

circuit breaker 3VA1 IEC frame 160 breaking capacity class H  
Icu=70kA @ 415V 4-pole, line protection TM220, ATFM, In=160A  
overload protection Ir=112A...160A short-circuit protection Ii=10 x In  
N conductor protection 50% clamp connection



| 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                                                                       | 38 W    |
| Active power loss / for rated value of the current / at AC / in hot operating state / per pole | 12.67 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                     | 160 A |
| operating current                                |       |
| • at 40 °C                                       | 160 A |
| • at 45 °C                                       | 160 A |
| • at 50 °C                                       | 160 A |
| • at 55 °C                                       | 158 A |
| • at 60 °C                                       | 155 A |
| • at 65 °C                                       | 153 A |
| • at 70 °C                                       | 150 A |

## Switching capacity according to IEC 60947

|                                                           |                                                                                                                                                                |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| switching capacity class of the circuit breaker           | H                                                                                                                                                              |
| maximum short-circuit current breaking capacity (Icu)     |                                                                                                                                                                |
| • at 240 V                                                | 100 kA                                                                                                                                                         |
| • at 415 V                                                | 70 kA                                                                                                                                                          |
| • at 440 V                                                | 36 kA                                                                                                                                                          |
| • at 500 V                                                | 10 kA                                                                                                                                                          |
| • at 690 V                                                | 10 kA                                                                                                                                                          |
| operational short-circuit current breaking capacity (Ics) |                                                                                                                                                                |
| • at 240 V                                                | 100 kA                                                                                                                                                         |
| • at 415 V                                                | 70 kA                                                                                                                                                          |
| • at 440 V                                                | 36 kA                                                                                                                                                          |
| • at 500 V                                                | 5 kA                                                                                                                                                           |
| • at 690 V                                                | 5 kA                                                                                                                                                           |
| short-circuit current making capacity (Icm)               |                                                                                                                                                                |
| • at 240 V                                                | 220 kA                                                                                                                                                         |
| • at 415 V                                                | 154 kA                                                                                                                                                         |
| • at 440 V                                                | 76 kA                                                                                                                                                          |
| • at 500 V                                                | 17 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 |

### Adjustable parameters

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Adjustable response value current / I <sub>g</sub> min.                 | 112 A   |
| Adjustable response value current / I <sub>g</sub> min.                 | 160 A   |
| Short-term delayed / tripping switchable / I <sub>2t</sub> =ON/OFF      | No      |
| Adjustable response value current / I <sub>i</sub> min.                 | 1 600 A |
| Adjustable response value current / I <sub>i</sub> max.                 | 1 600 A |
| design of the N-conductor protection                                    | 50%     |
| 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, 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 | 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 | Declaration of Conformity |
|--------------------------|-----|---------------------------|
|--------------------------|-----|---------------------------|



CCC



VDE

[Miscellaneous](#)



RCM



EG-Konf.

| Test Certificates | Shipping Approval |
|-------------------|-------------------|
|-------------------|-------------------|

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)

[Special Test Certificate](#)



ABS



BUREAU  
VERITAS



LRS

| Shipping Approval | other |
|-------------------|-------|
|-------------------|-------|



RMRS

[CCS / China Classification Society](#)

[Manufacturer Declaration](#)

[Miscellaneous](#)

## 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=3VA1116-6FE46-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1116-6FE46-0AA0>

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

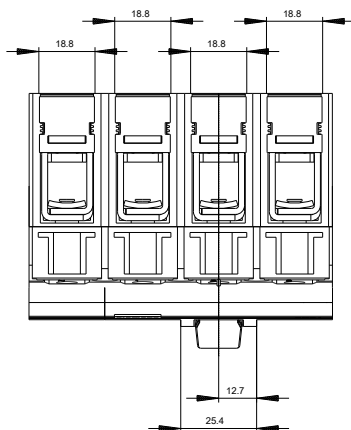
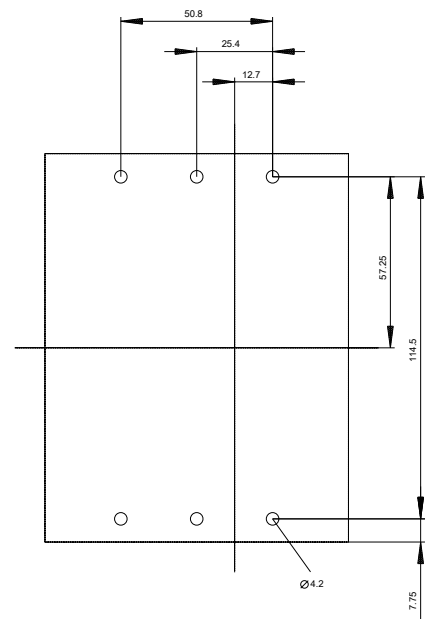
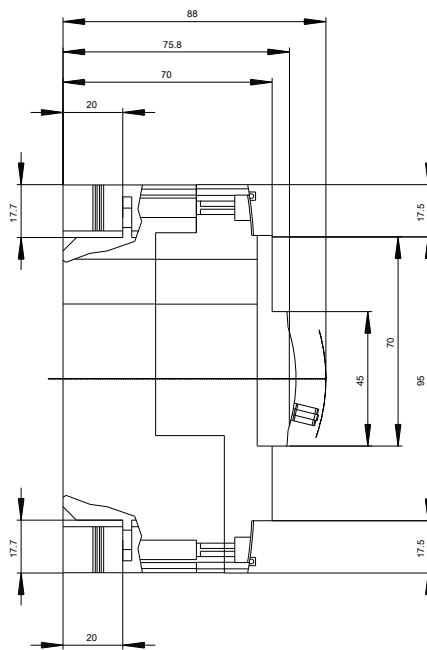
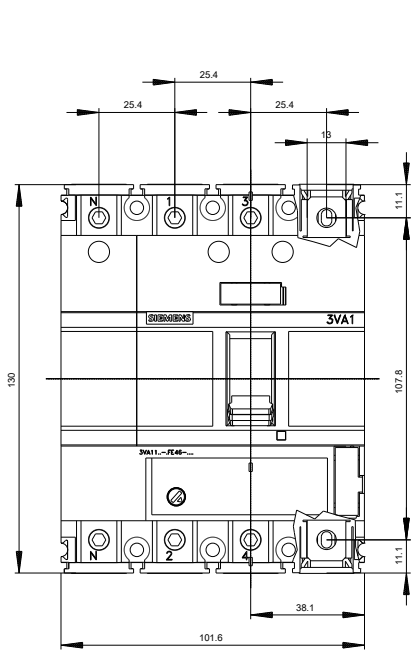
[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA1116-6FE46-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1116-6FE46-0AA0)

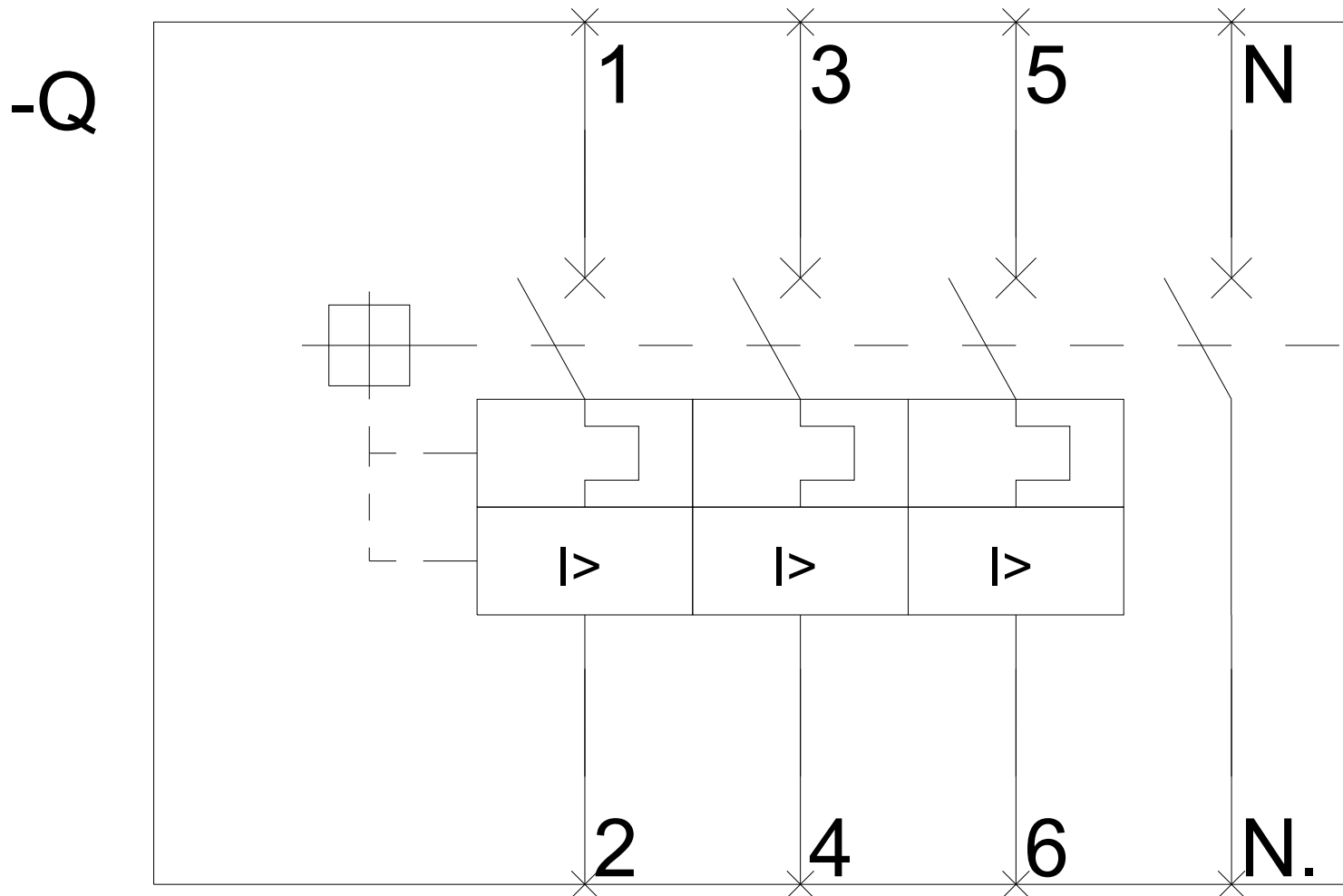
**CAX-Online-Generator**

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

**Tender specifications**

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





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