



circuit breaker 3VA1 IEC frame 160 breaking capacity class S  
Icu=36kA @ 415V 4-pole, line protection TM220, ATFM, In=80A  
overload protection Ir=56A...80A short-circuit protection Ii=10 x In N  
conductor unprotected nut keeper kit

| Model                                          |                             |
|------------------------------------------------|-----------------------------|
| product brand name                             | SETRON                      |
| product designation                            | Molded case circuit breaker |
| Product version                                | Line protection             |
| design of the overcurrent release              | TM220                       |
| protection 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  |
| power loss [W] / maximum                                                                       | 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                                           | 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                          | 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  |

## Current

|                                                  |       |
|--------------------------------------------------|-------|
| Max. rated operational current of the frame size | 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           | S                                                                                                                                                              |
| maximum short-circuit current breaking capacity (Icu)     |                                                                                                                                                                |
| • at 240 V                                                | 55 kA                                                                                                                                                          |
| • at 415 V                                                | 36 kA                                                                                                                                                          |
| • at 440 V                                                | 25 kA                                                                                                                                                          |
| • at 500 V                                                | 7 kA                                                                                                                                                           |
| • at 690 V                                                | 7 kA                                                                                                                                                           |
| operational short-circuit current breaking capacity (Ics) |                                                                                                                                                                |
| • at 240 V                                                | 55 kA                                                                                                                                                          |
| • at 415 V                                                | 36 kA                                                                                                                                                          |
| • at 440 V                                                | 25 kA                                                                                                                                                          |
| • at 500 V                                                | 5 kA                                                                                                                                                           |
| • at 690 V                                                | 5 kA                                                                                                                                                           |
| short-circuit current making capacity (Icm)               |                                                                                                                                                                |
| • at 240 V                                                | 121 kA                                                                                                                                                         |
| • at 415 V                                                | 76 kA                                                                                                                                                          |
| • at 440 V                                                | 53 kA                                                                                                                                                          |
| • at 500 V                                                | 11.9 kA                                                                                                                                                        |
| • at 690 V                                                | 11.9 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

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Adjustable response value current / I <sub>g</sub> min.                 | 56 A    |
| Adjustable response value current / I <sub>g</sub> min.                 | 80 A    |
| Short-term delayed / tripping switchable / I <sub>2t</sub> =ON/OFF      | No      |
| Adjustable response value current / I <sub>i</sub> min.                 | 800 A   |
| Adjustable response value current / I <sub>i</sub> max.                 | 800 A   |
| design of the N-conductor protection                                    | Without |
| Ground fault protection / tripping switchable / I <sub>2t</sub> =ON/OFF | No      |

### Mechanical Design

|             |          |
|-------------|----------|
| height [in] | 5.1 in   |
| Height      | 130 mm   |
| width [in]  | 4 in     |
| Width       | 101.6 mm |
| depth [in]  | 2.8 in   |
| depth       | 70 mm    |

### Connections

|                                                                                         |                |
|-----------------------------------------------------------------------------------------|----------------|
| arrangement of electrical connectors / for main current circuit                         | Front terminal |
| Type of connectable conductor cross-section, connection screw, width x thickness , min. | 12 x 0 mm      |
| Type of connectable conductor cross-section, connection screw, width x thickness , max. | 17 x 6.5 mm    |

### 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

|                                         |   |
|-----------------------------------------|---|
| reference code / acc. to DIN EN 81346-2 | Q |
|-----------------------------------------|---|

| General Product Approval                                                                 |                                                                                          |                               |                    | EMC                                                                                                                                                                               |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>CCC | <br>VDE | <a href="#">Miscellaneous</a> | <a href="#">KC</a> | <br><br>RCM |

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

| Shipping Approval                                                                        |                                                                                           | other                                              |                                          |                               |
|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------|-------------------------------|
| <br>LRS | <br>RMRS | <a href="#">CCS / China Classification Society</a> | <a href="#">Manufacturer Declaration</a> | <a href="#">Miscellaneous</a> |

#### 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=3VA1180-4EE42-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1180-4EE42-0AA0>

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

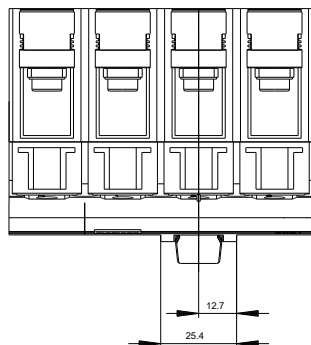
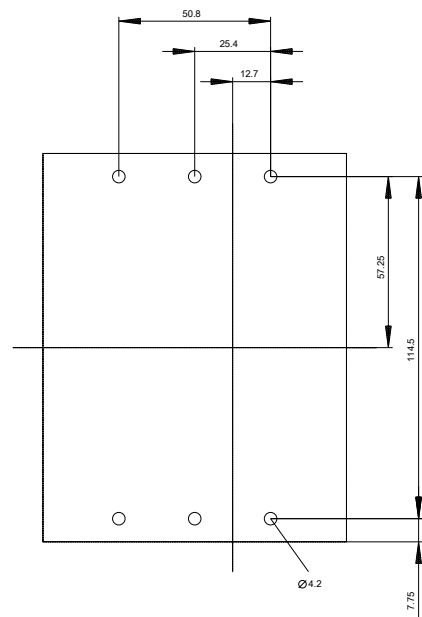
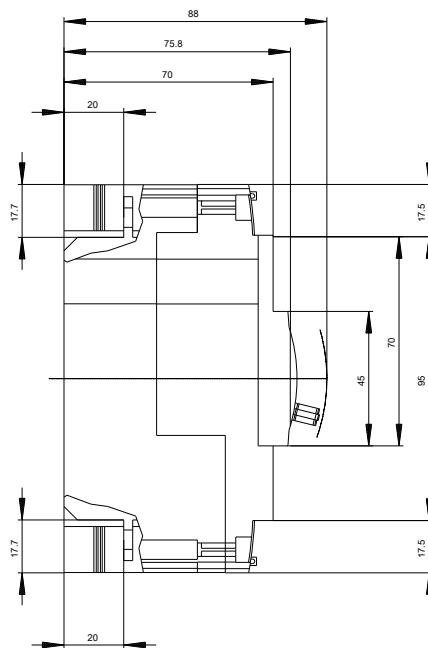
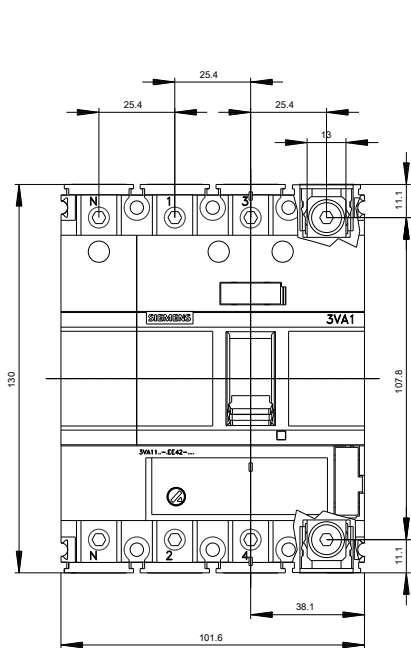
[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1180-4EE42-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1180-4EE42-0AA0)

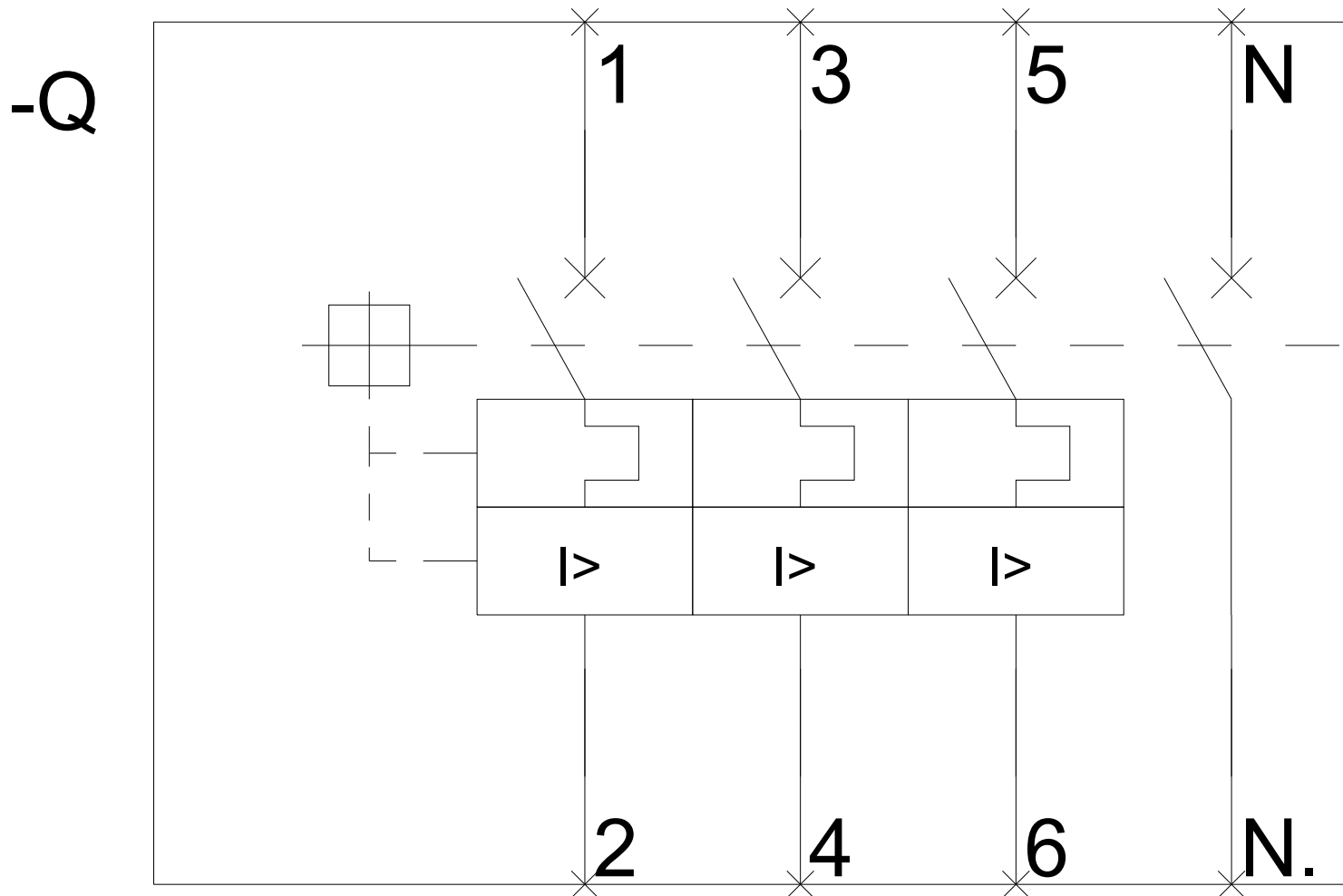
##### CAX-Online-Generator

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

##### Tender specifications

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





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