

Siemens  
EcoTech



Circuit breaker size S2 for motor protection, Class 20 A-release 42...52 A N-release 741 A screw terminal Standard switching capacity with transverse auxiliary switches 1 NO+1 NC



product brand name	SIRIUS
product designation	Circuit breaker
design of the product	For motor protection
product type designation	3RV2
<b>General technical data</b>	
size of the circuit-breaker	S2
size of contactor can be combined company-specific	S2
product extension auxiliary switch	Yes
power loss [W] for rated value of the current	
• at AC in hot operating state	24.5 W
• at AC in hot operating state per pole	8.2 W
insulation voltage with degree of pollution 3 at AC rated value	690 V
surge voltage resistance rated value	6 kV
shock resistance according to IEC 60068-2-27	25g / 11 ms Sinus
mechanical service life (operating cycles)	
• of the main contacts typical	50 000
• of auxiliary contacts typical	50 000
electrical endurance (operating cycles) typical	50 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/15/2014
SVHC substance name	Lead - 7439-92-1 Lead titanium zirconium oxide - 12626-81-2
Weight	1.22 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-20 ... +60 °C
• during storage	-50 ... +80 °C
• during transport	-50 ... +80 °C
relative humidity during operation	10 ... 95 %
<b>Environmental footprint</b>	
Environmental Product Declaration (EPD)	Yes
global warming potential [CO2 eq] total	239.877 kg
global warming potential [CO2 eq] during manufacturing	12.8 kg
global warming potential [CO2 eq] during sales	0.477 kg
global warming potential [CO2 eq] during operation	230 kg
global warming potential [CO2 eq] after end of life	-3.4 kg

Siemens Eco Profile (SEP)	Siemens EcoTech
<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>	42 ... 52 A
<b>type of voltage for main current circuit</b>	AC
<b>operating voltage</b>	
• 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>	52 A
<b>operational current</b>	
• at AC-3 at 400 V rated value	52 A
• at AC-3e at 400 V rated value	52 A
<b>operating power</b>	
• at AC-3	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	45 kW
• at AC-3e	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	45 kW
<b>operating frequency</b>	
• at AC-3 maximum	15 1/h
• at AC-3e maximum	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>	
• at 24 V	2 A
• at 230 V	0.5 A
<b>operational current of auxiliary contacts at DC-13</b>	
• at 24 V	1 A
• at 60 V	0.15 A
• at 110 V	0 A
• at 125 V	0 A
• at 220 V	0 A
<b>Protective and monitoring functions</b>	
<b>product function</b>	
• ground fault detection	No
• phase failure detection	Yes
<b>trip class</b>	CLASS 20
<b>design of the overload release</b>	thermal
<b>maximum short-circuit current breaking capacity (I<sub>cu</sub>)</b>	
• at AC at 240 V rated value	100 kA
• at AC at 400 V rated value	65 kA
• at AC at 500 V rated value	8 kA
• at AC at 690 V rated value	4 kA
<b>operating short-circuit current breaking capacity (I<sub>cs</sub>) at AC</b>	
• at 240 V rated value	100 kA
• at 400 V rated value	30 kA
• at 500 V rated value	4 kA
• at 690 V rated value	2 kA
response value current of instantaneous short-circuit trip unit	741 A

**UL/CSA ratings**

<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	52 A
• at 600 V rated value	52 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	5 hp
— at 230 V rated value	10 hp
• for 3-phase AC motor	
— at 200/208 V rated value	15 hp
— at 220/230 V rated value	20 hp
— at 460/480 V rated value	40 hp
— at 575/600 V rated value	50 hp
<b>contact rating of auxiliary contacts according to UL</b>	C300 / R300

**Short-circuit protection**

<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 gG: 10 A, miniature circuit breaker C 6 A (short-circuit current $I_k < 400$ A)
<b>design of the fuse link for IT network for short-circuit protection of the main circuit</b>	
• at 240 V	none required
• at 400 V	160
• at 500 V	125
• at 690 V	100

**Installation/ mounting/ dimensions**

<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>	140 mm
<b>width</b>	55 mm
<b>depth</b>	149 mm
<b>required spacing</b>	
• with side-by-side mounting at the side	0 mm
• for grounded parts at 400 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm
• for live parts at 400 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm
• for grounded parts at 500 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm
• for live parts at 500 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm
• for grounded parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm
• for live parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— at the side	10 mm

**Connections/ Terminals**

<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control 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>	
<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> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>	2x (1 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> ) 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> ) 2x (18 ... 2), 1x (18 ... 1)
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 16), 2x (18 ... 14)
<b>tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary contacts with screw-type terminals</li> </ul>	3 ... 4.5 N·m 0.8 ... 1.2 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>	
<ul style="list-style-type: none"> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> </ul>	M6 M3

#### Safety related data

product function suitable for safety function	Yes
<b>suitability for use</b>	
<ul style="list-style-type: none"> <li>• safety-related switching on</li> <li>• safety-related switching OFF</li> </ul>	No Yes
<b>service life maximum</b>	10 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
<ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>	40 % 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>	
<ul style="list-style-type: none"> <li>• for proof test interval or service life according to IEC 61508</li> </ul>	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

##### General Product Approval



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General Product Approval	Test Certificates	Maritime application
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application		other		
 LRS	 PRS	 RINA	<a href="#">Miscellaneous</a>	 Confirmation
other	Railway	Environment		
 VDE	<a href="#">Special Test Certificate</a>	<a href="#">Confirmation</a>	 EPD	 Siemens EcoTech <a href="#">Environmental Confirmations</a>

#### 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=3RV2031-4WB15>

##### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4WB15>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4WB15>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4WB15&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4WB15&lang=en)

##### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4WB15/char>

##### Further characteristics (e.g. electrical endurance, switching frequency)

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4WB15&objecttype=14&gridview=view1>





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