

Siemens
EcoTech



Circuit breaker size S2 for transformer protection A-release 14...20 A N-release 400 A screw terminal Standard switching capacity



product brand name	SIRIUS
product designation	Circuit breaker
design of the product	For transformer 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	14.5 W
• at AC in hot operating state per pole	4.8 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
Weight	1.063 kg
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
relative humidity during operation	10 ... 95 %
Environmental footprint	
Environmental Product Declaration (EPD)	Yes
global warming potential [CO ₂ eq] total	239.877 kg
global warming potential [CO ₂ eq] during manufacturing	12.8 kg
global warming potential [CO ₂ eq] during sales	0.477 kg
global warming potential [CO ₂ eq] during operation	230 kg
global warming potential [CO ₂ eq] after end of life	-3.4 kg
Siemens Eco Profile (SEP)	Siemens EcoTech

Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	14 ... 20 A
type of voltage for main current circuit	AC
operating voltage <ul style="list-style-type: none"> • rated value • at AC-3 rated value maximum • at AC-3e rated value maximum 	20 ... 690 V 690 V 690 V
operating frequency rated value	50 ... 60 Hz
operational current rated value	20 A
operational current <ul style="list-style-type: none"> • at AC-3 at 400 V rated value • at AC-3e at 400 V rated value 	20 A 20 A
operating power <ul style="list-style-type: none"> • 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 • at AC-3e <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 	5.5 kW 7.5 kW 11 kW 15 kW 5.5 kW 7.5 kW 11 kW 15 kW
operating frequency <ul style="list-style-type: none"> • at AC-3 maximum • at AC-3e maximum 	15 1/h 15 1/h
Auxiliary circuit	
type of voltage for auxiliary and control circuit	AC/DC
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
Protective and monitoring functions	
product function <ul style="list-style-type: none"> • ground fault detection • phase failure detection 	No Yes
trip class	CLASS 10
design of the overload release	thermal
maximum short-circuit current breaking capacity (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 	100 kA 65 kA 12 kA 5 kA
operating short-circuit current breaking capacity (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 	100 kA 30 kA 6 kA 3 kA
response value current of instantaneous short-circuit trip unit	410 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 	20 A 20 A
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 	1.5 hp 3 hp 7.5 hp 7.5 hp

— at 460/480 V rated value	15 hp
— at 575/600 V rated value	20 hp

Short-circuit protection

product function short circuit protection	Yes
design of the short-circuit trip	magnetic

Installation/ mounting/ dimensions

mounting position	any
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	140 mm
width	55 mm
depth	149 mm
required spacing	
<ul style="list-style-type: none"> ● with side-by-side mounting at the side ● for grounded parts at 400 V <ul style="list-style-type: none"> — downwards — upwards — at the side ● for live parts at 400 V <ul style="list-style-type: none"> — downwards — upwards — at the side ● for grounded parts at 500 V <ul style="list-style-type: none"> — downwards — upwards — at the side ● for live parts at 500 V <ul style="list-style-type: none"> — downwards — upwards — at the side ● for grounded parts at 690 V <ul style="list-style-type: none"> — downwards — upwards — backwards — at the side — forwards ● for live parts at 690 V <ul style="list-style-type: none"> — downwards — upwards — backwards — at the side — forwards 	<ul style="list-style-type: none"> 0 mm 50 mm 50 mm 10 mm 50 mm 50 mm 0 mm 10 mm 0 mm 50 mm 50 mm 0 mm 10 mm 0 mm

Connections/ Terminals

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 — finely stranded with core end processing ● for AWG cables for main contacts 	<ul style="list-style-type: none"> 2x (1 ... 25 mm²), 1x (1 ... 35 mm²) 2x (1 ... 16 mm²), 1x (1 ... 25 mm²) 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 size 2
design of the thread of the connection screw	
<ul style="list-style-type: none"> ● for main contacts 	M6

Safety related data

product function suitable for safety function	Yes
suitability for use	
<ul style="list-style-type: none"> ● safety-related switching on 	No

• safety-related switching OFF	Yes
service life maximum	10 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	50 %
B10 value with high demand rate according to SN 31920	5 000
failure rate [FIT] with low demand rate according to SN 31920	50 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
T1 value	
• for proof test interval or service life according to IEC 61508	10 a
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Display	
display version for switching status	Handle
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
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[Miscellaneous](#)



[Confirmation](#)

other	Railway	Environment
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[Confirmation](#)

[Special Test Certificate](#)



[Environmental Confirmations](#)

Further information

Information on the packaging

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

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=3RV2431-4BA10>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2431-4BA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4BA10>

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

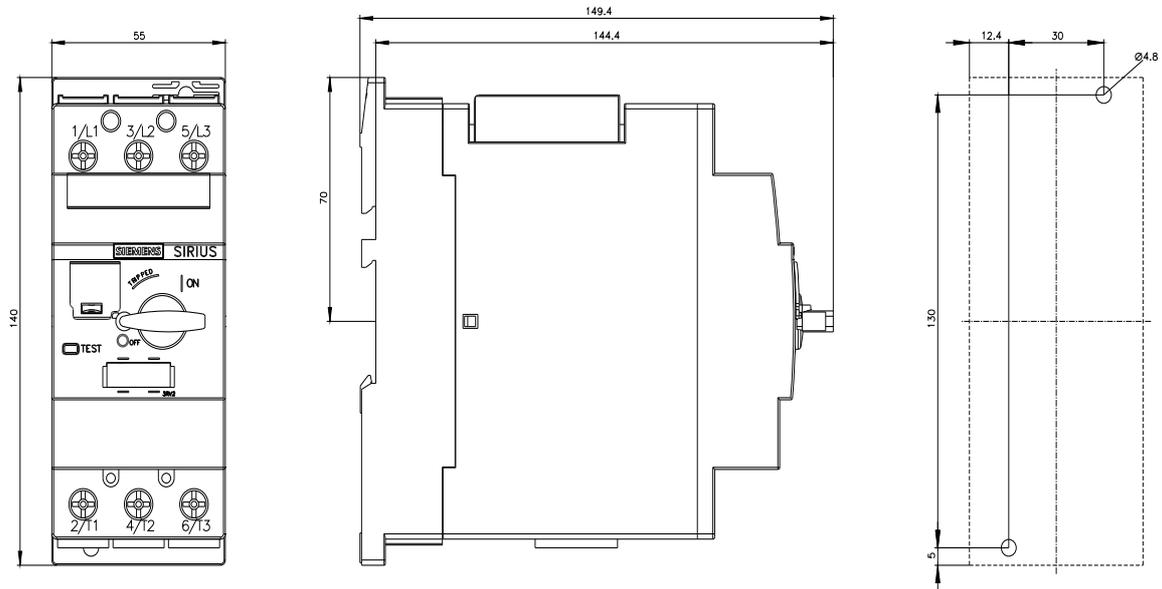
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2431-4BA10&lang=en

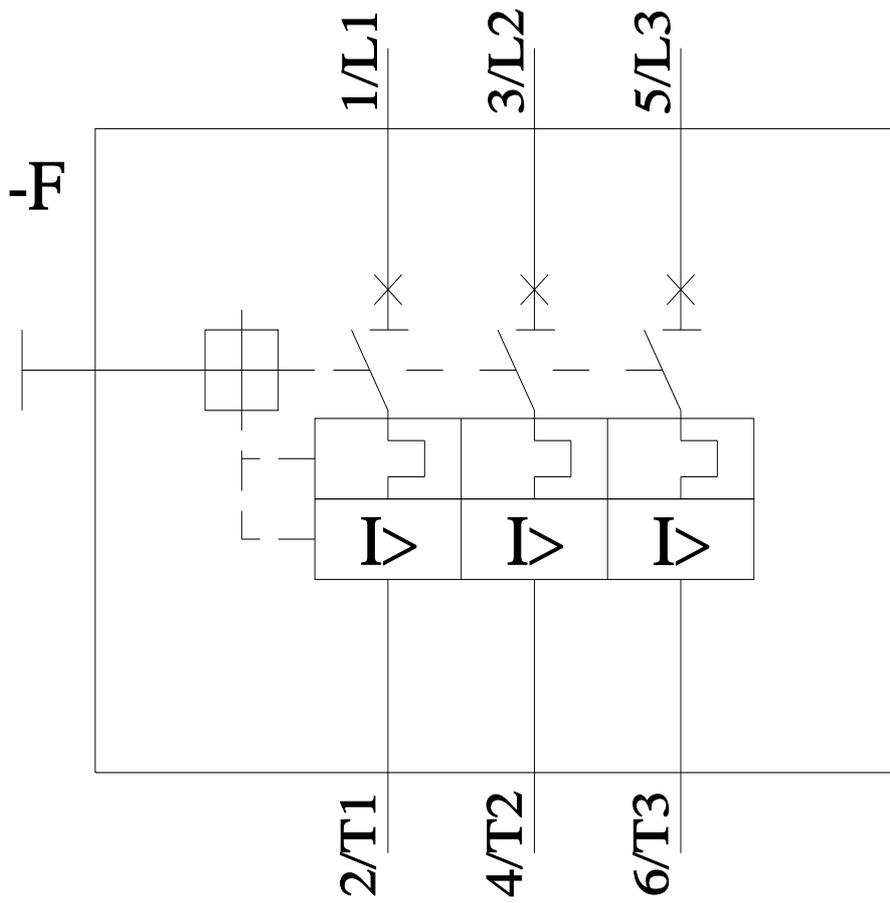
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4BA10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2431-4BA10&objecttype=14&gridview=view1>





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