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Data sheet 3VA5120-4EC31-0AA0



circuit breaker 3VA5 UL frame 125 breaking capacity class S 25kA @ 480V 3-pole, line protection TM230, FTAM, In=20A overload protection Ir=20A fixed short-circuit protection Ii=7.5...15 x In without connection

Model	
product brand name	SENTRON
product designation	Molded-case circuit breaker
product designation / according to UL file	SEAS
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	0.963 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

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● at 65 °C	18 A
● at 70 °C	18 A
Switching capacity according to IEC 60947	
switching capacity class of the circuit breaker	S
breaking capacity maximum short-circuit current (Icu)	
● at 240 V	55 kA
● at 415 V	36 kA
● at 690 V	5 kA
breaking capacity operating short-circuit current (Ics)	
● at 240 V	85 kA
● at 415 V	36 kA
● at 690 V	5 kA
short-circuit current making capacity (Icm)	
● at 240 V	121 kA
● at 415 V	75.6 kA
● at 690 V	7.5 kA
design of short-circuit protection	For switching power values in DC networks, see the 3VA molded case circuit breaker device manual; link to be found under Service & Support in the last chapter
Switching capacity according to UL 489	
breaking capacity current	
● at 240 V	65 kA
● at 480 V	25 kA
● at 600 Y/347 V	14 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	s
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 (Ii) / for I-tripping	x In
set values setting current (Ii) / for I-tripping	7.5;9;10.5;12;13.5;15
adjustable response factor setting current (Ii) / for I-tripping / minimum	7.5
adjustable response factor setting current (Ii) / for I-tripping / maximum	15
adjustable response value setting current (Ii) / for I-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

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product feature / with neutral conductor protection / can be switched on/off	No
product feature / with neutral conductor protection / adjustable	Yes
type of value list setting current (InN) / for N-tripping	St
reference value setting current (InN) / for N-tripping	x In
adjustable absolute value setting current (InN) / for N-tripping / minimum	0 A
adjustable absolute value setting current (InN) / for N-tripping / maximum	0 A
tripping characteristic / of the lower tolerance band	AK_3VA5_1_20A_TM2_SuMuH_uT
tripping characteristic / of the upper tolerance band	AK_3VA5_1_20A_TM2_SuMuH_oT
let-through energy characteristic / at 240 V	DE_3VA5_1_20A_TM_line u starter_3u4p_240V
let-through energy characteristic / at 415 V	DE_3VA5_1_20A_TM_line u starter_3u4p_415V
let-through energy characteristic / at 690 V	DE_3VA5_1_20A_TM_line u starter_3u4p_690V
type of value list setting current (Ii) / for I-tripping	St
tripping characteristic / of the let-through current characteristic / at 240 V	DS_3VA5_1_20A_TM_line u starter_3u4p_240V
tripping characteristic / of the let-through current characteristic / at 415 V	DS_3VA5_1_20A_TM_line u starter_3u4p_415V
tripping characteristic / of the let-through current characteristic / at 690 V	DS_3VA5_1_20A_TM_line u starter_3u4p_690V
Adjustable response value current / Ig min.	20 A
adjustable current response value current / of the current-dependent overload release / full-scale value	20 A
Ground fault protection / tripping switchable / I2t=ON/OFF	No
Mechanical Design	
product component	
● undervoltage release	No
● voltage trigger	No
● trip indicator	No
height [in]	5.51 in
Height	140 mm
width [in]	3 in
Width	76.2 mm
depth [in]	3.01 in
depth	76.5 mm
Connections	
arrangement of electrical connectors / for main current circuit	Without connection
type of electrical connection / for main current circuit	Without
Auxiliary circuit	
number of CO contacts / for auxiliary contacts	0
Accessories	
product extension / optional / motor drive	Yes
Environmental conditions	
protection class IP / on the front	IP40
ambient temperature	
● 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

General Product Approval





Confirmation







General Product Approval	EMC	Declaration of Conformity	Test Certificates

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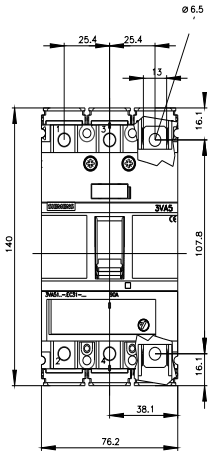
Miscellaneous

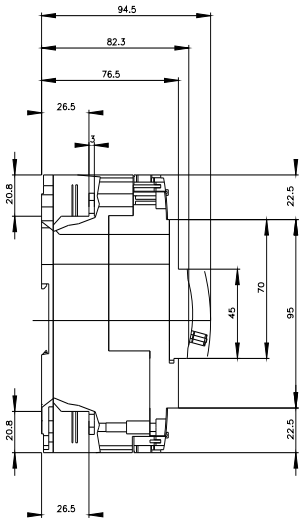
Special Test Certificate

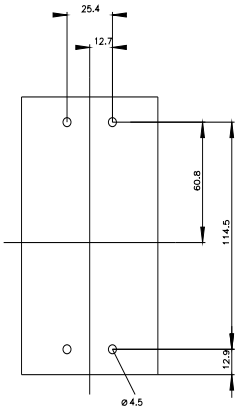
Test Certificates	Marine / Shipping		other	
Miscellaneous	ABS	RMRS	Miscellaneous	Miscellaneous

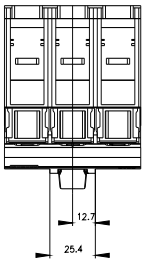
Further information

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=3VA5120-4EC31-0AA0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3VA5120-4EC31-0AA0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5120-4EC31-0AA0
CAx-Online-Generator
http://www.siemens.com/cax
Tender specifications
http://www.siemens.com/specifications

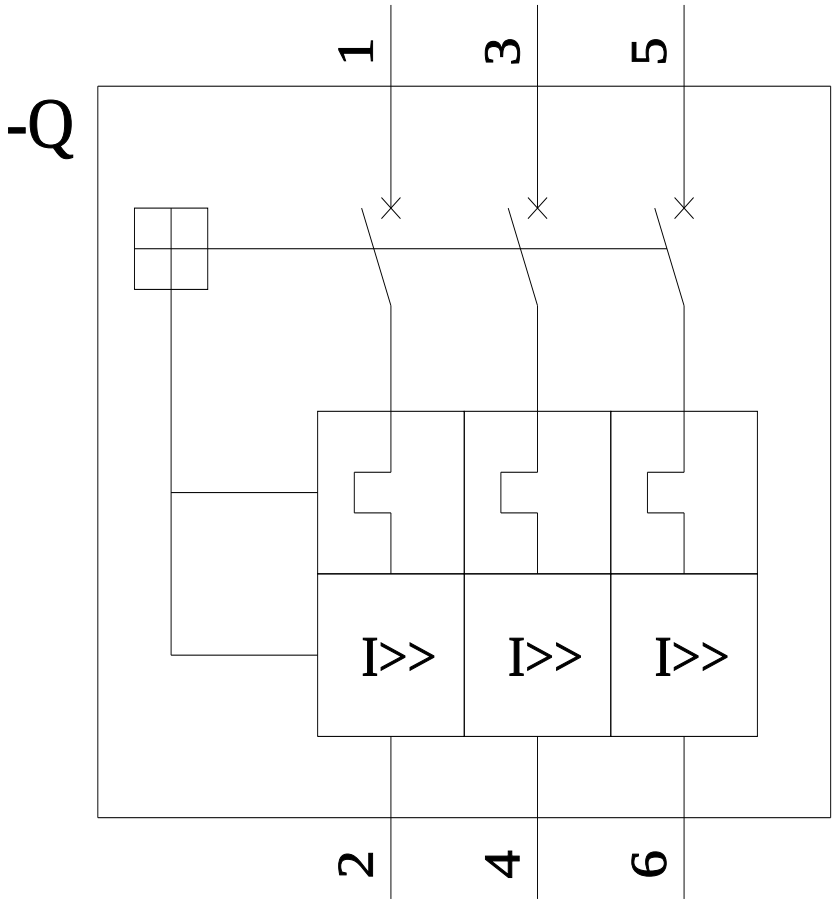


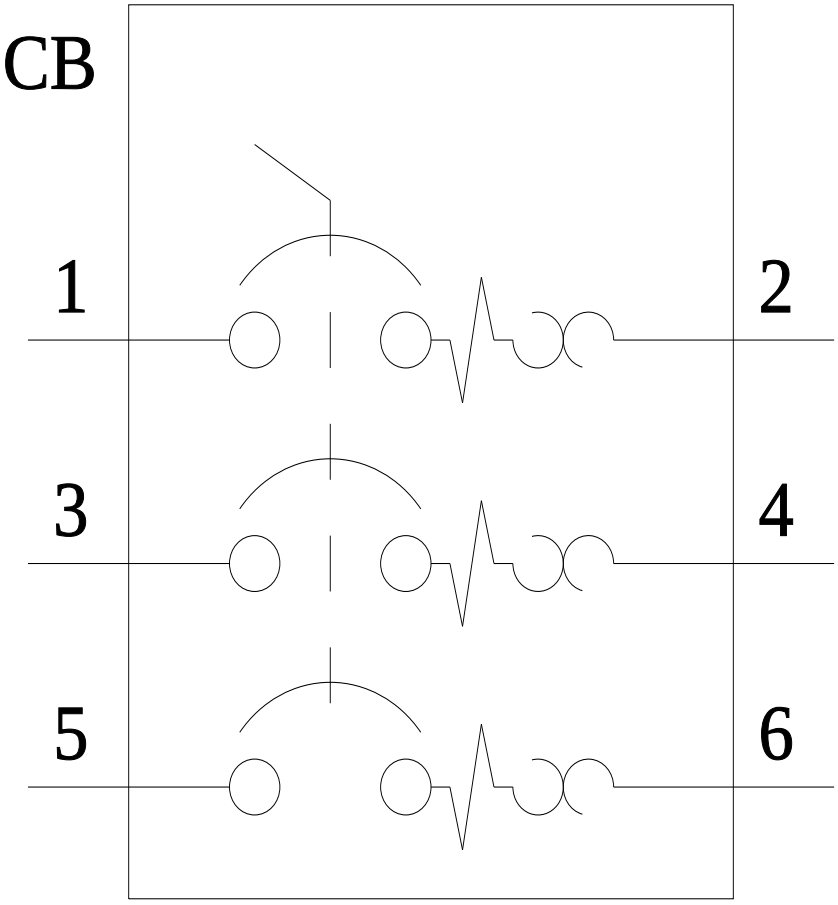






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