3VA1220-5MH32-0AA0

Data sheet



circuit breaker 3VA1 IEC Frame 250 breaking capacity class M Icu=55 kA @ 415 V 3-pole, starter protection TM120M, AM, In=200 A without overload protection short-circuit protection Ii=6...14 x In nut keeper kit

Model	
product brand name	SENTRON
product designation	Molded case circuit breaker
design of the product	Starter protection
design of the overcurrent release	TM120M
protection function of the overcurrent release	T
number of poles	3
General technical data	
insulation voltage / rated value	800 V
operating voltage / at AC / rated value	690 V
power loss [W] / maximum	42 W
power loss [W] / for rated value of the current / at AC / in hot operating state / per pole	14 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	5 400
product feature / for neutral conductors / upgradable/retrofittable / short-circuit and overload proof	No
ground-fault monitoring version	Without
product function	
 communication function 	No
other measurement function	No
Net Weight	1.583 kg
Current	
operational current	
• at 40 °C	200 A
• at 45 °C	200 A
● at 50 °C	200 A
● at 55 °C	194 A
• at 60 °C	188 A
• at 65 °C	182 A
• at 70 °C	176 A
Switching capacity according to IEC 60947	
switching capacity class of the circuit breaker	M
maximum short-circuit current breaking capacity (Icu)	
• at 240 V	85 kA
• at 415 V	55 kA
• at 440 V	36 kA
● at 500 V	15 kA
• at 690 V	3 kA
operating short-circuit current breaking capacity (Ics)	

	en 445 V 56 kA 36 kA 3		
e dit 440 V e at 500 V e at 650 V e at 650 V e at 640 V e at 650 V	+ alt 500 V	• at 240 V	85 kA
• nt 500 V 3 NA 3 NA 3 NA • 12 40 V 187 KA • 14 145 V 121 KA • 14 40 V 75.6 KA • 18 1500 V 30 KA • 18 1500 V 4.5 KA • 18 1500 V		• at 415 V	55 kA
* at 890 V short-circuit current making capacity (fcm) * at 240 V * at 440 V * at 440 V * at 440 V * at 500 V * at 500 V * at 500 V * at 890 V design of short-circuit protection * For ewitching 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 pa	short-circuit current making capacity (tern) * al 240 V * al 445 V * al 446 V * al 550 V * al 690 V * de 300	• at 440 V	36 kA
short-circuit current making capacity (lom) • at 240 V • at 415 V • at 440 V • at 440 V • at 890 V • at 890 V • at 890 V • design of short-circuit protection • provide protection • minimum • product function / grounding protection • minimum • maximum • product function / grounding protection • product device grounding protection • protection / grounding / groundin	short-dirout current making capacity (tem) al 2/0 V at 15 V at 145 V at 440 V 5 5 6 kA 5 6 kA 5 5 6 kA 5 6 kA 5 5 6 kA 5 6 kA 5 6 kA 5 5 6 kA 5 8 9 kA 6 k	• at 500 V	10 kA
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width [in] 4.13 in width 105 mm depth [in] 2.76 in depth 70 mm Connections arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxillary circuit number of CO contacts / for auxillary contacts 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 • during storage / maximum	width [in] 4.13 in width 105 mm depth [in] 2.76 in depth 70 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit 10 nut keeper kit on both ends 10 x 1 mm type of connectable conductor cross-sections / for flat-bar terminal connection / minimum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for flat-bar terminal connection / maximum 10 yipe of connectable conductor cross-sections / for the terminal conductor of the surface / of the connections / on the bottom of the switch (N. 1, 3, 5) 10 yield		158 mm
width depth [in] 2.76 in depth 70 mm Connections arrangement of electrical connectors / for main current circuit ruth type of electrical connection / for main current circuit nut keeper kit on both ends 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front IP40 ambient temperature	width depth [in] 2.76 in depth 70 mm Connections arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front IP40 ambient temperature		4.13 in
depth 70 mm Connections arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front e during operation / minimum -25 °C during operation / maximum -40 °C e during storage / minimum -40 °C e during storage / maximum 80 °C reference code / according to IEC 81346-2	depth 70 mm Connections arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front IP40 ambient temperature		105 mm
arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / minimum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / minimum -25 °C during operation / maximum 70 °C during storage / minimum -40 °C eduring storage / maximum 80 °C reference code / according to IEC 81346-2 Q	arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / minimum during operation / maximum during storage / minimum during storage / maximum during storage / maximum during storage / maximum during crediticates Front terminal nut keeper kit on both ends 13 x 1 mm the special contacts (13 x 1 mm the special contacts (13 x 1 mm the special connection of the silver S	depth [in]	2.76 in
arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / maximum during storage / minimum during storage / maximum during storage / maximum during storage / maximum eference code / according to IEC 81346-2 Dava I mut keeper kit on both ends 13 x 1 mm 13 x 1 mm 13 x 1 mm 25 x 8 mm Silver	arrangement of electrical connectors / for main current circuit 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 type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxillary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / minimum -25 °C during operation / maximum -40 °C during storage / minimum -40 °C during storage / maximum -40 °C Approvals / Certificates	depth	70 mm
type of electrical connection / for main current circuit type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C reference code / according to IEC 81346-2 Q	type of electrical connection / for main current circuit type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / minimum during storage / minimum during storage / maximum during storage / maximum during storage / maximum eference code / according to IEC 81346-2 Approvals / Certificates	Connections	
type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts O Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum -40 °C • during storage / minimum -40 °C reference code / according to IEC 81346-2 Q	type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q Approvals / Certificates	arrangement of electrical connectors / for main current circuit	Front terminal
type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connectable conductor cross-sections / for flat-bar terminal connectable maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts O Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum -40 °C • during storage / minimum -40 °C reference code / according to IEC 81346-2 Q	type of connectable conductor cross-sections / for flat-bar terminal connection / minimum type of connectable conductor cross-sections / for flat-bar terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum -25 °C • during operation / maximum -40 °C • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q Approvals / Certificates	type of electrical connection / for main current circuit	nut keeper kit on both ends
terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum -40 °C • during storage / minimum -40 °C • during storage / maximum reference code / according to IEC 81346-2 Q	terminal connection / maximum design of the surface / of the connections / on the top of the switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive 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 reference code / according to IEC 81346-2 Q Approvals / Certificates	type of connectable conductor cross-sections / for flat-bar	·
switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum 70 °C • during storage / minimum 40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	switch (N, 1, 3, 5) design of the surface / of the connections / on the bottom of the switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum • during operation / maximum • during storage / minimum • during storage / minimum • during storage / maximum		25 x 8 mm
switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts 0 Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	switch (N, 2, 4, 6) Auxiliary circuit number of CO contacts / for auxiliary contacts 0 Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / minimum during operation / maximum during storage / minimum during storage / maximum eduring storage / maximum eduring storage / maximum so C reference code / according to IEC 81346-2 Approvals / Certificates	switch (N, 1, 3, 5)	Silver
number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	number of CO contacts / for auxiliary contacts Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates	switch (N, 2, 4, 6)	Silver
product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	Accessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates		
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 reference code / according to IEC 81346-2 Q	Environmental conditions protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum 70 °C • during storage / minimum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates		0
protection class IP / on the front ambient temperature • during operation / minimum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates	product extension / optional / motor drive	Yes
ambient temperature • during operation / minimum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C • during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	ambient temperature • during operation / minimum • during operation / maximum 70 °C • during storage / minimum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates	Environmental conditions	
 during operation / minimum during operation / maximum C during storage / minimum during storage / maximum during storage / according to IEC 81346-2 Reference code / according to IEC 81346-2	 during operation / minimum during operation / maximum during storage / minimum during storage / maximum during storage / maximum C reference code / according to IEC 81346-2 Approvals / Certificates 	protection class IP / on the front	IP40
 during operation / minimum during operation / maximum C during storage / minimum during storage / maximum during storage / according to IEC 81346-2 Reference code / according to IEC 81346-2	 during operation / minimum during operation / maximum during storage / minimum during storage / maximum during storage / maximum C reference code / according to IEC 81346-2 Approvals / Certificates 	ambient temperature	
 during operation / maximum during storage / minimum during storage / maximum during storage / maximum c reference code / according to IEC 81346-2 	• during operation / maximum • during storage / minimum • during storage / maximum • during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates		-25 °C
 ◆ during storage / minimum ◆ during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	◆ during storage / minimum ◆ during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates -40 °C Q Approvals / Certificates		70 °C
● during storage / maximum 80 °C reference code / according to IEC 81346-2 Q	during storage / maximum 80 °C reference code / according to IEC 81346-2 Approvals / Certificates 80 °C Q		-40 °C
reference code / according to IEC 81346-2 Q	reference code / according to IEC 81346-2 Q Approvals / Certificates		80 °C
<u> </u>	Approvals / Certificates		





Confirmation





Miscellaneous

General Product Approval

EMV

Test Certificates

<u>KC</u>





Special Test Certificate

Type Test Certificates/Test Report

Miscellaneous

Marine / Shipping

other

Environment





Confirmation

Miscellaneous

Miscellaneous



Environment

Environmental Confirmations 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=3VA1220-5MH32-0AA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3VA1220-5MH32-0AA0

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

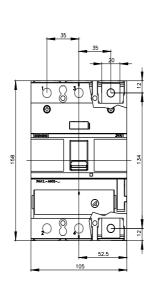
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA1220-5MH32-0AA0

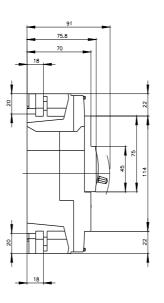
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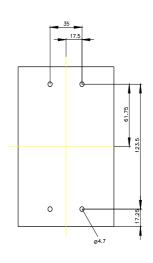
http://www.siemens.com/cax

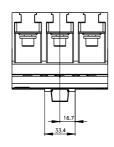
Tender specifications

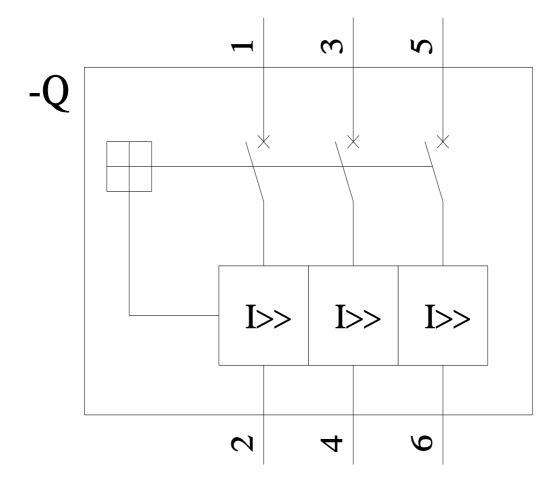
http://www.siemens.com/specifications











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