## **SIEMENS**

Data sheet 3RV2431-4XA10



Circuit breaker size S2 for transformer protection A-release 49-59 A N-release 1040 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	
<ul> <li>at AC in hot operating state</li> </ul>	26 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	8.7 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)	
<ul> <li>of the main contacts typical</li> </ul>	20 000
of auxiliary contacts typical	20 000
electrical endurance (operating cycles) typical	20 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	03/01/2017
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul> <li>during operation</li> </ul>	-20 +60 °C
during storage	-50 +80 °C
during transport	-50 +80 °C
relative humidity during operation	10 95 %
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current- dependent overload release	49 59 A
operating voltage	
rated value	20 690 V
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
at AC-3 lated value maximum	
at AC-3 rated value maximum     at AC-3e rated value maximum	690 V
	690 V 50 60 Hz
at AC-3e rated value maximum	
at AC-3e rated value maximum     operating frequency rated value	50 60 Hz
at AC-3e rated value maximum  operating frequency rated value  operational current rated value	50 60 Hz

operating power	
— at 230 V rated value 15 kW — at 400 V rated value 30 kW — at 500 V rated value 37 kW — at 690 V rated value 55 kW  ■ at AC-3e — at 230 V rated value 15 kW — at 400 V rated value 30 kW	
— at 400 V rated value 30 kW — at 500 V rated value 37 kW — at 690 V rated value 55 kW  ■ at AC-3e — at 230 V rated value 15 kW — at 400 V rated value 30 kW	
— at 500 V rated value 37 kW — at 690 V rated value 55 kW  ■ at AC-3e — at 230 V rated value 15 kW — at 400 V rated value 30 kW	
<ul> <li>— at 690 V rated value</li> <li>55 kW</li> <li>• at AC-3e</li> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>30 kW</li> </ul>	
■ at AC-3e      — at 230 V rated value     — at 400 V rated value     30 kW	
<ul><li>— at 230 V rated value</li><li>— at 400 V rated value</li><li>15 kW</li><li>— 30 kW</li></ul>	
— at 400 V rated value 30 kW	
— at 500 V rated value	
— at 690 V rated value 55 kW	
operating frequency	
• at AC-3 maximum  15 1/h	
• at AC-3e maximum  15 1/h	_
Auxiliary circuit	
number of NC contacts for auxiliary contacts 0	
number of NO contacts for auxiliary contacts 0	_
Protective and monitoring functions	
product function	
<ul> <li>ground fault detection</li> <li>phase failure detection</li> <li>Yes</li> </ul>	
trip class CLASS 10 design of the overload release thermal	
maximum short-circuit current breaking capacity (Icu)	
• at AC at 240 V rated value 65 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	
operating short-circuit current breaking capacity (Ics) at AC	
• 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  1 040 A	
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value 59 A	
• at 600 V rated value 59 A	
yielded mechanical performance [hp]	
• 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 220/230 V rated value 20 hp	
— at 460/480 V rated value 40 hp	
— at 575/600 V rated value 50 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	
• with side-by-side mounting at the side 0 mm	
for grounded parts at 400 V	
— downwards 50 mm	
— upwards 50 mm	

• for live parts at 400 V	
upwards	
- at the side	
- downwards	
- downwards	
- at the side  • for live parts at 500 V  - downwards  - upwards  • for grounded parts at 690 V  - downwards  - upwards  - upwards  - upwards  - pwards  - backwards  - at the side  - to many and the side  - upwards  - backwards  - at the side  - for grounded parts at 690 V  - downwards  - backwards  - upwards  • for live parts at 690 V  - downwards  • for live parts at 690 V  - downwards  - upwards  - up	
- at the side  • for live parts at 500 V  - downwards  - upwards  • for grounded parts at 690 V  - downwards  - upwards  - upwards  - upwards  - pwards  - backwards  - at the side  - to many and the side  - upwards  - backwards  - at the side  - for grounded parts at 690 V  - downwards  - backwards  - upwards  • for live parts at 690 V  - downwards  • for live parts at 690 V  - downwards  - upwards  - up	
of rilve parts at 500 V     odwnwards     outpureds     of or grounded parts at 690 V     odwnwards     of or grounded parts at 690 V     odwnwards     oma	
- downwards - upwards - at the side • for grounded parts at 690 V - downwards - upwards - beckwards - upwards - at the side - for main contacts - upwards - for live parts at 690 V - downwards - for live parts at 690 V - downwards - for live parts at 690 V - downwards - upwards - for live parts at 690 V - downwards - upwards - upwards - upwards - upwards - beckwards - upwards - at the side - forwards - onm - beckwards - onm - beckwards - onm - beckwards - onm - beckwards - onm - one downwards - forwards - onm - one downwards - forwards - forwards - forwards - forwards - for main current circuit - for main current circuit - for main contacts - solid or stranded - finely stranded with core end processing - for AWG cables for main contacts - solid or stranded with core end processing - for AWG cables for main contacts - for main contacts - for main contacts - for main contacts - with finely stranded with core end processing - for aWG cables for main contacts - for main contac	
- at the side  • for grounded parts at 690 V  — downwards — upwards — backwards — at the side — forwards  • for live parts at 690 V  — downwards — omm  • for live parts at 690 V  — downwards — upwards — upwards — upwards — upwards — upwards — backwards — upwards — at the side — 10 mm — backwards — omm — the side — in mm — backwards — omm — omm  Connections/Freminals  Type of electrical connection • for main current circuit  arrangement of electrical connectors • for main contacts — solid or stranded — finely stranded with core end processing • for main contacts with screw-type terminals  tightening torque • for main contacts with screw-type terminals  alsologing of screwdriver shaft  belong for screwdriver shaft  belong for the thread of the connection screw • for main contacts  * for main contacts  # for the screwdriver tip  design of the thread of the connection screw • for main contacts  * with high demand rate according to SN 31920  * with high de	
- at the side  • for grounded parts at 690 V  - downwards  - upwards  - backwards  - the side  - forwards  • for live parts at 690 V  - downwards  • for live parts at 690 V  - downwards  • for live parts at 690 V  - downwards  - upwards  - upwards  - upwards  - backwards  - upwards  - backwards  - the side  - forwards  - the side  - forwards  - the side  - forwards  - o mm  - forwards  - forman current circuit  arrangement of electrical connectors for main current circuit  type of electrical conductor cross-sections  • for main contacts  - solid or stranded  - finely stranded with core end processing  • for AMC cables for main contacts  - solid or stranded  - finely stranded with core end processing  • for Man contacts with screw-type terminals  tightening torque  • for main contacts with screw-type terminals  dosign of scrawdriver shaft    biameter 5 to 6 mm   size of the screwdriver shaft   biameter 5 to 6 mm   biameter 5 to 6 mm   size of the screwdriver tip   design of the thread of the connection screw  • for main contacts  810 value  • with high demand rate according to SN 31920  proportion of dangerous failures  • with low demand rate according to SN 31920    with high demand rate according to SN 31920    with high demand rate according to SN 31920   solid high contact from the front according to IEC 69529    finger-safe, for vertical contact from the front	
for grounded parts at 690 V     downwards     upwards     upwards     backwards     o mm     at the side     forwards     for live parts at 690 V     downwards     for live parts at 690 V     downwards     upwards     upwards     upwards     upwards     backwards     o mm     upwards     backwards     o mm     at the side     forwards     backwards     o mm     at the side     forwards     for min contects     for main current circuit     arrangement of electrical connections     for main current circuit     arrangement of electrical connectors for main current circuit     for main contacts     solid or stranded     fer main contacts     solid or stranded     for main contacts     solid or stranded     for MG cables for main contacts     ighthering torque     for for am contacts with screw-type terminals     design of screwdriver shaft     size of the screwdriver shaft     size of the screwdriver tip     design of the thread of the connection screw     for main contacts     with high demand rate according to SN 31920     with high demand rate according to SN 31920     with high demand rate according to SN 31920     with ligh demand rate according to SN 31920     for the protection on the front according to IEC 60529     finger-safe, for vertical contact from the front     contact from the front according to IEC 60529     finger-safe, for vertical contact from the front	
- downwards 50 mm - upwards 50 mm - backwards 0 mm - the side 10 mm - forwards 0 mm - forwards 0 mm - forwards 0 mm - forwards 50 mm - forwards 50 mm - forwards 50 mm - upwards 50 mm - upwards 50 mm - backwards 10 mm - backwards 10 mm - backwards 10 mm - forwards 70 mm - the side 10 mm - forwards 70 mm - forwards 70 mm - forwards 70 mm - forwards 70 mm - formain current circuit 70 pand bottom - for main current circuit 70 pand bottom - for main contacts 80 mm - solid or stranded 22 (1 25 mm²), 1x (1 50 mm²) - for AVMC cables for main contacts 2x (1 25 mm²), 1x (1 50 mm²) - for main contacts with scree-type terminals 3 45 N·m - design of screwdriver shaft 50 mm - size of the screwdriver tip 60 mm - for main contacts with scree-type terminals 10 mm - size of the screwdriver tip 70 pozdriv size 2 - design of the thread of the connection screw 60 mm - for main contacts 80 mm - for main contacts 90 m	
- upwards - backwards - backwards - at the side - forwards - for live parts at 690 V - downwards - upwards - upwards - upwards - backwards - upwards - backwards - upwards - backwards - backwards - the side - forwards - o mm - forwards - forwards - o mm - for a forwards - forwards - for famin current circuit  arrangement of electrical connection - for main current circuit  arrangement of electrical connectors electrical  - for main contacts  - solid or stranded - finely stranded with core end processing - for AWG cables for main contacts  - tightning torque - for main contacts with screw-type terminals - for main contacts with screw-type terminals - 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 - for main contacts  - with high demand rate according to SN 31920 - with high demand rate according to SN 31920 - with high demand rate according to SN 31920 - with high demand rate according to SN 31920 - with high demand rate according to SN 31920 - with high demand rate according to EC 60529 - filture rate [FIT] - with low demand rate according to IEC 60529 - finely standed from the front according to IEC 60529 - finely standed from the front according to IEC 60529 - finely standed from the front according to IEC 60529 - finely standed from the front according to IEC 60529 - finely standed from the front according to IEC 60529 - finely standed from main and the format according to IEC 60529 - finely st	
- backwards - at the side 10 mm - forwards 0 mm  • for live parts at 690 V - downwards 50 mm - upwards 50 mm - backwards 0 mm - backwards 0 mm - forwards 0 mm - the side 10 mm - forwards 0 mm - at the side 0 mm - forwards 0 mm - forwards 0 mm - forwards 0 mm - forwards 0 mm  Connections/ Terminals  type of electrical connection • for main current circuit screw-type terminals - arrangement of electrical connectors for main current circuit screw-type terminals - solid or stranded 2x (1 35 mm²), 1x (1 50 mm²) - finely stranded with core end processing 2x (1 25 mm²), 1x (1 35 mm²) • for AWG cables for main contacts - solid or stranded 2x (1 35 mm²), 1x (1 35 mm²) - for AWG cables for main contacts - solid or stranded 2x (1 25 mm²), 1x (1 35 mm²) - for amin contacts with screw-type terminals 3 4.5 N·m - design of screwdriver shaft 5 Diameter 5 to 6 mm - size of the screwdriver tip Pozidriv size 2 - design of the thread of the connection screw - for main contacts - with low demand rate according to SN 31920 50 % - with high demand rate according to SN 31920 50 % - with low demand rate according to SN 31920 50 % - with low demand rate according to SN 31920 50 FIT - Ti value for proof test interval or service life according to IEC 60529 - touch protection on the front according to IEC 60529 - finger-safe, for vertical contact from the front	
- at the side	
- forwards - for live parts at 690 V - downwards - upwards - backwards - at the side - forwards - formain current circuit - for main contacts - for main contacts - soll of stranded - finely stranded with core end processing - for AWC cables for main contacts  tightening torque - for main contacts with screw-type terminals - for main contacts with screw-type terminals - for main contacts - for main contacts - soll of stranded - finely stranded with core end processing - for AWC cables for main contacts  tightening torque - for main contacts with screw-type terminals - soll of stranded 2x (1 25 mm²), 1x (1 35 mm²) - for AWC cables for main contacts - for main contacts - for main contacts - for main contacts with screw-type terminals - for main contacts - for main contacts - for main cont	
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- downwards - upwards - backwards - at the side - forwards - forwa	
- upwards	
- backwards - at the side - forwards  Connections/Terminals  type of electrical connection • for main current circuit  arrangement of electrical connectors for main current circuit  type of connectable conductor cross-sections • for main contacts - solid or stranded - finely stranded with core end processing • for AWC cables for main contacts 2x (1 25 mm²), 1x (1 35 mm²) • for AWC cables for main contacts 2x (18 2), 1x (18 1)  tightening torqu • for main contacts with screw-type terminals design of screwdriver shaft Diameter 5 to 6 mm size of the screwdriver shaft Diameter 5 to 6 mm size of the screwdriver tip Pozidriv size 2  design of the thread of the connection screw • for main contacts  **N6  **Safety related data**  **B10 value** • with high demand rate according to SN 31920 proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 • with high demand rate according to SN 31920 • with low demand rate according to SN 31920 • with low demand rate according to SN 31920 • with low demand rate according to SN 31920 • with low demand rate according to SN 31920 • with low demand rate according to SN 31920 • with low demand rate according to SN 31920  **T value for proof test interval or service life according to IEC 60529  protection class IP on the front according to IEC 60529  finger-safe, for vertical contact from the front	
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type of electrical connection	
type of electrical connection	
• for main current circuit  arrangement of electrical connectors for main current circuit  type of connectable conductor cross-sections      • for main contacts      — solid or stranded     — finely stranded with core end processing     • for AWG cables for main contacts      • for awin contacts     • for awin contacts      • for awin contacts with screw-type terminals  design of screwdriver shaft  size of the screwdriver tip  design of the thread of the connection screw      • for main contacts      **B10 value**  with high demand rate according to SN 31920  proportion of dangerous failures  with low demand rate according to SN 31920  with low demand rate according to SN 31920  failure rate [FIT]  with low demand rate according to SN 31920  failure rate [FIT]  with low demand rate according to SN 31920  for First SD FIT  T1 value for proof test interval or service life according to IEC 60529  finger-safe, for vertical contact from the front according to IEC 60529  finger-safe, for vertical contact from the front according to IEC 60529  finger-safe, for vertical contact from the front	
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• for main contacts     — solid or stranded     — finely stranded with core end processing     • for AWG cables for main contacts     • for AWG cables for main contacts     2x (1 25 mm²), 1x (1 35 mm²)     • for AWG cables for main contacts     2x (18 2), 1x (18 1)  tightening torque     • for main contacts with screw-type terminals  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     • for main contacts     M6  Safety related data  B10 value     • with high demand rate according to SN 31920     proportion of dangerous failures     • with low demand rate according to SN 31920     • with high demand rate according to SN 31920     • with high demand rate according to SN 31920     • with low demand rate according to SN 31920     • with low demand rate according to SN 31920  T1 value for proof test interval or service life according to IEC 61508  protection class IP on the front according to IEC 60529  touch protection on the front according to IEC 60529  finger-safe, for vertical contact from the front	
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design of the thread of the connection screw	
● for main contacts  Safety related data  B10 value  ● with high demand rate according to SN 31920  proportion of dangerous failures  ● with low demand rate according to SN 31920  ● with high demand rate according to SN 31920  ● with high demand rate according to SN 31920  failure rate [FIT]  ● with low demand rate according to SN 31920  failure rate [FIT]  ● with low demand rate according to SN 31920  T1 value for proof test interval or service life according to IEC 61508  protection class IP on the front according to IEC 60529  touch protection on the front according to IEC 60529  finger-safe, for vertical contact from the front	
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<ul> <li>with high demand rate according to SN 31920</li> <li>proportion of dangerous failures</li> <li>with low demand rate according to SN 31920</li> <li>with high demand rate according to SN 31920</li> <li>failure rate [FIT]</li> <li>with low demand rate according to SN 31920</li> <li>T1 value for proof test interval or service life according to IEC 61508</li> <li>protection class IP on the front according to IEC 60529</li> <li>touch protection on the front according to IEC 60529</li> <li>finger-safe, for vertical contact from the front</li> </ul>	
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display version for switching status  Handle	
Certificates/ approvals	
General Product Approval Declaration formity	n of Con-





<u>KC</u>





**Declaration of Conformity** 

**Test Certificates** 

Marine / Shipping



Special Test Certificate

Type Test Certificates/Test Report







Marine / Shipping

other

Railway







Confirmation



Vibration and Shock

Railway

Confirmation

## Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RV2431-4XA10

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2431-4XA10

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

https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4XA10

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

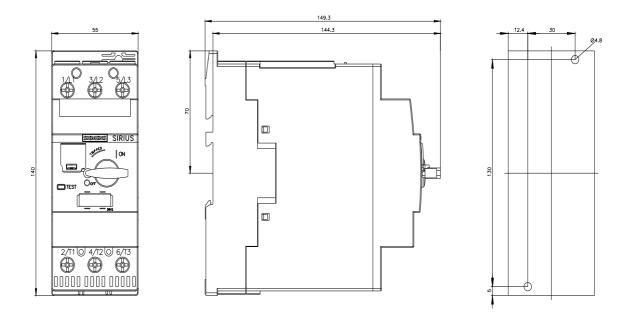
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RV2431-4XA10&lang=en

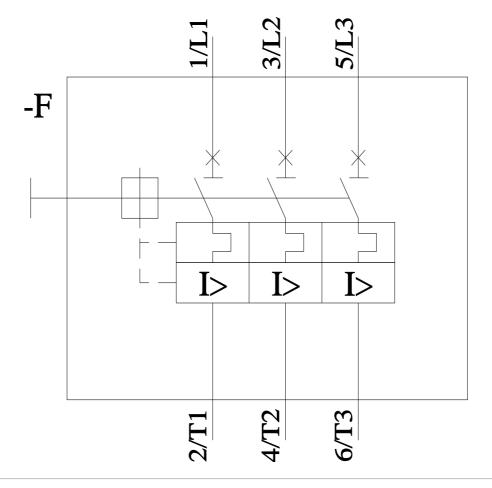
 $\label{eq:Characteristics} \textbf{Characteristics}, \textbf{I}^{\textbf{2}}\textbf{t}, \textbf{Let-through current}$ 

https://support.industry.siemens.com/cs/ww/en/ps/3RV2431-4XA10/char

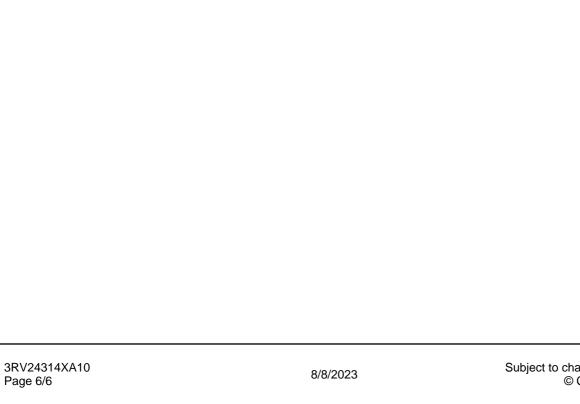
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2431-4XA10&objecttype=14&gridview=view1





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