



circuit breaker 3VA1 IEC frame 160 breaking capacity class H Icu=70kA @ 415V
4-pole, line protection TM220, ATFM, In=20A overload protection Ir=14A...20A
short-circuit protection Ii=16 x In N conductor unprotected clamp connection

| Model | |
|---|-----------------------------|
| product brand name | SENTRON |
| product designation | Molded case circuit breaker |
| design of the product | Line protection |
| design of the overcurrent release | TM220 |
| protection function of the overcurrent release | LI |
| number of poles | 4 |
| General technical data | |
| insulation voltage / rated value | 800 V |
| operating voltage / at DC / rated value | 600 V |
| operating voltage / at AC / rated value | 690 V |
| power loss [W] / maximum | 12 W |
| mechanical service life (operating cycles) / typical | 20 000 |
| electrical endurance (operating cycles) / at AC-1 / at 380/415 V | 9 000 |
| electrical endurance (operating cycles) / at AC-1 / at 690 V | 6 300 |
| product feature / for neutral conductors / upgradable/retrofitable / short-circuit and overload proof | No |
| ground-fault monitoring version | Without |
| product function | |
| • communication function | No |
| • other measurement function | No |
| Net Weight | 1.302 kg |
| Current | |
| operational 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 | H |
| maximum short-circuit current breaking capacity (Icu) | |
| • at 240 V | 100 kA |
| • at 415 V | 70 kA |
| • at 440 V | 55 kA |
| • at 500 V | 10 kA |
| • at 690 V | 10 kA |
| operating short-circuit current breaking capacity (Ics) | |

| | |
|---|--|
| <ul style="list-style-type: none"> • at 240 V • at 415 V • at 440 V • at 500 V • at 690 V | 100 kA 70 kA 40 kA 5 kA 5 kA |
| short-circuit current making capacity (I _{cm}) <ul style="list-style-type: none"> • at 240 V • at 415 V • at 440 V • at 500 V • at 690 V | 220 kA 154 kA 121 kA 17 kA 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

| | |
|--|----------------|
| product feature / for L-tripping / can be switched on/off | No |
| adjustable response value setting current (I _r) / of the L-trip / with I _{2t} characteristic <ul style="list-style-type: none"> • minimum • maximum | 14 A 20 A |
| adjustable response value delay time (t _r) / for L-tripping / with I _{2t} characteristic <ul style="list-style-type: none"> • minimum • maximum | 1 s 1 s |
| adjustable response value setting current (I _l) / for I-tripping <ul style="list-style-type: none"> • minimum • maximum | 320 A 320 A |
| adjustable setting current (I _{nN}) / for N-tripping <ul style="list-style-type: none"> • minimum • maximum | 0 A 0 A |
| design of the N-conductor protection | without |
| product function / grounding protection | No |

Mechanical Design

| | |
|---|---------------------------------|
| product component <ul style="list-style-type: none"> • undervoltage release • voltage trigger • trip indicator | No No No |
| height [in] | 5.12 in |
| height | 130 mm |
| width [in] | 4 in |
| type of connectable conductor cross-sections / of the round conductor terminal / stranded | 1 x (1,5 - 70 mm ²) |
| 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 on both sides |
| 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

| | |
|--|---|
| 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 <ul style="list-style-type: none"> • during operation / minimum • during operation / maximum • during storage / minimum | -25 °C 70 °C -40 °C |

• during storage / maximum

80 °C

Environmental footprint

| | |
|--|-----------|
| Environmental Product Declaration(EPD) | Yes |
| Global Warming Potential [CO2 eq] / total | 190 kg |
| Global Warming Potential [CO2 eq] / during manufacturing | 4.67 kg |
| Global Warming Potential [CO2 eq] / during operation | 186 kg |
| global warming potential [CO2 eq] / after end of life | -0.826 kg |
| reference code / according to IEC 81346-2 | Q |

Approvals / Certificates

| | |
|--------------------------|-----|
| General Product Approval | EMC |
|--------------------------|-----|



[Confirmation](#)



[Miscellaneous](#)



| | | |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)



| | |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



[CCS / China Classification Society](#)

[Miscellaneous](#)

| | |
|-------|-------------|
| other | Environment |
|-------|-------------|

[Confirmation](#)

[Miscellaneous](#)

[Environmental Confirmations](#)

Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3VA1120-6EE46-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1120-6EE46-0AA0>

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

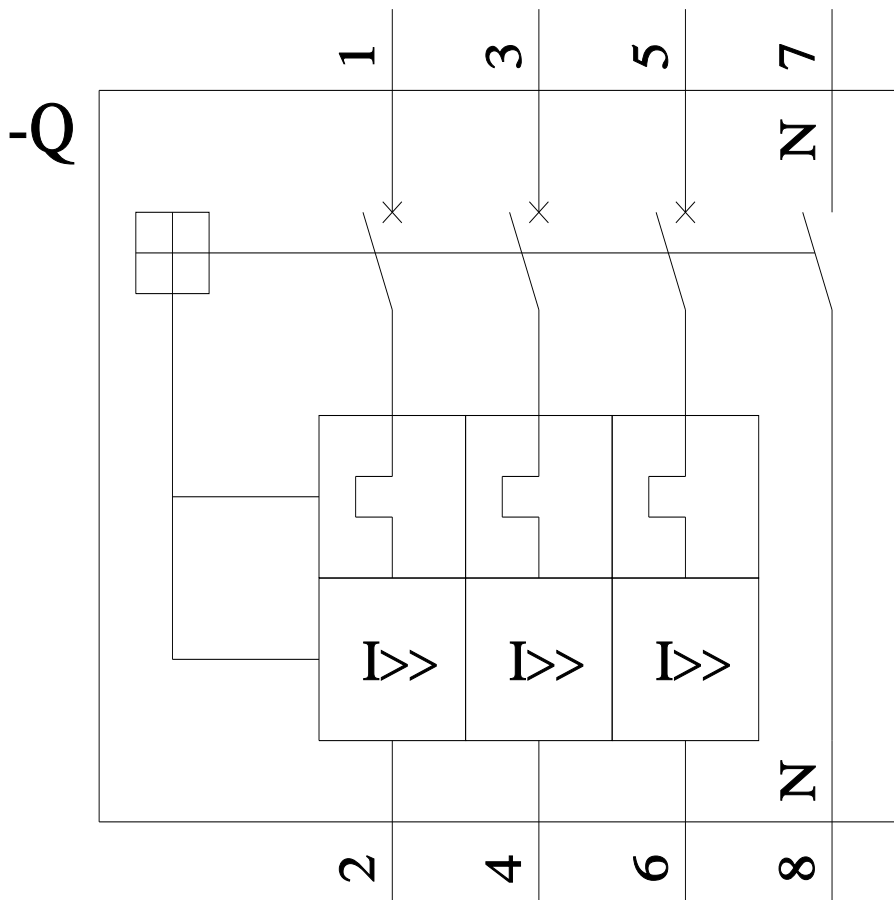
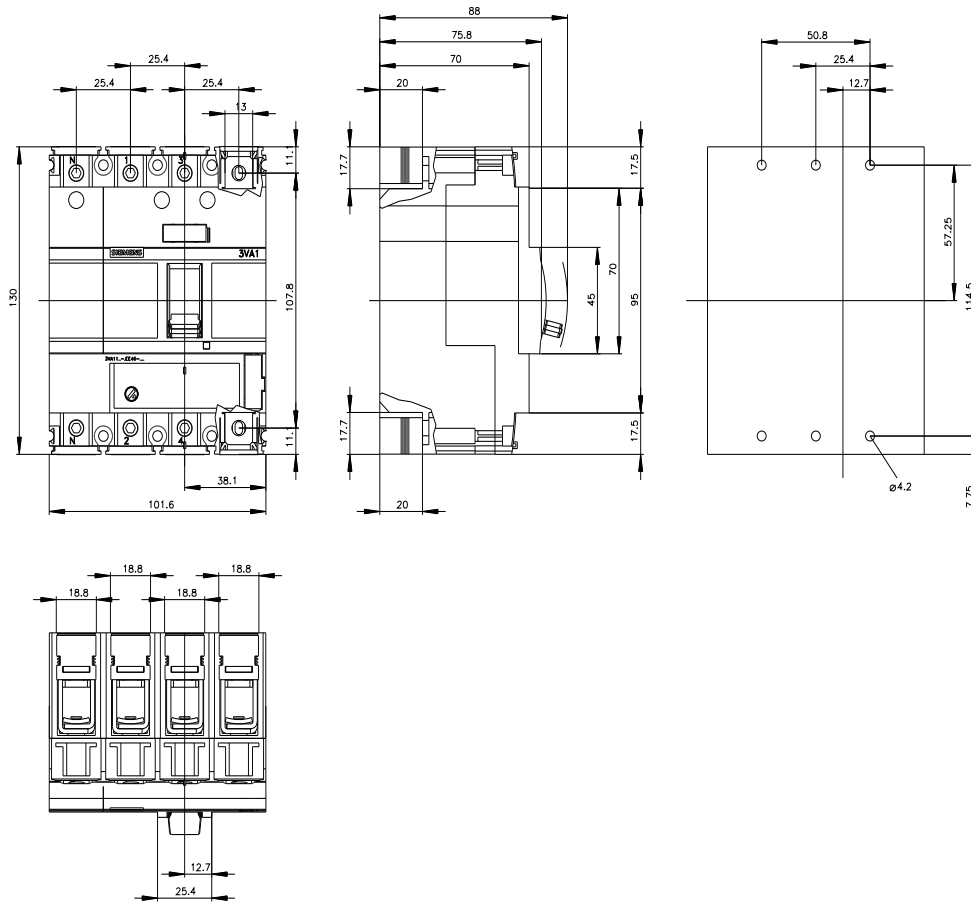
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1120-6EE46-0AA0

CAX-Online-Generator

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

Tender specifications

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



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