



circuit breaker 3VA1 IEC Frame 160 breaking capacity class H $I_{cu}=70 \text{ kA} @ 415 \text{ V}$
 4-pole, line protection TM210, FTFM, $I_n=40 \text{ A}$ overload protection $I_r=40 \text{ A}$
 permanently set short-circuit protection $I_i=10 \times I_n$ neutral conductor protection
 100% terminal connection

| Model | |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| product brand name | SENTRON |
| product designation | Molded case circuit breaker |
| design of the product | Line protection |
| design of the overcurrent release | TM210 |
| 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 | 10.8 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 | 1.17 kg |
| Current | |
| operational current | |
| • at 40 °C | 40 A |
| • at 45 °C | 40 A |
| • at 50 °C | 40 A |
| • at 55 °C | 39 A |
| • at 60 °C | 39 A |
| • at 65 °C | 38 A |
| • at 70 °C | 37 A |
| Switching capacity according to IEC 60947 | |
| switching capacity class of the circuit breaker | H |
| maximum short-circuit current breaking capacity (I_{cu}) | |
| • 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 (I_{cs}) | |

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 | 40 A 40 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 | 400 A 400 A |
| adjustable setting current (I _{nN}) / for N-tripping <ul style="list-style-type: none"> • minimum • maximum | 40 A 40 A |
| design of the N-conductor protection | 100% |
| 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



[Confirmation](#)



General Product Approval

EMV

Test Certificates

[Miscellaneous](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Miscellaneous](#)

Marine / Shipping



[CCS \(China Classification Society\)](#)

other

Environment

[Confirmation](#)

[Miscellaneous](#)

[Miscellaneous](#)



[Environmental Confirmations](#)

Environment

[Environmental Confirmations](#)

Further information

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=3VA1140-6GD46-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA1140-6GD46-0AA0>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1140-6GD46-0AA0

CAX-Online-Generator

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

Tender specifications

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



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