



CIRCUIT BREAKER 3VA1 IEC FRAME 160 BREAKING CAPACITY CLASS M ICU=55KA @ 415 V 3-POLE, MOTOR STARTER PROTECTION TM120M, AM, IN=80A WITHOUT OVERLOAD PROTECTION SHORT CIRCUIT PROTECTION II=7...16 X IN CABLE CONNECTION

| Model                                                                                                                |                             |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|
| product brandname                                                                                                    | SENTRON                     |
| Product designation                                                                                                  | Molded case circuit breaker |
| Design of the product                                                                                                | Starter protection          |
| Type of load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) | Yes                         |
| Design of the overcurrent release                                                                                    | TM120M                      |
| Protective function of the overcurrent release                                                                       | I                           |
| Number of poles                                                                                                      | 3                           |
| 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                                                                            | 500 V                       |
| Operating power / at AC-3 / at 400 V                                                                                 | 45 000 W                    |
| Operating power / at AC-3 / at 230 V                                                                                 | 22 000 W                    |
| Active power loss / for rated value of the current / at AC / in hot operating state / per device                     | 19.2 W                      |

|                                                                                                |         |
|------------------------------------------------------------------------------------------------|---------|
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole | 6.4 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      |
| • Phase failure detection                                                                      | No      |
| • other measurement function                                                                   | No      |
| Net weight                                                                                     | 0.9 kg  |

## Electricity

|                                                                   |       |
|-------------------------------------------------------------------|-------|
| Marking / according to UL 489 / 100%-rated breaker                | No    |
| Max. rated operational voltage of the size of the circuit-breaker | 160 A |
| Courant permanent assigné lu                                      | 80 A  |
| Operating current                                                 |       |
| • at 40 °C                                                        | 80 A  |
| • at 45 °C                                                        | 80 A  |
| • at 50 °C                                                        | 80 A  |
| • at 55 °C                                                        | 78 A  |
| • at 60 °C                                                        | 77 A  |
| • at 65 °C                                                        | 75 A  |
| • at 70 °C                                                        | 74 A  |

## Switching capacity according to IEC 60947

|                                                           |        |
|-----------------------------------------------------------|--------|
| Switching capacity class of the circuit breaker           | M      |
| Maximum short-circuit current breaking capacity (Icu)     |        |
| • at 240 V                                                | 85 kA  |
| • at 415 V                                                | 55 kA  |
| • at 440 V                                                | 36 kA  |
| • at 690 V                                                | 5 kA   |
| Operational short-circuit current breaking capacity (Ics) |        |
| • at 240 V                                                | 85 kA  |
| • at 415 V                                                | 55 kA  |
| • at 440 V                                                | 36 kA  |
| • at 690 V                                                | 5 kA   |
| Short-circuit current making capacity (Icm)               |        |
| • at 240 V                                                | 187 kA |
| • at 415 V                                                | 121 kA |
| • at 440 V                                                | 76 kA  |

- at 690 V

7.5 kA

### Adjustable parameters

|                                                            |         |
|------------------------------------------------------------|---------|
| Short-term delayed / tripping switchable / I2t=ON/OFF      | No      |
| Adjustable response value current / Ii min.                | 560 A   |
| Adjustable response value current / Ii max.                | 1 280 A |
| Ground fault protection / tripping switchable / I2t=ON/OFF | No      |

### Mechanical Design

|             |         |
|-------------|---------|
| Height [in] | 5.1 in  |
| Height      | 130 mm  |
| Width [in]  | 3 in    |
| Width       | 76.2 mm |
| Depth [in]  | 2.8 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 mm²) |

### Auxiliary circuit

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

### Accessories

|                                            |     |
|--------------------------------------------|-----|
| 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

|                                                                                        |    |
|----------------------------------------------------------------------------------------|----|
| 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<br>Conformity                                                             | Test<br>Certificates                                                                            |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <br>CCC | <br>VDE |  | <br>RCM | <br>EG-Konf. |

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## 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/3VA1180-5MH36-0AA0>

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

<http://support.automation.siemens.com/WW/view/en/3VA1180-5MH36-0AA0/all>

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

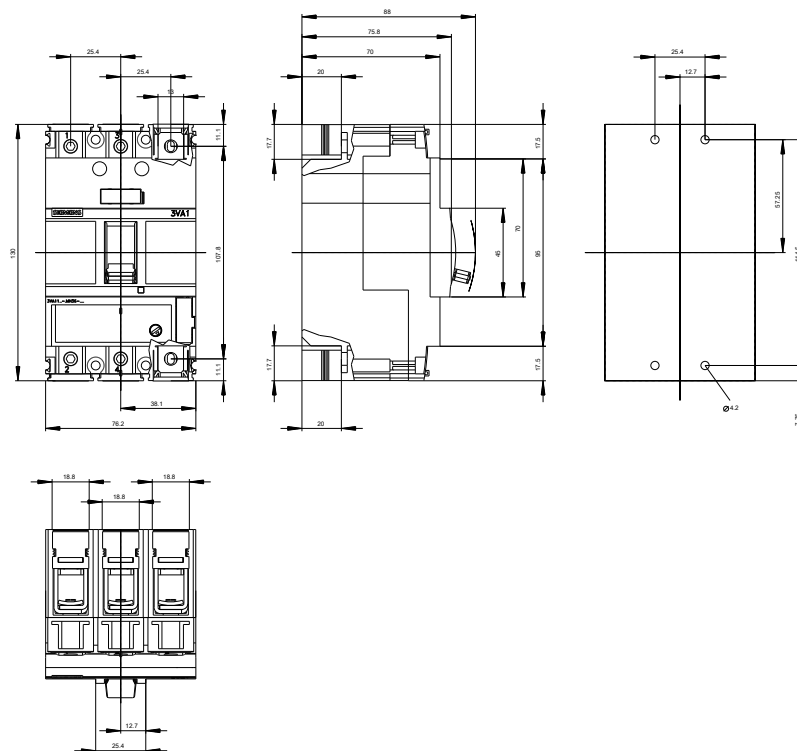
[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1180-5MH36-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1180-5MH36-0AA0)

**CAX-Online-Generator**

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

**Tender specifications**

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





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