

circuit breaker 3VA5 UL frame 125 breaking capacity class S 25kA @ 480 V 3-pole, line protection TM230, FTAM, In=90A overload protection Ir=90A fixed short-circuit protection li=5...10 x In cable connection on both sides

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)	No
design of the load switch / according to UL 489 / Switching Duty circuit breaker (SWD Type)	No
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	21.4 W
Active power loss / for rated value of the current / at AC / in hot operating state / per pole	7.13 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/retrofitable	No
ground-fault monitoring version	without
product function	
• communication function	No
• other measurement function	No
Net Weight	1.034 kg
Current	
marking / according to UL 489 / 100%-rated breaker	No
operational 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
• at 70 °C	79 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

<ul style="list-style-type: none"> <li>• at 415 V</li> <li>• at 690 V</li> </ul>	36 kA
short-circuit current making capacity (I <sub>cm</sub> )	5 kA
<ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 415 V</li> <li>• at 690 V</li> </ul>	121 kA
design of short-circuit protection	75.6 kA
	7.5 kA
	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	
<ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 480 V</li> <li>• at 600 Y/347 V</li> </ul>	65 kA
	25 kA
	14 kA

### Adjustable parameters

product feature / for L-tripping / selectable characteristic function	No
type of value list setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	Fest
reference value setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	x I <sub>n</sub>
set values setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	1
adjustable response factor setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / minimum	1
adjustable response factor setting current (I <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / maximum	1
adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic / minimum	90 A
adjustable response value setting current (I <sub>r</sub> ) / of the L-trip / with I <sub>2t</sub> characteristic / maximum	90 A
type of value list delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	Fest
reference value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	s
set values delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic	1
adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> characteristic / minimum	1 s
adjustable response value delay time (t <sub>r</sub> ) / for L-tripping / with I <sub>2t</sub> 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 (I <sub>i</sub> ) / for I-tripping	x I <sub>n</sub>
set values setting current (I <sub>i</sub> ) / for I-tripping	5;6;7;8;9;10
adjustable response factor setting current (I <sub>i</sub> ) / for I-tripping / minimum	5
adjustable response factor setting current (I <sub>i</sub> ) / for I-tripping / maximum	10
adjustable response value setting current (I <sub>i</sub> ) / for I-tripping / minimum	450 A
adjustable response value setting current (I <sub>i</sub> ) / for I-tripping / maximum	900 A
product feature / for G-tripping / selectable characteristic function	No
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 (I <sub>nN</sub> ) / for N-tripping	St
reference value setting current (I <sub>nN</sub> ) / for N-tripping	x I <sub>n</sub>
adjustable absolute value setting current (I <sub>nN</sub> ) / for N-tripping / minimum	0 A
adjustable absolute value setting current (I <sub>nN</sub> ) / for N-tripping / maximum	0 A
tripping characteristic / of the lower tolerance band	AK_3VA5_1_90A_TM2_SuMuH_uT

tripping characteristic / of the upper tolerance band  
 let-through energy characteristic / at 240 V  
 let-through energy characteristic / at 415 V  
 let-through energy characteristic / at 690 V  
 type of value list setting current (Ii) / for I-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 / of the let-through current characteristic / at 690 V  
 Adjustable response value current / I<sub>g</sub> min.  
 adjustable current response value current / of the current-dependent overload release / full-scale value  
 Ground fault protection / tripping switchable / I<sub>2t</sub>=ON/OFF

AK\_3VA5\_1\_90A\_TM2\_SuMuH\_oT  
 DE\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_240V  
 DE\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_415V  
 DE\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_690V  
 St  
 DS\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_240V  
 DS\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_415V  
 DS\_3VA5\_1\_90A\_TM\_line u starter\_3u4p\_690V  
 90 A  
 90 A  
 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  
 Type of connectable conductor cross-section, round conductor terminal, stranded 1 x (8 AWG - 3/0)  
 Width 76.2 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 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 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](#)



[Miscellaneous](#)

### EMC Declaration of Conformity Marine / Shipping other



[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=3VA5190-4EC36-0AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3VA5190-4EC36-0AA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3VA5190-4EC36-0AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA5190-4EC36-0AA0)

**CAX-Online-Generator**

<http://www.siemens.com/cax>

**Tender specifications**

<http://www.siemens.com/specifications>

last modified:

7/15/2022 

