# SIEMENS

#### Data sheet

### 3VA5190-4ED12-1AA0



circuit breaker 3VA5 UL frame 125 breaking capacity class S 25kA @ 277 V 1-pole, line protection TM210, FTFM, In=90A overload protection Ir=90A fixed short-circuit protection Ii=10 x In UL489 SB (naval), 50 deg. cel. nut keeper kit on both sides

product brand name         SENTRON           product designation         Molded-case circuit breaker           product designation / according to UL file         SEAM           design of the product         System protection           design of the load switch / according to UL 489 / Heating, Air Conditioning, and Retrigeration circuit breaker (HACR Type)         Yes           design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HACR Type)         No           design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)         No           design of the core current release         L1           protection function of the overcurrent release         L1           operating voltage / at AC / rated value         415 V           operating voltage / at AC / rated value         7.13 W           operating voltage / at AC / rated value         7.13 W           operating state / per pole         8000           electrical endurance (operating cycles) / typical         20 000           electrical endurance (operating cycles) / at AO V         8 000           electrical endurance (operating cycles) / at AO V         8 000           electrical endurance (operating cycles) / at AO V         8 000           electrical endurance (operating cycles) / at AO V         8 000           electrical endurance (operating cycl	Model	
product designation / according to UL file         SEAM           design of the product         System protection           design of the load switch / according to UL 489 / Heating, AIT         Yes           Conditioning, and Refrigeration circuit breaker (HACR Type)         No           design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (WID Type)         No           design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)         No           design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)         No           design of the overcurrent release         Ll           number of poles         1           General technical data         7.13 W           operating voltage / at AC / rated value         7.13 W           power loss [W] / for rated value of the current / at AC / in ta 800 V         8 000           electrical endurance (operating cycles) / typical         20 000           electrical endurance (operating cycles) / typical         8 000           ground-fau	product brand name	SENTRON
design of the product     System protection       design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration iccuit breaker (HACR Type)     Yes       design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HACR Type)     No       design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (SWD Type)     No       design of the overcurrent release     TM210       protection function of the overcurrent release     Ll       number of poles     1       Operating voltage / at AC / rated value     415 V       operating voltage / at AC / rated value     7.13 W       operating voltage / at AC / rated value     7.13 W       operating voltage / at AC / rated value     4000       electrical endurance (operating cycles) / typical     20 000       electrical endurance (operating cycles) / typical     8 000       electrical endurance (operating cycles) / typical     20 000       electrical endurance (operating cycles) / typical     8 000       ground-fault monitoring version     Without       product feature / for neutral conductors / upgradable/retrofittable     No       / short-ricruit and overload pro	product designation	Molded-case circuit breaker
design of the load switch / according to UL 489 / Heating, Air       Yes         Conditioning, and Refigeration circuit breaker (HACR Type)       No         design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HID Type)       No         design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)       No         design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)       No         operating voltage / at AC / rated value       11         operating voltage / at AC / rated value       415 V         opower loss [W] / maximum       7.13 W         power loss [W] / for rated value of the current / at AC / in hot operating state / per pole       7.13 W         mechanical service Iffe (operating cycles) / typical       20 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AO-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AO-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AO-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AO-1 / at 380/415 V       8 000         ground-fault monitoring version       without         product fe	product designation / according to UL file	SEAM
Conditioning, and Refigeration circuit breaker (HACR Type)       No         design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HID Type)       No         design of the load switch / according to UL 489 / Switching Duty circuit breaker (HID Type)       No         design of the overcurrent release       TM210         protection function of the overcurrent release       LI         operating voltage / at AC / rated value       415 V         operating voltage / at AC / rated value       415 V         operating voltage / at AC / rated value       7.13 W         operating state / per pole       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / typical       20 000         electrical endurance (operating cycles) / typical       8 000         electrical endurance (operating cycles) / totoo V       4 000	design of the product	System protection
Discharge circuit breaker (HID Typé)       No         design of the load switch / according to UL 489 / Switching Duty       No         design of the overcurrent release       TM210         protection function of the overcurrent release       Ll         number of poles       1         General technical data       7.13 W         power loss [W] / maximum       7.13 W         power loss [W] / for rated value of the current / at AC / in hot operating state / per pole       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / ta AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC0 V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         ground-fault monitoring version       without         product fautre / for neutral conductors / upgradable/retrofittable       No         • other measurement function       No         • other measurement function       No         <		Yes
circuit breaker (SWD Type)       Image: State (State	6 6 <i>7</i>	No
protection function of the overcurrent release         Li           number of poles         1           General technical data		No
number of poles       1         General technical data	design of the overcurrent release	TM210
General technical data         operating voltage / at AC / rated value       415 V         power loss [W] / maximum       7.13 W         power loss [W] / for rated value of the current / at AC / in hot operating stafe / per pole       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 600 V       4 000         product function comparating cycles) / at 600 V       4 000         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         • other measurement function       No         operational current       90 A         • at 40 °C       90 A         • at 50 °C       86 A         • at 55 °C       80 A <td>protection function of the overcurrent release</td> <td>LI</td>	protection function of the overcurrent release	LI
operating voltage / at AC / rated value       415 V         power loss [W] / maximum       7.13 W         power loss [W] / for rated value of the current / at AC / in hot operating state / per pole       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / typical       20 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at AC 0 V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         electrical endurance (operating cycles) / at ABO V       8 000         product feature / for neutral conductors / upgradable/retrofittable       No         / short-circuit and overload proof       without         product function       without         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current       90 A         • at 40 °C       90 A         • at 40 °C       86 A         • at 40 °C       86 A         • at 55 °C       86 A         • at 55 °C       86 A         • at 65 °C	number of poles	1
rower loss [W] / maximum       7.13 W         power loss [W] / for rated value of the current / at AC / in hot       7.13 W         power loss [W] / for rated value of the current / at AC / in hot       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at AC 0 V       4 000         product feature / for neutral conductors / upgradable/retrofittable       No         / short-circuit and overload proof       without         product function       without         order measurement function       No         Net Weight       0.404 kg         Current       at 40 °C         e at 40 °C       90 A         e at 55 °C       84 A         e at 60 °C       82 A         e at 65 °C       80 A	General technical data	
power loss [W] / for rated value of the current / at AC / in hot       7.13 W         operating state / per pole       7.13 W         mechanical service life (operating cycles) / typical       20 000         electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at AC V       8 000         electrical endurance (operating cycles) / at AC V       4 000         electrical endurance (operating cycles) / at AO V       4 000         product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof       No         ground-fault monitoring version       without         product function       No         • other measurement function       No         • other measurement function       No         operational current       90 A         • at 40 °C       90 A         • at 45 °C       88 A         • at 45 °C       86 A         • at 45 °C       86 A         • at 45 °C       86 A         • at 55 °C       84 A         • at 65 °C       80 A	operating voltage / at AC / rated value	415 V
operating state / per pole20 000mechanical service life (operating cycles) / typical20 000electrical endurance (operating cycles) / at AC-1 / at 380/415 V8 000electrical endurance (operating cycles) / at AC-1 / at 690 V4 000electrical endurance (operating cycles) / at 480 V8 000electrical endurance (operating cycles) / at 600 V4 000product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proofNoground-fault monitoring versionwithoutproduct functionNo• communication functionNo• other measurement functionNo• other measurement function0.404 kgcurrentat 40 °C• at 40 °C90 A• at 45 °C88 A• at 45 °C86 A• at 55 °C84 A• at 60 °C80 A	power loss [W] / maximum	7.13 W
electrical endurance (operating cycles) / at AC-1 / at 380/415 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       8 000         electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at 600 V       4 000         product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof       No         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         • other measurement function       No         operating / according to UL 489 / 100%-rated breaker       No         operational current       90 A         • at 40 °C       90 A         • at 40 °C       88 A         • at 50 °C       86 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A		7.13 W
electrical endurance (operating cycles) / at AC-1 / at 690 V       4 000         electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 600 V       4 000         product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof       No         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current       marking / according to UL 489 / 100%-rated breaker         operational current       90 A         • at 40 °C       90 A         • at 50 °C       88 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	mechanical service life (operating cycles) / typical	20 000
electrical endurance (operating cycles) / at 480 V       8 000         electrical endurance (operating cycles) / at 600 V       4 000         product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof       No         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current       No         marking / according to UL 489 / 100%-rated breaker       No         operational current       90 A         • at 40 °C       88 A         • at 50 °C       86 A         • at 60 °C       82 A         • at 65 °C       80 A	electrical endurance (operating cycles) / at AC-1 / at 380/415 V	8 000
electrical endurance (operating cycles) / at 600 V       4 000         product feature / for neutral conductors / upgradable/retrofittable       No         / short-circuit and overload proof       without         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current       No         marking / according to UL 489 / 100%-rated breaker       No         operational current       90 A         • at 40 °C       90 A         • at 45 °C       88 A         • at 50 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	electrical endurance (operating cycles) / at AC-1 / at 690 V	4 000
product feature / for neutral conductors / upgradable/retrofittable       No         / short-circuit and overload proof       without         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current       marking / according to UL 489 / 100%-rated breaker         • at 40 °C       90 A         • at 45 °C       88 A         • at 50 °C       86 A         • at 65 °C       80 A	electrical endurance (operating cycles) / at 480 V	8 000
/ short-circuit and overload proof       without         ground-fault monitoring version       without         product function       No         • communication function       No         • other measurement function       No         Net Weight       0.404 kg         Current         marking / according to UL 489 / 100%-rated breaker       No         operational current       90 A         • at 40 °C       90 A         • at 45 °C       88 A         • at 50 °C       86 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	electrical endurance (operating cycles) / at 600 V	4 000
product functionNo• other measurement functionNo• other measurement functionNoNet Weight0.404 kgCurrentmarking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 55 °C86 A• at 60 °C82 A• at 60 °C80 A		No
• communication functionNo• other measurement functionNoNet Weight0.404 kgCurrentCurrentmarking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 50 °C86 A• at 55 °C84 A• at 60 °C82 A• at 60 °C80 A	ground-fault monitoring version	without
• other measurement functionNoNet Weight0.404 kgCurrentImarking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 55 °C86 A• at 60 °C82 A• at 60 °C80 A	product function	
Net Weight0.404 kgCurrentNomarking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 55 °C86 A• at 60 °C82 A• at 65 °C80 A	<ul> <li>communication function</li> </ul>	No
Currentmarking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 50 °C86 A• at 55 °C84 A• at 60 °C82 A• at 65 °C80 A	<ul> <li>other measurement function</li> </ul>	No
marking / according to UL 489 / 100%-rated breakerNooperational current90 A• at 40 °C90 A• at 45 °C88 A• at 50 °C86 A• at 55 °C84 A• at 60 °C82 A• at 65 °C80 A	Net Weight	0.404 kg
operational current         90 A           • at 40 °C         90 A           • at 45 °C         88 A           • at 50 °C         86 A           • at 55 °C         84 A           • at 60 °C         82 A           • at 65 °C         80 A	Current	
• at 40 °C       90 A         • at 45 °C       88 A         • at 50 °C       86 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	marking / according to UL 489 / 100%-rated breaker	No
• at 45 °C       88 A         • at 50 °C       86 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	operational current	
• at 50 °C       86 A         • at 55 °C       84 A         • at 60 °C       82 A         • at 65 °C       80 A	• at 40 °C	90 A
• at 55 °C 84 A • at 60 °C 82 A • at 65 °C 80 A	• at 45 °C	88 A
• at 60 °C 82 A • at 65 °C 80 A	● at 50 °C	86 A
• at 65 °C 80 A	● at 55 °C	84 A
	• at 60 °C	82 A
• at 70 °C 79 A	● at 65 °C	80 A
	• at 70 °C	79 A

Switching capacity according to IEC 60947	
switching capacity class of the circuit breaker	S
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
Switching capacity according to UL 489	· ·
current breaking capacity	
• at 120 V	65 kA
• at 277 V	25 kA
• at 347 V	14 kA
Adjustable parameters	
adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic	
• minimum	90 A
• maximum	90 A
adjustable response value delay time (tr) / for L-tripping / with I2t characteristic	
• minimum	1 s
• maximum	1 s
adjustable response value setting current (li) / for l-tripping	
• minimum	900 A
maximum	900 A
adjustable setting current (InN) / for N-tripping	
● minimum	0 A
maximum	0 A
adjustable current response value current / of the current- dependent overload release	90 90 A
product function / grounding protection	No
Mechanical Design	
product component	
<ul> <li>undervoltage release</li> </ul>	No
<ul> <li>voltage trigger</li> </ul>	No
trip indicator	No
height [in]	5.51 in
height	140 mm
width [in]	1 in
width	25.4 mm
depth [in]	3.01 in
depth	76.5 mm
Connections	
arrangement of electrical connectors / for main current circuit	Front connection
type of electrical connection / for main current circuit type of connectable conductor cross-sections / for flat-bar terminal connection / minimum	nut keeper kit on both ends 12 x 1 mm
type of connectable conductor cross-sections / for flat-bar terminal connection / maximum	17 x 6.5 mm
Auxiliary circuit	
number of CO contacts / for auxiliary contacts	0
Accessories	
product extension / optional / motor drive	No
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	
certificate of suitability / as approval for NAVAL (no combat vessels) / supplement SB	Yes
General Product Approval	



#### 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)

 $\underline{https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3VA5190-4ED12-1AA0}$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3VA5190-4ED12-1AA0

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

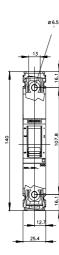
http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3VA5190-4ED12-1AA0

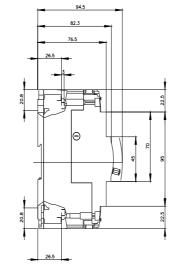
CAx-Online-Generator

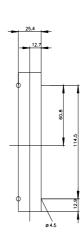
http://www.siemens.com/cax

Tender specifications

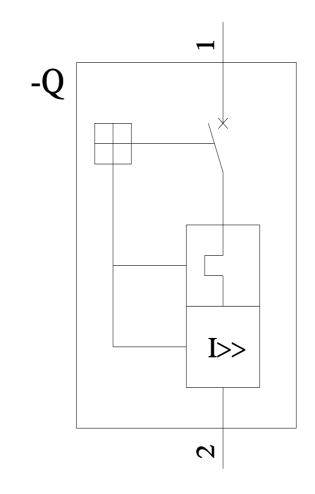
http://www.siemens.com/specifications

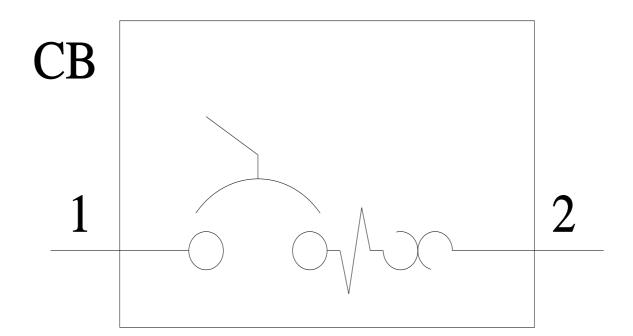












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