



circuit breaker frame size S0 for motor protection, Class 10 thermal overload release 9...12.5 A short-circuit release 163 A spring-loaded terminal switching capacity 30 kA at 600 V according to UL/CSA

<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>Product equipment of circuit breaker for motor protection complete unit with protection device</b>	Yes
<b>size of the circuit-breaker</b>	S0
<b>size of contactor can be combined company-specific</b>	S00, S0
product function disconnecter functionality	Yes
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
<b>type of calculation of power loss current-dependent</b>	quadratic
insulation voltage with degree of pollution 3 at AC rated value	690 V
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for protective separation</b>	
• in networks with ungrounded star point between main and auxiliary circuit	400 V
• in networks with grounded star point between main and auxiliary circuit	400 V
<b>protection class IP</b>	
• on the front according to IEC 60529	IP20
• on the front	IP20
• of the terminal	IP20
<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>continuous current rated value</b>	12.5 A
<b>Substance Prohibitance (day/month/year)</b>	10/01/2009
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1
<b>Net Weight</b>	0.409 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
<b>temperature compensation</b>	-20 ... +60 °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	690 V
• rated value	20 ... 690 V
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operational current rated value</b>	12.5 A
<b>operational current</b>	
• at AC-3 at 400 V rated value	12.5 A
• at AC-3e at 400 V rated value	12.5 A
<b>operating power</b>	
• at AC-3	
— at 690 V rated value	7.5 kW
• at AC-3e	
— at 690 V rated value	7.5 kW
<b>operating frequency</b>	
• at AC-3 maximum	15 1/h
• at AC-3e maximum	15 1/h
<b>Auxiliary circuit</b>	
<b>type of voltage for auxiliary and control circuit</b>	AC/DC
<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
number of CO contacts for auxiliary contacts	0
<b>Protective and monitoring functions</b>	
<b>product function</b>	
• ground fault detection	No
• phase failure detection	Yes
<b>trip class</b>	CLASS 10
<b>design of the overload release</b>	thermal
<b>protection function thermal overload protection (ANSI 49)</b>	Yes
<b>maximum short-circuit current breaking capacity (Icu)</b>	
• at AC at 690 V rated value	6 kA
<b>operating short-circuit current breaking capacity (Ics) at AC</b>	
• at 690 V rated value	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>	
• at 480 V rated value	12.5 A
• at 600 V rated value	12.5 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	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>UL File Number (CCN)</b>	E47705 (NLRV, NLRV7)
<b>Short-circuit protection</b>	
<b>product function short circuit protection</b>	Yes
<b>design of the short-circuit trip</b>	magnetic
<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>Mounting method of circuit breaker for Transformer protection, Generator protection and system protection optional standard bar mounting</b>	Yes
<b>height</b>	119 mm
<b>width</b>	45 mm
<b>depth</b>	97 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>● with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>● for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>● for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>● for grounded parts at 690 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> <li>● for live parts at 690 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>0 mm</li> <li>0 mm</li> <li>50 mm</li> <li>50 mm</li> <li>0 mm</li> <li>0 mm</li> <li>0 mm</li> <li>50 mm</li> <li>30 mm</li> <li>50 mm</li> <li>0 mm</li> <li>0 mm</li> <li>50 mm</li> <li>50 mm</li> <li>0 mm</li> <li>30 mm</li> <li>0 mm</li> <li>50 mm</li> <li>50 mm</li> <li>0 mm</li> <li>30 mm</li> <li>0 mm</li> </ul>
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	No
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>● for main current circuit</li> </ul>	spring-loaded terminals
<b>arrangement of electrical connectors for main current circuit</b>	Top and bottom
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>● for main contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>● for AWG cables for main contacts</li> </ul>	<ul style="list-style-type: none"> <li>2x (1 ... 10 mm<sup>2</sup>)</li> <li>2x (1 ... 6 mm<sup>2</sup>)</li> <li>2x (1 ... 6 mm<sup>2</sup>)</li> <li>2x (18 ... 8)</li> </ul>
<b>connectable conductor cross-section for main contacts</b>	
<ul style="list-style-type: none"> <li>● solid or stranded</li> </ul>	1 ... 10 mm <sup>2</sup>

• finely stranded with core end processing	1 ... 6 mm <sup>2</sup>
• finely stranded without core end processing	1 ... 6 mm <sup>2</sup>
<b>AWG number as coded connectable conductor cross section for main contacts</b>	18 ... 8
<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**

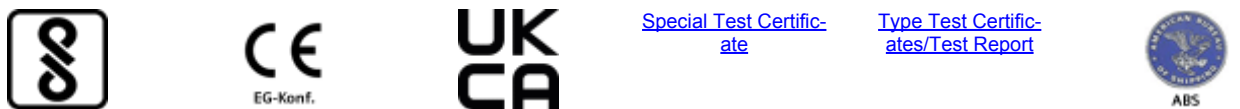
<b>Environmental Product Declaration</b>	
• global warming potential [CO2 eq] / during manufacturing	2.68 kg
• global warming potential [CO2 eq] / during sales	0.143 kg
• global warming potential [CO2 eq] / during operation	72.7 kg
• global warming potential [CO2 eq] / after end of life	-0.445 kg
• global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

**Environment** **General Product Approval**

[Environmental Confirmations](#)



**General Product Approval** **Test Certificates** **Maritime application**



**Maritime application** **other**



[Confirmation](#)

[Miscellaneous](#)



[Confirmation](#)

[Special Test Certificate](#)

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=3RV2023-1KA20>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2023-1KA20>

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

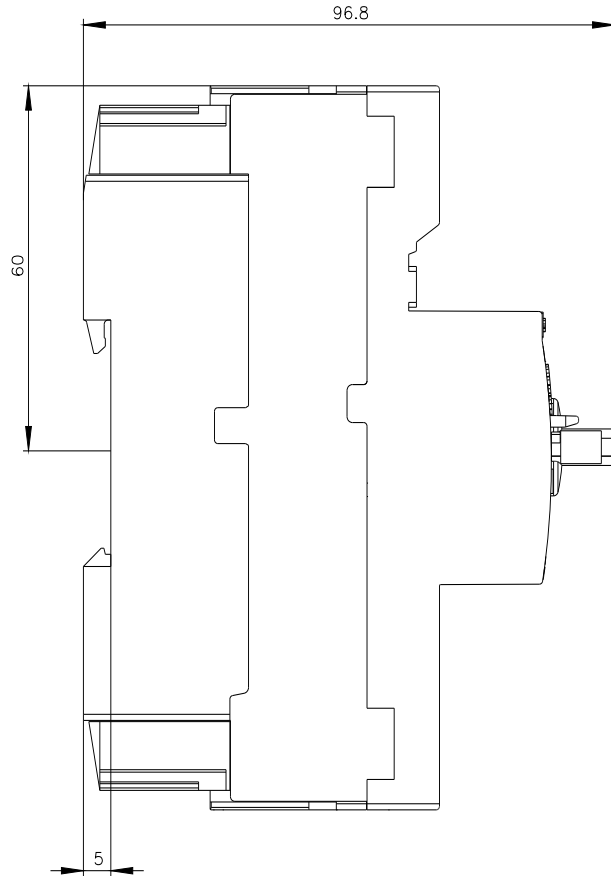
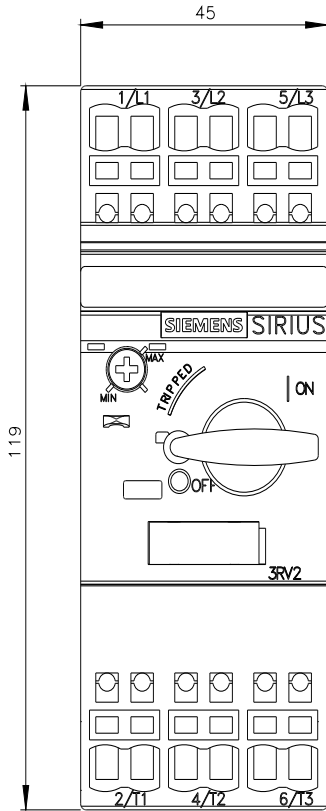
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2023-1KA20&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2023-1KA20&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2023-1KA20>

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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