



circuit breaker frame size S0 for motor protection, Class 10 thermal release 9...12.5 A short-circuit release 163 A spring-loaded terminal standard switching capacity with transverse auxiliary switch 1 NO+1 NC

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Circuit breaker
<b>design of the product</b>	For motor protection
<b>product type designation</b>	3RV2
<b>General technical data</b>	
<b>size of the circuit-breaker</b>	S0
<b>size of contactor can be combined company-specific</b>	S00, S0
product extension auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	9.25 W
• at AC in hot operating state per pole	3.1 W
insulation voltage with degree of pollution 3 at AC rated value	690 V
<b>surge voltage resistance rated value</b>	6 kV
<b>shock resistance according to IEC 60068-2-27</b>	25g / 11 ms
<b>mechanical service life (operating cycles)</b>	
• of the main contacts typical	100 000
• of auxiliary contacts typical	100 000
electrical endurance (operating cycles) typical	100 000
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibition (Date)</b>	10/01/2009
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1
<b>Net Weight</b>	0.421 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-20 ... +60 °C
• during storage	-50 ... +80 °C
• during transport	-50 ... +80 °C
relative humidity during operation	10 ... 95 %
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>adjustable current response value current of the current-dependent overload release</b>	9 ... 12.5 A
<b>type of voltage for main current circuit</b>	AC
<b>operating voltage</b>	
• rated value	20 ... 690 V

<ul style="list-style-type: none"> <li>● at AC-3 rated value maximum</li> </ul>	690 V
<ul style="list-style-type: none"> <li>● at AC-3e rated value maximum</li> </ul>	690 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operational current rated value</b>	12.5 A
<b>operational current</b>	
<ul style="list-style-type: none"> <li>● at AC-3 at 400 V rated value</li> </ul>	12.5 A
<ul style="list-style-type: none"> <li>● at AC-3e at 400 V rated value</li> </ul>	12.5 A
<b>operating power</b>	
<ul style="list-style-type: none"> <li>● at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	3 kW 5.5 kW 7.5 kW 7.5 kW
<ul style="list-style-type: none"> <li>● at AC-3e <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	3 kW 5.5 kW 7.5 kW 7.5 kW
<b>operating frequency</b>	
<ul style="list-style-type: none"> <li>● at AC-3 maximum</li> </ul>	15 1/h
<ul style="list-style-type: none"> <li>● at AC-3e maximum</li> </ul>	15 1/h
<b>Auxiliary circuit</b>	
<b>design of the auxiliary switch</b>	transverse
<b>type of voltage for auxiliary and control circuit</b>	AC/DC
<b>number of NC contacts for auxiliary contacts</b>	1
<b>number of NO contacts for auxiliary contacts</b>	1
number of CO contacts for auxiliary contacts	0
<b>operational current of auxiliary contacts at AC-15</b>	
<ul style="list-style-type: none"> <li>● at 24 V</li> </ul>	2 A
<ul style="list-style-type: none"> <li>● at 120 V</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>● at 125 V</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>● at 230 V</li> </ul>	0.5 A
<b>operational current of auxiliary contacts at DC-13</b>	
<ul style="list-style-type: none"> <li>● at 24 V</li> </ul>	1 A
<ul style="list-style-type: none"> <li>● at 60 V</li> </ul>	0.15 A
<b>Protective and monitoring functions</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>● ground fault detection</li> </ul>	No
<ul style="list-style-type: none"> <li>● phase failure detection</li> </ul>	Yes
<b>trip class</b>	CLASS 10
<b>design of the overload release</b>	thermal
<b>maximum short-circuit current breaking capacity (Icu)</b>	
<ul style="list-style-type: none"> <li>● at AC at 240 V rated value</li> </ul>	100 kA
<ul style="list-style-type: none"> <li>● at AC at 400 V rated value</li> </ul>	100 kA
<ul style="list-style-type: none"> <li>● at AC at 500 V rated value</li> </ul>	42 kA
<ul style="list-style-type: none"> <li>● at AC at 690 V rated value</li> </ul>	6 kA
<b>operating short-circuit current breaking capacity (Ics) at AC</b>	
<ul style="list-style-type: none"> <li>● at 240 V rated value</li> </ul>	100 kA
<ul style="list-style-type: none"> <li>● at 400 V rated value</li> </ul>	100 kA
<ul style="list-style-type: none"> <li>● at 500 V rated value</li> </ul>	42 kA
<ul style="list-style-type: none"> <li>● at 690 V rated value</li> </ul>	4 kA
response value current of instantaneous short-circuit trip unit	163 A
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
<ul style="list-style-type: none"> <li>● at 480 V rated value</li> </ul>	12.5 A
<ul style="list-style-type: none"> <li>● at 600 V rated value</li> </ul>	12.5 A
<b>yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>● for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> </ul> </li> </ul>	0.5 hp

— at 230 V rated value	2 hp
● for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	8 hp
— at 575/600 V rated value	10 hp
<b>contact rating of auxiliary contacts according to UL</b>	C300 / R300
<b>UL File Number (CCN)</b>	E47705 (NLRV, NLRV7), E156943 (NKJH, NKJH7)
<b>Short-circuit protection</b>	
<b>product function short circuit protection</b>	Yes
<b>design of the short-circuit trip</b>	magnetic
<b>design of the fuse link</b>	
● for short-circuit protection of the auxiliary switch required	Fuse gL/gG: 10 A, miniature circuit breaker C 6 A (short-circuit current $I_k < 400$ A)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
<b>height</b>	119 mm
<b>width</b>	45 mm
<b>depth</b>	97 mm
<b>required spacing</b>	
● with side-by-side mounting at the side	0 mm
● for grounded parts at 400 V	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
● for live parts at 400 V	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
● for grounded parts at 500 V	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
● for live parts at 500 V	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
● for grounded parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
● for live parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
● for main current circuit	spring-loaded terminals
● for auxiliary and control circuit	spring-loaded terminals
<b>arrangement of electrical connectors for main current circuit</b>	Top and bottom
<b>type of connectable conductor cross-sections</b>	
● for main contacts	
— solid or stranded	2x (1 ... 10 mm <sup>2</sup> )

— finely stranded with core end processing	2x (1 ... 6 mm <sup>2</sup> )
— finely stranded without core end processing	2x (1 ... 6 mm <sup>2</sup> )
• for AWG cables for main contacts	2x (18 ... 8)
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
• for AWG cables for auxiliary contacts	2x (20 ... 14)
<b>design of screwdriver shaft</b>	Diameter 3 mm
<b>size of the screwdriver tip</b>	3,0 x 0,5 mm

### Safety related data

product function suitable for safety function	Yes
<b>suitability for use</b>	
• safety-related switching on	No
• safety-related switching OFF	Yes
<b>service life maximum</b>	10 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	50 %
<b>B10 value with high demand rate according to SN 31920</b>	5 000
<b>failure rate [FIT] with low demand rate according to SN 31920</b>	50 FIT

### ISO 13849

<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes

### IEC 61508

<b>safety device type according to IEC 61508-2</b>	Type A
<b>T1 value</b>	
• for proof test interval or service life according to IEC 61508	10 a

### Electrical Safety

<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

### Display

display version for switching status	Handle
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### Approvals Certificates

Environmental Product Declaration	
• global warming potential [CO2 eq] / during manufacturing	2.68 kg
• global warming potential [CO2 eq] / during sales	0.143 kg
• global warming potential [CO2 eq] / during operation	72.7 kg
• global warming potential [CO2 eq] / after end of life	-0.445 kg
• global warming potential [CO2 eq] / total	75.078 kg

### Environment General Product Approval

[Environmental Conformations](#)



### General Product Approval For use in hazardous locations Maritime application



### Maritime application other



other

[Confirmation](#)

[Miscellaneous](#)

### Further information

#### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

#### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

#### Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

#### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RV2021-1KA25>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1KA25>

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

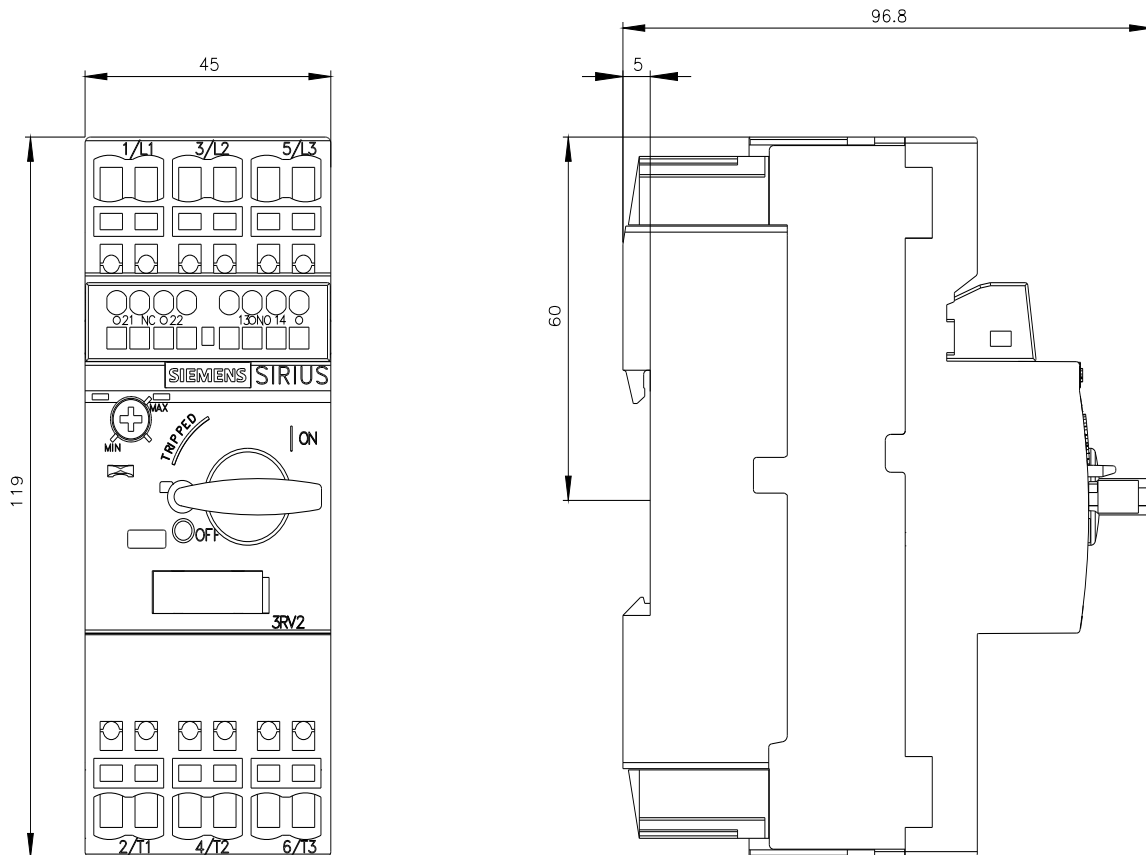
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2021-1KA25&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-1KA25&lang=en)

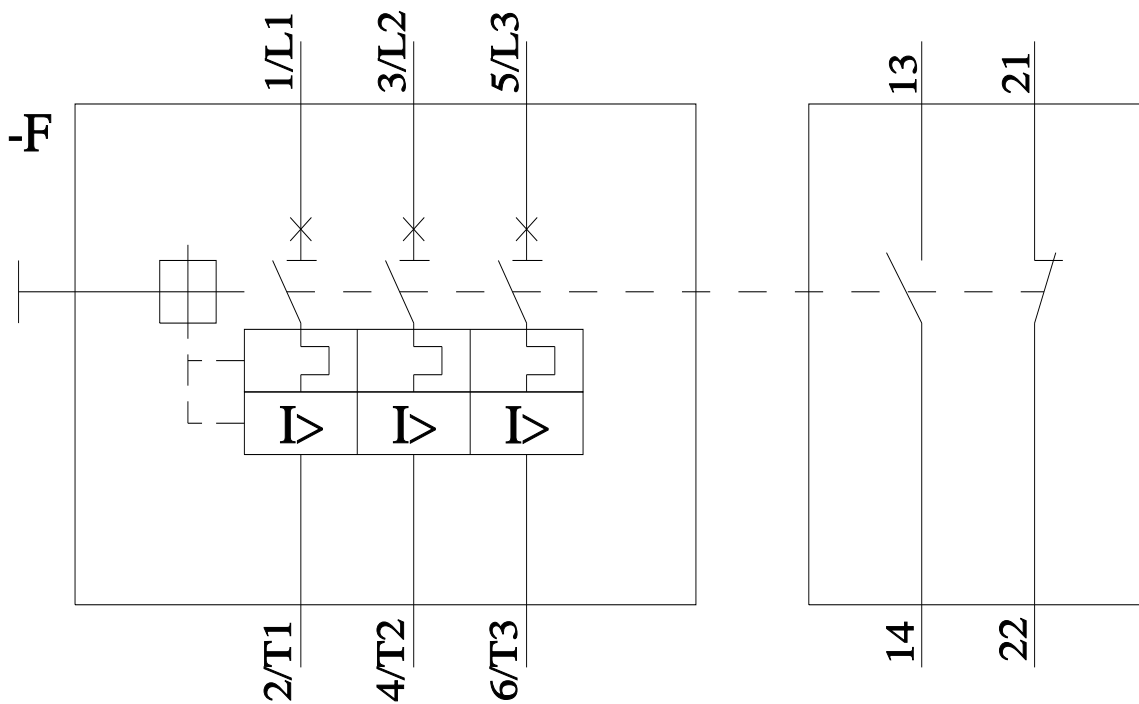
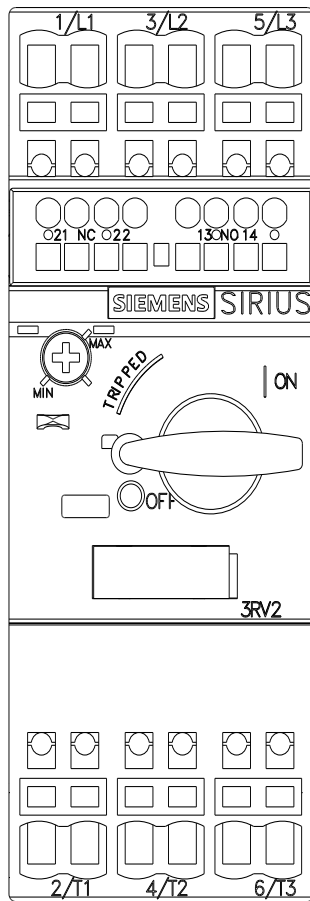
#### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-1KA25>

#### Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)





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