-5ED12-0AA0">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA1196-5ED12-0AA0</a>                                          |
| <b>Service&amp;Support (Manuals, Certificates, Characteristics, FAQs,...)</b><br><a href="https://support.industry.siemens.com/cs/ww/en/ps/3VA1196-5ED12-0AA0">https://support.industry.siemens.com/cs/ww/en/ps/3VA1196-5ED12-0AA0</a>                                            |
| <b>Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)</b><br><a href="http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1196-5ED12-0AA0">http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1196-5ED12-0AA0</a> |
| <b>CAX-Online-Generator</b><br><a href="http://www.siemens.com/cax">http://www.siemens.com/cax</a>                                                                                                                                                                                |
| <b>Tender specifications</b><br><a href="http://www.siemens.com/specifications">http://www.siemens.com/specifications</a>                                                                                                                                                         |





