



Circuit breaker size S2 for motor protection, CLASS 10 A-release 35...45 A
N-release 650 A screw terminal Standard switching capacity

product brand name	SIRIUS
product designation	Circuit breaker
design of the product	For motor protection
product type designation	3RV2
General technical data	
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
maximum permissible voltage for safe isolation in networks with grounded star point	
• between main and auxiliary circuit	400 V
• between main and auxiliary circuit	400 V
shock resistance acc. to IEC 60068-2-27	25g / 11 ms Sinus
mechanical service life (switching cycles)	
• of the main contacts typical	50 000
• of auxiliary contacts typical	50 000
electrical endurance (switching cycles) typical	50 000
type of protection according to ATEX directive 2014/34/EU	Ex II (2) GD
certificate of suitability according to ATEX directive 2014/34/EU	DMT 02 ATEX F 001
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	15.10.2014
Ambient conditions	
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
temperature compensation	-20 ... +60 °C
relative humidity during operation	10 ... 95 %
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the	35 ... 45 A

current-dependent overload release	
operating voltage	
<ul style="list-style-type: none"> • rated value • rated value • at AC-3 rated value maximum 	<p>690 V</p> <p>20 ... 690 V</p> <p>690 V</p>
operating frequency rated value	50 ... 60 Hz
operational current rated value	45 A
operational current at AC-3 at 400 V rated value	45 A
operating power at AC-3	
<ul style="list-style-type: none"> • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value 	<p>11 kW</p> <p>22 kW</p> <p>30 kW</p> <p>37 kW</p>
operating frequency at AC-3 maximum	15 1/h
Protective and monitoring functions	
product function	
<ul style="list-style-type: none"> • ground fault detection • phase failure detection 	<p>No</p> <p>Yes</p>
trip class	CLASS 10
design of the overload release	thermal
breaking capacity operating short-circuit current (Ics) at AC	
<ul style="list-style-type: none"> • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value 	<p>100 kA</p> <p>30 kA</p> <p>5 kA</p> <p>2 kA</p>
breaking capacity maximum short-circuit current (Icu)	
<ul style="list-style-type: none"> • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 500 V rated value • at AC at 690 V rated value 	<p>100 kA</p> <p>65 kA</p> <p>10 kA</p> <p>4 kA</p>
response value current of instantaneous short-circuit trip unit	650 A
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
<ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	<p>45 A</p> <p>45 A</p>
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	<p>3 hp</p> <p>10 hp</p> <p>15 hp</p> <p>15 hp</p> <p>40 hp</p> <p>50 hp</p>
Short-circuit protection	
product function short circuit protection	Yes
design of the short-circuit trip	magnetic
design of the fuse link for IT network for short-circuit protection of the main circuit	
<ul style="list-style-type: none"> • at 240 V • at 400 V • at 500 V • at 690 V 	<p>none required</p> <p>125</p> <p>100</p> <p>80</p>
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
height	140 mm

width	55 mm
depth	149 mm
required spacing	
<ul style="list-style-type: none"> ● for grounded parts at 400 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 400 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for grounded parts at 500 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 500 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for grounded parts at 690 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm ● for live parts at 690 V <ul style="list-style-type: none"> — downwards 50 mm — upwards 50 mm — at the side 10 mm 	
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	No
type of electrical connection	
<ul style="list-style-type: none"> ● for main current circuit 	screw-type terminals
arrangement of electrical connectors for main current circuit	Top and bottom
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — solid or stranded 2x (1 ... 25 mm²), 1x (1 ... 35 mm²) — finely stranded with core end processing 2x (1 ... 16 mm²), 1x (1 ... 25 mm²) ● at AWG cables for main contacts 2x (18 ... 3), 1x (18 ... 2) 	
tightening torque	
<ul style="list-style-type: none"> ● for main contacts with screw-type terminals 	3 ... 4.5 N·m
design of screwdriver shaft	Diameter 5 to 6 mm
size of the screwdriver tip	Pozidriv 2
design of the thread of the connection screw	
<ul style="list-style-type: none"> ● for main contacts 	M6
Safety related data	
B10 value	
<ul style="list-style-type: none"> ● with high demand rate acc. to SN 31920 	5 000
proportion of dangerous failures	
<ul style="list-style-type: none"> ● with low demand rate acc. to SN 31920 ● with high demand rate acc. to SN 31920 	50 % 50 %
failure rate [FIT]	
<ul style="list-style-type: none"> ● with low demand rate acc. to SN 31920 	50 FIT
T1 value for proof test interval or service life acc. to IEC 61508	10 y
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
display version for switching status	Handle
Certificates/ approvals	
General Product Approval	



[Confirmation](#)



[KC](#)



For use in hazardous locations

Declaration of Conformity

Test Certificates



[UK Declaration of Conformity](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Marine / Shipping



Marine / Shipping

other

Railway



[Confirmation](#)



[Confirmation](#)

[Vibration and Shock](#)

Further information

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=3RV2031-4VA10>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4VA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4VA10>

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

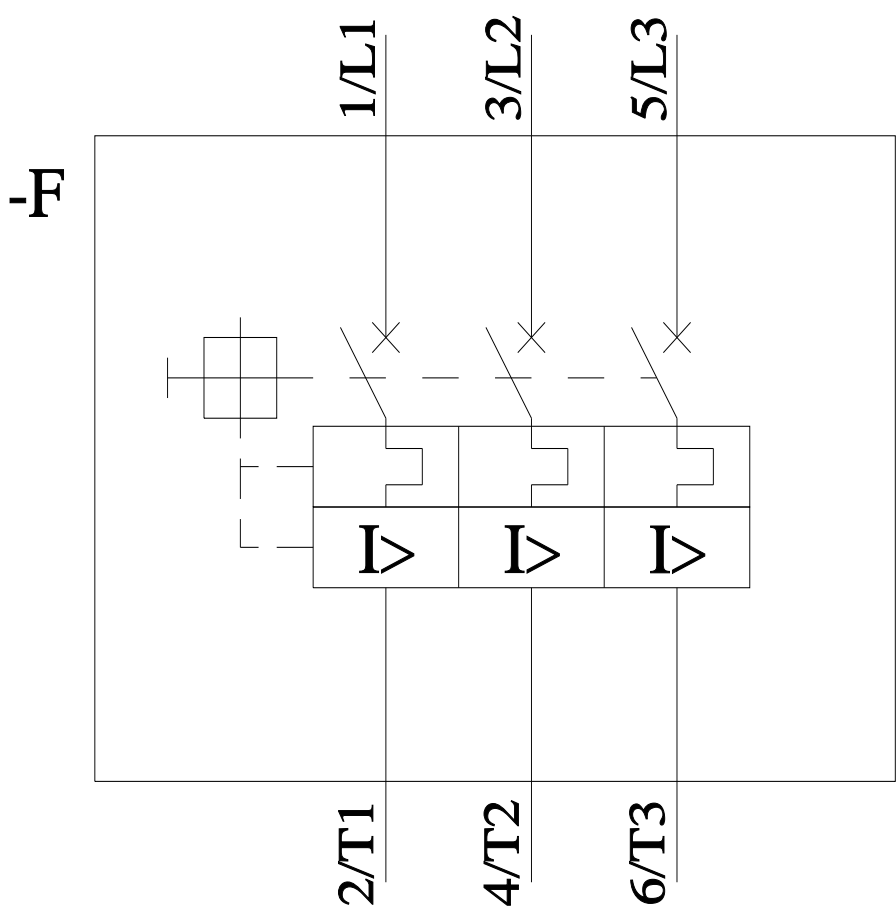
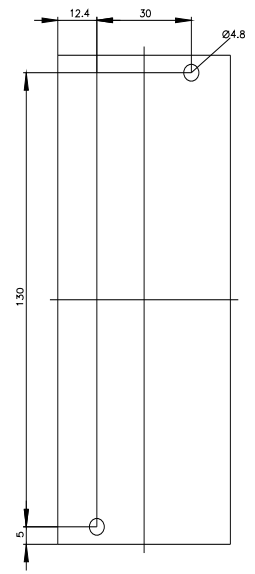
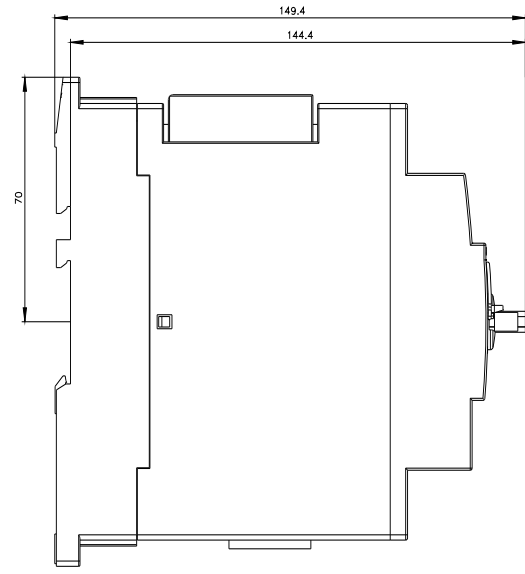
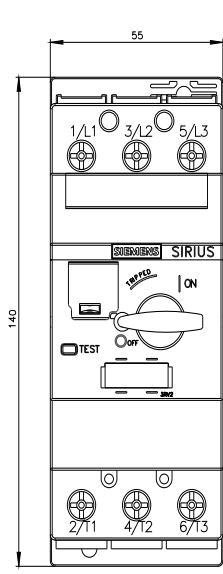
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4VA10&lang=en

Characteristic: Tripping characteristics, I^t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4VA10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4VA10&objecttype=14&gridview=view1>



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12/8/2021

