



CIRCUIT BREAKER 3VA1 IEC FRAME 100 BREAKING CAPACITY CLASS B ICU=16KA @ 415 V 4-POLE, LINE PROTECTION TM210, FTFM, IN=20A OVERLOAD PROTECTION IR=20A FIXED SHORT CIRCUIT PROTECTION II=16 X IN NEUTRAL UNPROTECTED CABLE CONNECTION

| Model                                                                                                                |                             |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brandname                                                                                                    | SETRON                      |
| Product designation                                                                                                  | Molded case circuit breaker |
| Design of the product                                                                                                | Line protection             |
| Type of load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) | Yes                         |
| Design of the overcurrent release                                                                                    | TM210                       |
| Protective function of the overcurrent release                                                                       | LI                          |
| Number of poles                                                                                                      | 4                           |

| General technical data                                                                           |        |
|--------------------------------------------------------------------------------------------------|--------|
| Tension assignée d'isolement Ui                                                                  | 800 V  |
| Max. rated operational voltage Ue with AC 50/60Hz                                                | 690 V  |
| Max. rated operational voltage Ue with DC                                                        | 600 V  |
| Active power loss / for rated value of the current / at AC / in hot operating state / per device | 12 W   |
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole   | 4 W    |
| Mechanical service life (switching cycles) / typical                                             | 15 000 |

|                                                                           |         |
|---------------------------------------------------------------------------|---------|
| Electrical endurance (switching cycles) / at AC-1 / at 380/415 V 50/60 Hz | 8 000   |
| Neutral conductors / upgradeable/retrofitable                             | No      |
| Ground fault monitoring version                                           | Without |
| Product function                                                          |         |
| • communication function                                                  | No      |
| • other measurement function                                              | No      |
| Net weight                                                                | 1.2 kg  |

## Electricity

|                                                                   |       |
|-------------------------------------------------------------------|-------|
| Marking / according to UL 489 / 100%-rated breaker                | No    |
| Max. rated operational voltage of the size of the circuit-breaker | 100 A |
| Courant permanent assigné Iu                                      | 20 A  |
| Operating 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           | B       |
| Maximum short-circuit current breaking capacity (Icu)     |         |
| • at 240 V                                                | 25 kA   |
| • at 415 V                                                | 16 kA   |
| • at 440 V                                                | 8 kA    |
| • at 500 V                                                | 5 kA    |
| • at 690 V                                                | 5 kA    |
| Operational short-circuit current breaking capacity (Ics) |         |
| • at 240 V                                                | 25 kA   |
| • at 415 V                                                | 16 kA   |
| • at 440 V                                                | 8 kA    |
| • at 500 V                                                | 5 kA    |
| • at 690 V                                                | 5 kA    |
| Short-circuit current making capacity (Icm)               |         |
| • at 240 V                                                | 53 kA   |
| • at 415 V                                                | 32 kA   |
| • at 440 V                                                | 13.6 kA |
| • at 500 V                                                | 7.5 kA  |
| • at 690 V                                                | 7.5 kA  |

| Adjustable parameters                                              |         |
|--------------------------------------------------------------------|---------|
| Adjustable response value current / I <sub>g</sub> min.            | 20 A    |
| Adjustable response value current / I <sub>g</sub> min.            | 20 A    |
| Adjustable response value current / I <sub>g</sub> min.            | 1       |
| Adjustable response value current / I <sub>g</sub> min.            | 1       |
| Short-term delayed / tripping switchable / I <sub>2t</sub> =ON/OFF | No      |
| Adjustable response value current / I <sub>i</sub> min.            | 320 A   |
| Adjustable response value current / I <sub>i</sub> max.            | 320 A   |
| Design of the N-conductor protection                               | Without |

| Mechanical Design |          |
|-------------------|----------|
| Height [in]       | 5.12 in  |
| Height            | 130 mm   |
| Width [in]        | 4 in     |
| Width             | 101.6 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                        | box terminal                    |
| Type of connectable conductor cross-section, round conductor terminal, stranded | 1 x (1.5 - 70 mm <sup>2</sup> ) |

| 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                                                                           |    |
|----------------------------------------------------------------------------------------|----|
| Equipment marking / acc. to DIN EN 81346-2                                             | Q  |
| Certificate of suitability / as approval for NAVAL (no combat vessels) / Supplement SB | No |

| General Product Approval                                                                 |                                                                                          |                         | EMC                                                                                      | Declaration of Conformity                                                                  |                                                                                                 |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <br>CCC | <br>VDE | <a href="#">sonstig</a> | <br>EAC | <br>RCM | <br>EG-Konf. |

| Test Certificates                                 | Shipping Approval       |                                                                                          |                                                                                                     |                                                                                           |                                                                                            |
|---------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <a href="#">Typprüfbescheinigung/Werkszeugnis</a> | <a href="#">sonstig</a> | <br>ABS | <br>BUREAU VERITAS | <br>GL | <br>LRS |

| Shipping Approval                                                                         | other                   |  |  |  |  |
|-------------------------------------------------------------------------------------------|-------------------------|--|--|--|--|
| <br>RMRS | <a href="#">sonstig</a> |  |  |  |  |

#### Further information

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/lowvoltage/catalogs>

##### Industry Mall (Online ordering system)

<https://eb.automation.siemens.com/mall/en/WW/Catalog/Product/3VA1020-2ED46-0AA0>

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

<http://support.automation.siemens.com/WW/view/en/3VA1020-2ED46-0AA0/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1020-2ED46-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1020-2ED46-0AA0)

##### CAX-Online-Generator

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

##### Tender specifications

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



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