



Circuit breaker size S0 For transformer protection A-release 1.1...1.6 A Short-circuit release 33 A Screw terminal Standard switching capacity

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Circuit breaker
<b>design of the product</b>	For transformer 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	5.5 W
• at AC in hot operating state per pole	1.8 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>	1.6 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>	350 g
<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>	1.1 ... 1.6 A
<b>type of voltage for main current circuit</b>	AC

<b>operating voltage</b>	
<ul style="list-style-type: none"> <li>● rated value</li> <li>● rated value</li> <li>● at AC-3 rated value maximum</li> <li>● at AC-3e rated value maximum</li> </ul>	<p>690 V</p> <p>20 ... 690 V</p> <p>690 V</p> <p>690 V</p>
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operational current rated value</b>	1.6 A
<b>operational current</b>	
<ul style="list-style-type: none"> <li>● at AC-3 at 400 V rated value</li> <li>● at AC-3e at 400 V rated value</li> </ul>	<p>1.6 A</p> <p>1.6 A</p>
<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> <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>	<p>0.3 kW</p> <p>0.6 kW</p> <p>0.8 kW</p> <p>1.1 kW</p> <p>0.3 kW</p> <p>0.6 kW</p> <p>0.8 kW</p> <p>1.1 kW</p>
<b>operating frequency</b>	
<ul style="list-style-type: none"> <li>● at AC-3 maximum</li> <li>● at AC-3e maximum</li> </ul>	<p>15 1/h</p> <p>15 1/h</p>
<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
<b>number of CO contacts for auxiliary contacts</b>	0
<b>Protective and monitoring functions</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>● ground fault detection</li> <li>● phase failure detection</li> </ul>	<p>No</p> <p>Yes</p>
<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>	
<ul style="list-style-type: none"> <li>● at AC at 240 V rated value</li> <li>● at AC at 400 V rated value</li> <li>● at AC at 500 V rated value</li> <li>● at AC at 690 V rated value</li> </ul>	<p>100 kA</p> <p>100 kA</p> <p>100 kA</p> <p>100 kA</p>
<b>operating short-circuit current breaking capacity (Ics) at AC</b>	
<ul style="list-style-type: none"> <li>● at 240 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>	<p>100 kA</p> <p>100 kA</p> <p>100 kA</p> <p>100 kA</p>
<b>response value current of instantaneous short-circuit trip unit</b>	33 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> <li>● at 600 V rated value</li> </ul>	<p>1.6 A</p> <p>1.6 A</p>
<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 230 V rated value</li> </ul> </li> <li>● for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>	<p>0.1 hp</p> <p>1 hp</p> <p>0.8 hp</p>
<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>design of the fuse link for IT network for short-circuit protection of the main circuit</b>	
<ul style="list-style-type: none"> <li>• at 500 V</li> <li>• at 690 V</li> </ul>	<ul style="list-style-type: none"> <li>gL/gG 20 A</li> <li>gL/gG 16 A</li> </ul>
<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>	97 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 400 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 400 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 500 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 500 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</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> </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>30 mm</li> <li>30 mm</li> <li>9 mm</li> <li>30 mm</li> <li>30 mm</li> <li>9 mm</li> <li>30 mm</li> <li>30 mm</li> <li>9 mm</li> <li>30 mm</li> <li>30 mm</li> <li>9 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> </ul>

— at the side	30 mm
— forwards	0 mm
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	No
<b>type of electrical connection</b>	
• for main current circuit	screw-type 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 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> )
— finely stranded with core end processing	2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
• for AWG cables for main contacts	2x (16 ... 12), 2x (14 ... 8)
<b>connectable conductor cross-section for main contacts</b>	
• solid or stranded	1 ... 10 mm <sup>2</sup>
• finely stranded with core end processing	1 ... 10 mm <sup>2</sup>
<b>AWG number as coded connectable conductor cross section for main contacts</b>	18 ... 12
<b>tightening torque</b>	
• for main contacts with screw-type terminals	2 ... 2.5 N·m
<b>design of screwdriver shaft</b>	Diameter 5 to 6 mm
<b>size of the screwdriver tip</b>	Pozidriv size 2
<b>design of the thread of the connection screw</b>	
• for main contacts	M4
<b>Safety related data</b>	
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
<b>ISO 13849</b>	
<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
<b>IEC 61508</b>	
<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
<b>Electrical Safety</b>	
<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
<b>Display</b>	
display version for switching status	Handle
<b>Approvals Certificates</b>	
<b>Environmental Product Declaration</b>	
• global warming potential [CO <sub>2</sub> eq] / during manufacturing	2.68 kg
• global warming potential [CO <sub>2</sub> eq] / during sales	0.143 kg
• global warming potential [CO <sub>2</sub> eq] / during operation	72.7 kg
• global warming potential [CO <sub>2</sub> eq] / after end of life	-0.445 kg
• global warming potential [CO <sub>2</sub> eq] / total	75.078 kg
<b>Environment</b>	<b>General Product Approval</b>

[Environmental Confirmations](#)



General Product Approval

Test Certificates



EG-Konf.



[Special Test Certificate](#)

Test Certificates

Maritime application

[Type Test Certificates/Test Report](#)



LRS



PRS

Maritime application

other



RINA

[Confirmation](#)

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产品合格  
QC PASS

Railway

[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=3RV2421-1AA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2421-1AA10>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2421-1AA10&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2421-1AA10&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2421-1AA10>

Characteristic curves

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

last modified:

5/5/2026