3VA5145-6ED12-1AA0

Data sheet



circuit breaker 3VA5 UL frame 125 breaking capacity class H 50kA @ 277 V 1-pole, line protection TM210, FTFM, In=45A overload protection Ir=45A fixed short-circuit protection Ii=10 x In UL489 SB (naval), 50 deg. cel. nut keeper kit on both sides

product designation Molded-case circuit breaker HSEAM design of the product Molded-case circuit breaker HSEAM design of the load switch / according to UL 489 / Heating, Air Yes Conditioning, and Refrigeration circuit breaker (HACR Type) design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (INT Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (INUT Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (INUT Type) design of the overcurrent release TM210 protection function of the overcurrent release LI number of poles 1 General technical data operating voitage / at AC / rated value 415 V power loss [W] / for rated value of the current / at AC / in hot operating state / per pole mechanical service life (operating cycles) / at AC-1 / at 380 V electrical endurance (operating cycles) / at AC-1 / at 380 V electrical endurance (operating cycles) / at AC-0 / at 380 V electrical endurance (operating cycles) / at 80 V electrical endurance (operating cycles) / at 60 V product function No electrical endurance (operating cycles) / at 60 V	Model	
product designation / according to UL file design of the product design of the product System protection Ves Ves Conditioning, and Refrigeration circuit breaker (HACR Type) design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty design of the overcurrent release Intention o	product brand name	SENTRON
design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) design of the load switch / according to UL 489 / High-Intensity-Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type) design of the overcurrent release TM210 protection function of the overcurrent release I the protection function of th	product designation	Molded-case circuit breaker
design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type) design of the load switch / according to UL 489 / High-Intensity-Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type) design of the overcurrent release TMZ10 protection function of the overcurrent release LI number of poles 1 Ceneral technical data operating voltage / at AC / rated value power loss [W] / maximum 3.8 W power loss [W] / maximum 3.8 W power loss [W] / for rated value of the current / at AC / in hot operating state / per pole mechanical service life (operating cycles) / typical electrical endurance (operating cycles) / at AC-1 / at 680 V electrical endurance (operating cycles) / at 480 V electrical endurance (op	product designation / according to UL file	H5EAM
Conditioning, and Refrigeration circuit breaker (HACR Type) design of the load switch / according to UL 489 / High-Intensity- Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type) design of the overcurrent release TM210 protection function of the overcurrent release LI number of poles 1 Ceneral technical data operating voltage / at AC / rated value operating voltage / at AC / rated value opwer loss [W] / maximum opwer loss [W] / for rated value of the current / at AC / in hot operating state / per pole mechanical service life (operating cycles) / typical electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 690 V electrical endurance (operating cycles) / at AC-0 V electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical	design of the product	System protection
Discharge circuit breaker (HID Type) design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type) design of the overcurrent release protection function of the overcurrent release ILI number of poles Ceneral technical data operating voltage / at AC / rated value A15 V power loss [W] / maximum power loss [W] / for rated value of the current / at AC / in hot operating state / per pole mechanical service life (operating cycles) / typical electrical endurance (operating cycles) / at AC-1 / at 380/415 V electrical endurance (operating cycles) / at AC-1 / at 690 V electrical endurance (operating cycles) / at ABO V electrical endurance (operating cycles) / at 480 V electrical endurance (operating cycles) / at 600 V product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version product function • communication function • other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current • at 40 °C • at 50 °C • at 50 °C • at 60 °C • 42 A • at 60 °C • at		Yes
design of the overcurrent release protection function of the overcurrent release LI number of poles 1 General technical data operating voltage / at AC / rated value 415 V power loss [W] / maximum 3.8 W power loss [W] / for rated value of the current / at AC / in hot operating state / per pole mechanical service life (operating cycles) / typical 20 000 electrical endurance (operating cycles) / tat 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 4 000 electrical endurance (operating cycles) / at AC-1 / at 690 V 4 000 electrical endurance (operating cycles) / at AC-1 / at 690 V 4 000 electrical endurance (operating cycles) / at AC-1 / at 690 V 4 000 electrical endurance (operating cycles) / at 800 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 4 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operating cycles) / at 600 V 6 000 electrical endurance (operati		Yes
protection function of the overcurrent release		No
Number of poles 1	design of the overcurrent release	TM210
General technical data operating voltage / at AC / rated value	protection function of the overcurrent release	LI
operating voltage / at AC / rated value 415 V power loss [W] / maximum 3.8 W power loss [W] / for rated value of the current / at AC / in hot operating state / per pole 6 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 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 600 V 4 000 product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof 9 without product function 6 v communication function 7 v communication function 8 v communication function 8 v communication function 9 v communication 10 v communication function 10 v communication	number of poles	1
power loss [W] / for rated value of the current / at AC / in hot operating state / per pole 20 000	General technical data	
power loss [W] / for rated value of the current / at AC / in hot operating state / per pole 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 600 V 4 000 product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version without product function No • other measurement function No Net Weight 0.404 kg Current marking / according to UL 489 / 100%-rated breaker No operational current • at 40 °C 45 A • at 45 °C 44 A • at 55 °C 43 A • at 60 °C 42 A • at 60 °C 42 A	operating voltage / at AC / rated value	415 V
operating state / per pole 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 600 V 4 000 product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version without product function No • other measurement function No Net Weight 0.404 kg Current marking / according to UL 489 / 100%-rated breaker No operational current • at 40 °C 45 A • at 50 °C 44 A • at 65 °C 42 A • at 65 °C 42 A • at 65 °C 42 A	power loss [W] / maximum	3.8 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 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 ground-fault monitoring version without product function • communication function • other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current • at 40 °C • at 45 °C • at 45 °C • at 45 °C • at 45 °C • at 60 °C • at 65 °C • at 65 °C • at 65 °C • at 42 A • at 65 °C		3.8 W
electrical endurance (operating cycles) / at AC-1 / at 690 V electrical endurance (operating cycles) / at 480 V electrical endurance (operating cycles) / at 600 V product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version vithout product function other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current other at 40 °C other days of the following of the	mechanical service life (operating cycles) / typical	20 000
electrical endurance (operating cycles) / at 480 V electrical endurance (operating cycles) / at 600 V product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version product function communication function other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current at 40 °C at 45 °C at 45 °C at 45 °C 44 A at 55 °C 43 A at 60 °C at 65 °C 42 A at 65 °C 42 A	electrical endurance (operating cycles) / at AC-1 / at 380/415 V	8 000
electrical endurance (operating cycles) / at 600 V product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version product function communication function other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current at 40 °C at 45 °C at 45 °C at 45 °C 44 A at 55 °C 43 A at 60 °C at 65 °C 42 A at 65 °C 42 A	electrical endurance (operating cycles) / at AC-1 / at 690 V	4 000
product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof ground-fault monitoring version without product function • communication function No • other measurement function No Net Weight 0.404 kg Current marking / according to UL 489 / 100%-rated breaker No operational current • at 40 °C 45 A • at 45 °C 44 A • at 50 °C 44 A • at 55 °C 43 A • at 60 °C 42 A • at 65 °C 42 A	electrical endurance (operating cycles) / at 480 V	8 000
/ short-circuit and overload proof ground-fault monitoring version • communication function • other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker • at 40 °C • at 45 °C • at 45 °C • at 55 °C • at 60 °C • at 65 °C without without No No No No A No A A A A A A A A A A A A A	electrical endurance (operating cycles) / at 600 V	4 000
product function		No
 ◆ communication function No Nother measurement function No Net Weight 0.404 kg Current marking / according to UL 489 / 100%-rated breaker No operational current • at 40 °C • at 45 °C • at 4 A • at 50 °C • at 55 °C • at 60 °C • at 60 °C • at 65 °C • at 65 °C 	ground-fault monitoring version	without
● other measurement function No Net Weight Current marking / according to UL 489 / 100%-rated breaker operational current ● at 40 °C ● at 45 °C ● at 50 °C ● at 55 °C ● at 60 °C ● at 65 °C ● at 65 °C ● 42 A	product function	
Net Weight 0.404 kg Current marking / according to UL 489 / 100%-rated breaker No operational current 45 A • at 40 °C 45 A • at 45 °C 44 A • at 50 °C 44 A • at 55 °C 43 A • at 60 °C 42 A • at 65 °C 42 A	 communication function 	No
Current marking / according to UL 489 / 100%-rated breaker No operational current 45 A • at 40 °C 45 A • at 45 °C 44 A • at 50 °C 44 A • at 55 °C 43 A • at 60 °C 42 A • at 65 °C 42 A	 other measurement function 	No
marking / according to UL 489 / 100%-rated breaker No operational current 45 A • at 40 °C 45 A • at 45 °C 44 A • at 50 °C 44 A • at 55 °C 43 A • at 60 °C 42 A • at 65 °C 42 A	Net Weight	0.404 kg
operational current • at 40 °C • at 45 °C • at 50 °C • at 55 °C • at 60 °C • at 65 °C • at 65 °C • at 65 °C	Current	
 at 40 °C at 45 °C at 50 °C 44 A at 55 °C 43 A at 60 °C at 65 °C 42 A 	marking / according to UL 489 / 100%-rated breaker	No
 at 45 °C at 50 °C 44 A at 55 °C 43 A at 60 °C at 65 °C 42 A 	operational current	
 at 50 °C at 55 °C 43 A at 60 °C at 65 °C 42 A 42 A 	• at 40 °C	45 A
• at 55 °C 43 A • at 60 °C 42 A • at 65 °C 42 A	• at 45 °C	44 A
• at 60 °C 42 A • at 65 °C 42 A	• at 50 °C	44 A
• at 65 °C 42 A	● at 55 °C	43 A
	• at 60 °C	42 A
• at 70 °C 41 A	• at 65 °C	42 A
	● at 70 °C	41 A

switching capacity class of the circuit breaker	H
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
witching capacity according to UL 489	
current breaking capacity	
• at 120 V	100 kA
• at 277 V	50 kA
• at 347 V	18 kA
djustable parameters	
adjustable response value setting current (Ir) / of the L-trip / with	
I2t characteristic	
• minimum	45 A
maximum	45 A
adjustable response value delay time (tr) / for L-tripping / with I2t characteristic	
• minimum	1 s
maximum	1 s
adjustable response value setting current (Ii) / for I-tripping	
• minimum	450 A
• maximum	450 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	32 45 A
product function / grounding protection	No
echanical Design	
product component	
undervoltage release	No
 voltage trigger 	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
onnections	
arrangement of electrical connectors / for main current circuit	Front connection
type of electrical connection / for main current circuit	nut keeper kit on both ends
type of connectable conductor cross-sections / for flat-bar terminal connection / minimum	12 x 1 mm
type of connectable conductor cross-sections / for flat-bar terminal connection / maximum	17 x 6.5 mm
uxiliary circuit	
number of CO contacts / for auxiliary contacts	0
ccessories	
product extension / optional / motor drive	No
nvironmental 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
ertificates	
	Yes



Confirmation





Miscellaneous



EMC

Test Certificates

Marine / Shipping

other



Type Test Certificates/Test Report



Confirmation

Miscellaneous

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)

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

https://support.industry.siemens.com/cs/ww/en/ps/3VA5145-6ED12-1AA0

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

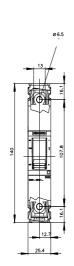
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5145-6ED12-1AA0

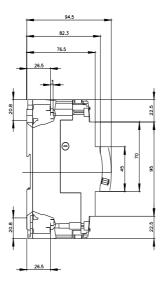
CAx-Online-Generator

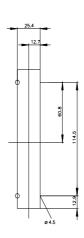
http://www.siemens.com/cax

Tender specifications

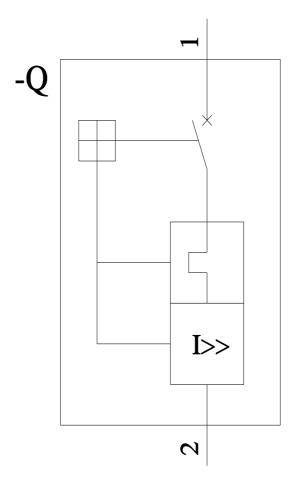
http://www.siemens.com/specifications

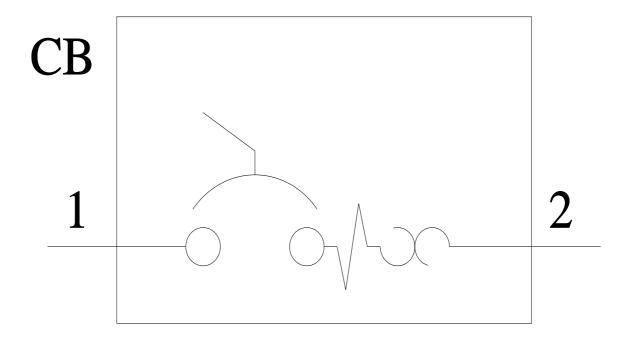












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3VA51456ED121AA0