SIEMENS

Data sheet

3VA5120-6EC36-0AA0



circuit breaker 3VA5 UL frame 125 breaking capacity class H 65kA @ 480 V 3-pole, line protection TM230, FTAM, In=20A overload protection Ir=20A fixed short-circuit protection li=7.5...15 x In cable connection on both sides

Model	
product brand name	SENTRON
product designation	Molded-case circuit breaker
product designation / according to UL file	HEAS
Product version	System protection
design of the load switch / according to UL 489 / Heating, Air Conditioning, and Refrigeration circuit breaker (HACR Type)	Yes
design of the load switch / according to UL 489 / High- Intensity-Discharge circuit breaker (HID Type)	Yes
design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)	Yes
design of the overcurrent release	TM230
protection function of the overcurrent release	LI
number of poles	3
General technical data	
insulation voltage / rated value	800 V
Max. rated operational voltage Ue with DC	500 V
operating voltage / at AC / rated value	690 V
power loss [W] / maximum	12.2 W
Active power loss / for rated value of the current / at AC / in hot operating state / per pole	4.07 W
mechanical service life (switching cycles) / typical	20 000
Electrical endurance (switching cycles) / at AC-1 / at 380/415 V 50/60 Hz	8 000
Electrical endurance (switching cycles) / at AC-1 / at 690 V 50/60 Hz	4 000
electrical endurance (switching cycles) / at 480 V	8 000
electrical endurance (switching cycles) / at 600 V	4 000
Neutral conductors / upgradeable/retrofittable	No
ground-fault monitoring version	without
product function	
• communication function	No
 other measurement function 	No
Net Weight	1.017 kg
Current	
marking / according to UL 489 / 100%-rated breaker	No
operational current	
● at 40 °C	20 A
● at 45 °C	20 A
● at 50 °C	19 A
● at 55 °C	19 A
• at 60 °C	19 A

• at 65 °C	18 A
• at 70 °C	18 A
Switching capacity according to IEC 60947	
switching capacity class of the circuit breaker breaking capacity maximum short-circuit current (Icu)	Н
• at 240 V	150 kA
• at 415 V	70 kA
• at 690 V	10 kA
breaking capacity operating short-circuit current (lcs)	
• at 240 V	150 kA
● at 415 V	70 kA
● at 690 V	5 kA
short-circuit current making capacity (Icm)	
• at 240 V	330 kA
at 415 V at 690 V	154 kA 17 kA
design of short-circuit protection	For switching power values in DC networks, see the 3VA molded case
design of short-circuit protection	circuit breaker device manual; link to be found under Service & Support in the last chapter
Switching capacity according to UL 489	
breaking capacity current	
● at 240 V	150 kA
● at 480 V	65 kA
● at 600 Y/347 V	25 kA
Adjustable parameters	
product feature / for L-tripping / selectable characteristic function	No
type of value list setting current (Ir) / for L-tripping / with I2t characteristic	Fest
reference value setting current (Ir) / for L-tripping / with I2t characteristic	x In
set values setting current (Ir) / for L-tripping / with I2t characteristic	1
adjustable response factor setting current (Ir) / for L-tripping / with I2t characteristic / minimum	1
adjustable response factor setting current (Ir) / for L-tripping / with I2t characteristic / maximum	1
adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic / minimum	20 A
adjustable response value setting current (Ir) / of the L-trip / with I2t characteristic / maximum	20 A
type of value list delay time (tr) / for L-tripping / with I2t characteristic	Fest
reference value delay time (tr) / for L-tripping / with I2t characteristic	\$
set values delay time (tr) / for L-tripping / with I2t characteristic	1
adjustable response value delay time (tr) / for L-tripping / with I2t characteristic / minimum	1 s
adjustable response value delay time (tr) / for L-tripping / with I2t characteristic / maximum	1 s
product feature / for S-tripping / independent of direction / selectable characteristic function	No
product feature / for I-tripping / can be switched on/off	No
design of I-trip / adjustable	Yes
reference value setting current (li) / for I-tripping	x ln 7.5:0:10.5:12:13.5:15
set values setting current (li) / for I-tripping adjustable response factor setting current (li) / for I-tripping / minimum	7.5;9;10.5;12;13.5;15 7.5
adjustable response factor setting current (li) / for l-tripping / maximum	15
adjustable response value setting current (li) / for l-tripping / minimum	150 A
adjustable response value setting current (Ii) / for I-tripping / maximum	300 A
product feature / for G-tripping / selectable characteristic function	No

product component • undervoltage release • voltage trigger • trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth Tonnections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit No	switched onloff product feature / with neutral conductor protection / adjustable stype of value list setting current (InN) / for N-tripping reference value setting current (InN) / for N-tripping adjustable absolute value setting current (InN) / for N-tripping / N-tripping / Innimum adjustable absolute value setting current (InN) / for N-tripping / Innimum adjustable absolute value setting current (InN) / for N-tripping of maximum tripping characteristic / of the lower tolerance band tripping characteristic / of the lower tolerance band tripping characteristic / of the upper tolerance band tripping characteristic / of the upper tolerance band tripping characteristic / of the upper tolerance band tripping characteristic / of the let-through current of the province of the let-through current object of the let-thro		
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let-through energy characteristic / at 690 V type of value list setting current (ii) / for l-tripping tripping characteristic / of the let-through current characteristic / at 240 V tripping characteristic / of the let-through current characteristic / at 415 V tripping characteristic / at 15 V tripping characteristic / at 690 V Adjustable response value current / lg min adjustable current response value current / of the current- dependent overload release / full-scale value Ground fault protection / tripping switchable / I2t=ON/OFF Mechanical Design product component	let-through energy characteristic / at 690 V type of value list setting current (li) / for I-tripping tripping characteristic / of the let-through current characteristic / at 240 V tripping characteristic / at the let-through current characteristic / at 145 V tripping characteristic / at 145 V tripping characteristic / at 145 V tripping characteristic / at 690 V Adjustable response value current / ig min. adjustable current response value current / of the current- dependent overload release / full-scale value Ground fault protection / tripping switchable / IZI=ON/OFF No No No No No No No No No	let-through energy characteristic / at 240 V	DE_3VA5_1_20A_TM_line u starter_3u4p_240V
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characteristic / at 590 V Adjustable response value current / lg min. adjustable current response value current / of the current- dependent overload release / full-scale value Ground fault protection / tripping switchable / l2t=ON/OFF No Mechanical Design product component • undervoltage release • voltage trigger • trip indicator No height [in] 140 mm width [in] 17ype of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connector / for main current circuit circuit current circuit number of CO contacts / for auxiliary contacts 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 / minimum • during storage / maximum 80 °C Cortificates	characteristic / at 69 V Adjustable response value current / Ig min.		DS_3VA5_1_20A_TM_line u starter_3u4p_415V
adjustable current response value current / of the current- dependent overload release / full-scale value Ground fault protection / tripping switchable / I2t=ON/OFF No Mechanical Design product component • undervoltage release • voltage trigger • trip indicator height [in] Height 140 mm width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth [in] 3.01 in depth [in] 3.01 in Gepth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit type of electrical connectors / for main current circuit availary circuit number of CO contacts / for auxiliary contacts Avxillary circuit number of CO contacts / for auxiliary contacts product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum • during storage / maximum 80 °C Certificates	adjustable current response value current / of the current- dependent overload release / full-scale value Ground fault protection / tripping switchable / I2t=ON/OFF Mechanical Design product component • undervoltage release • voltage trigger • trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit type of electrical connection / for auxiliary contacts Auxiliary circuit number of CO contacts / for auxiliary contacts Product extension / optional / motor drive e during operation / maximum • during storage / minimum • during storage / minimum • during storage / minimum • during storage / maximum 20 A Accessories reference code / according to IEC 81346-2 Q Accesticates reference code / according to IEC 81346-2 Q Accesticates reference code / according to IEC 81346-2 Q Accesticates Termore connection / tripping switchable / I2t=ON/OFF No No No No No No No No No 1x (14 AWG - 8 AWG) 76.2 mm 3 in 1x (14 AWG - 8 AWG) 76.2 mm 4 current connection 1x (14 AWG - 8 AWG) 76.2 mm 1x (14 AWG - 8 AWG) 76		DS_3VA5_1_20A_TM_line u starter_3u4p_690V
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dependent overload release / full-scale value Ground fault protection / tripping switchable / I2t=ON/OFF No Mechanical Design product component	dependent overload release / full-scale value Ground fault protection / tripping switchable / I2t=ON/OFF Mechanical Design product component	, ,	20 A
Mechanical Design product component undervoltage release voltage frigger Itrip indicator No height [in] Height Width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth To.5.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit rounder of CO contacts / for auxiliary contacts Product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature during operation / maximum during driving relations during storage / maximum during for conditions Professionage / maximum during for conditions Professionage / maximum during for conditions during storage / maximum during storage / maximum during for conditions during storage / maximum d	product component ● undervoltage release ● voltage trigger ● trip indicator No height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth Tos.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit availarly circuit number of CO contacts / for auxiliary contacts Auxillary 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 / maximum ● during operation / maximum ● during storage / maxi	dependent overload release / full-scale value	
product component • undervoltage release • voltage trigger • trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit type of electrical connection / for main current circuit number of CO contacts / for auxiliary contacts 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 storage / minimum • during storage / minimum • during storage / maximum • during storage / maximum • during storage / maximum • Control	product component • undervoltage release • voltage trigger • trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.2 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit auxillary circuit number of CO contacts / for auxillary contacts Decessories product extension / optional / motor drive Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum • during storage / maximum • du	Ground fault protection / tripping switchable / I2t=ON/OFF	No
undervoltage release voltage trigger trip indicator No height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth [in] depth T6.5 mm Connections arrangement of electrical connectors / for main current circuit trype of electrical connection / for main current circuit number of CO contacts / for auxiliary contacts Auxiliary circuit number of CO contacts / for auxiliary contacts Protection class IP / on the front ambient temperature during operation / minimum during during storage / maximum during storage / maximum Von Cortificates No	undervoltage release voltage trigger trip indicator No height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth [in] 3.01 in depth [in] depth [Mechanical Design	
voltage trigger virp indicator height [in] Height	• voltage trigger • trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.2 mm Gennections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit number of CO contacts / for auxiliary contacts Auxiliary circuit number of CO contacts / for auxiliary contacts Product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum • during storage / minimum • during storage / minimum • during storage / minimum • during storage / maximum • du	product component	
• trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in]	• trip indicator height [in] Height width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width depth [in] depth 76.2 mm depth [in] depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit type of electrical connection / for main current circuit circular conductor terminal on both sides 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	 undervoltage release 	No
height [in] 5.51 in Height 140 mm width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit circuit circuit conductor terminal on both sides Auxillary circuit number of CO contacts / for auxiliary contacts 0 Accessories product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front ambient temperature	height [in] Height	 voltage trigger 	No
Height width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit circuit circuit circuit number of CO contacts / for auxiliary contacts Auxiliary circuit number of CO contacts / for auxiliary contacts Product extension / optional / motor drive Yes 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 80 °C Certificates	Height width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth [in] 3.01 in depth [in] 5.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit conductor terminal on both sides 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 ambient temperature • during operation / minimum -25 °C • during storage / minimum -40 °C • during storage / minimum -40 °C • during storage / maximum -80 °C Certificates reference code / according to IEC 81346-2 Q	trip indicator	No
Height width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit circuit circuit vibre of electrical connection / for main current circuit circuit number of CO contacts / for auxiliary contacts Auxiliary circuit number of CO contacts / for auxiliary contacts Product extension / optional / motor drive Yes 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 Certificates	Height width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit around conductor terminal on both sides 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 ambient temperature • during operation / minimum -25 °C • during storage / minimum -40 °C • during storage / minimum -40 °C • during storage / maximum -80 °C Certificates reference code / according to IEC 81346-2 Q	height [in]	5.51 in
width [in] 3 in Type of connectable conductor cross-section, round conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit round conductor terminal on both sides 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 ambient temperature	width [in] Type of connectable conductor cross-section, round conductor terminal, stranded Width Total mm depth [in] depth Total mm Type of electrical connectors / for main current circuit surrangement of electrical connection / for main current circuit circuit circuit surve of electrical connection / for main current circuit circular conductor terminal on both sides 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 / minimum during storage / minimum during storage / maximum 80 °C Certificates reference code / according to IEC 81346-2 Q		140 mm
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conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circuit circuit type of electrical connection / for auxiliary contacts 0 Accessories product extension / optional / motor drive Yes Environmental conditions protection class IP / on the front ambient temperature • during operation / maximum -25 °C • during storage / minimum -40 °C • during storage / maximum 80 °C Certificates	conductor terminal, stranded Width 76.2 mm depth [in] 3.01 in depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circular conductor terminal on both sides 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 ambient temperature		1 x (14 AWG - 8 AWG)
depth [in] 3.01 in 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circular conductor terminal on both sides 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 • during storage / minimum • during storage / maximum • during storage / maximum 80 °C Certificates	depth [in] depth 76.5 mm Connections arrangement of electrical connectors / for main current circuit type of electrical connection / for main current circuit circular conductor terminal on both sides 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 ambient temperature • during operation / minimum -25 °C • during operation / maximum 70 °C • during storage / minimum -40 °C • during storage / maximum 80 °C Certificates reference code / according to IEC 81346-2 Q	•	
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protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / maximum • during storage / maximum 80 °C Certificates	protection class IP / on the front ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / minimum • during storage / maximum 80 °C Certificates reference code / according to IEC 81346-2 Q	<u> </u>	
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during storage / maximum 80 °C Certificates	during storage / maximum 80 °C Certificates reference code / according to IEC 81346-2 Q	- ·	
Certificates	Certificates reference code / according to IEC 81346-2 Q		
	reference code / according to IEC 81346-2 Q		
reference code / according to IEO 01040-2			0
Conoral Product Approval	General Froduct Approval		w.
General Froduct Approval		General Product Approval	



Confirmation







Miscellaneous











Miscellaneous

Further information

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=3VA5120-6EC36-0AA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3VA5120-6EC36-0AA0

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

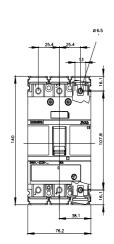
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5120-6EC36-0AA0

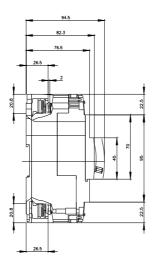
CAx-Online-Generator

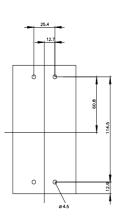
http://www.siemens.com/cax

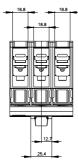
Tender specifications

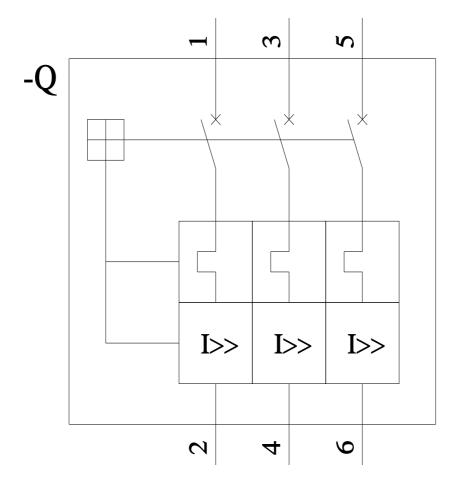
http://www.siemens.com/specifications

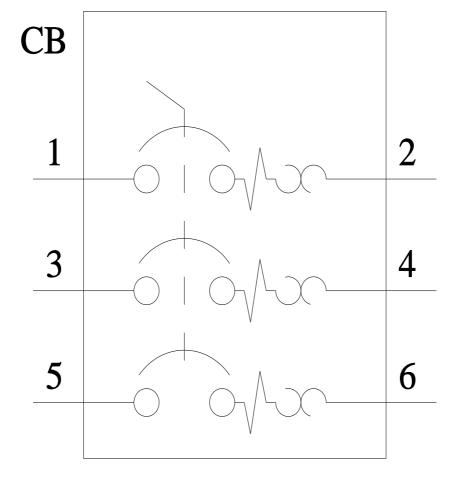












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