SIEMENS

Data sheet 3RV2023-4AA10

Circuit breaker size S0 for motor protection, CLASS 10 A-release 11...16 A N-release 208 A screw terminal Switching capacity 30 kA at 600 V according to UL/CSA



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	S0
Size of contactor can be combined company-specific	S00, S0
Product extension	
Auxiliary switch	Yes
Power loss [W] for rated value of the current	
 at AC in hot operating state 	9.25 W
• at AC in hot operating state per pole	3.1 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

 in networks with grounded star point between main and auxiliary circuit 	400 V
Protection class IP	
• on the front	IP20
of the terminal	IP20
Shock resistance	
• acc. to IEC 60068-2-27	25g / 11 ms
Mechanical service life (switching cycles)	
of the main contacts typical	100 000
of auxiliary contacts typical	100 000
Electrical endurance (switching cycles)	
• typical	100 000
Reference code acc. to DIN EN 81346-2	Q
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 pick-up value current of the current- dependent overload release	10 16 A
Operating voltage	
• rated value	690 V
 at AC-3 rated value maximum 	690 V
Operating frequency rated value	50 60 Hz
Operating current rated value	16 A
Operating current	
• at AC-3	
— at 400 V rated value	16 A
Operating power	
• at AC-3	
— at 230 V rated value	4 000 W
— at 400 V rated value	7 500 W
— at 500 V rated value	7 500 W
— at 690 V rated value	11 000 W
Operating frequency • at AC-3 maximum	15 1/h

Number of NC contacts for auxiliary contacts 0	Auxiliary circuit	
Number of CO contacts • for auxiliary contacts • for auxiliary contacts • for auxiliary contacts Product function • Ground fault detection • Cround fault detection • Cround fault detection • Phase failure detection Pess failure detection Possign of the overload release CLASS 10 Design of the overload release Operational short-circuit current breaking capacity (tos) at AC • at 240 V rated value • at 400 V rated value • at 550 V rated value • at 690 V rated value • at 690 V rated value • at AC at 240 V rated value • at AC at 240 V rated value • at AC at 240 V rated value • at AC at 500 V rated value • at AC at 690 V rated value • at AC at 690 V rated value • at AB0 AC Y/277 V acc. to UL 489 rated value • of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value • for single-phase AC motor — at 110/120 V rated value • for three-phase AC motor — at 220/230 V rated value • for three-phase AC motor — at 220/230 V rated value • for three-phase AC motor — at 220/230 V rated value • for three-phase AC motor — at 220/230 V rated value • for three-phase AC motor — at 460/480 V rated value • for three-phase AC motor — at 460/480 V rated value • for phase AC motor — at 400/2028 V rated value • for three-phase AC motor — at 400/2028 V rated value • for three-phase AC motor — at 400/2028 V rated value • for three-phase AC motor — at 400/2028 V rated value • for three-phase AC motor — at 400/2028 V rated value • for three-phase AC motor — at 400/400 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor		0
Protective and monitoring functions Product function • Ground fault detection • Phase failure detection Trip class Design of the overload release CLASS 10 Design of the overload release Operational short-circuit current breaking capacity ((cs) at AC • at 240 V rated value • at 500 V rated value • at 500 V rated value • at 690 V rated value • at 62 40 V rated value • at AC at 240 V rated value • at AC at 240 V rated value • at AC at 690 V rated value • at 600 V rated value • of instantaneous short-circuit trip unit 208 A UUCSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value • at 100 V rated value • at 200 V rated value • for single-phase AC motor — at 110/120 V rated value • for three-phase AC motor — at 200/208 V rated value • for three-phase AC motor — at 200/208 V rated value • for three-phase AC motor — at 200/208 V rated value • for three-phase AC motor — at 460/480 V rated value • for three-phase AC motor — at 460/480 V rated value • for three-phase AC motor — at 460/480 V rated value • for three-phase AC motor — at 460/480 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 675/600 V rated value	Number of NO contacts for auxiliary contacts	0
Product function Product function Ground fault detection Product function Product function Phase failure detection Probase Ground fault detection Probase CLASS 10 CLASS 10 Design of the overload release Operational short-circuit current breaking capacity ((cs) at AC at 240 V rated value Pat 600 V rated value Act	Number of CO contacts	
Product function No Ground fault detection Yes Trip class CLASS 10 Design of the overload release thermal Operational short-circuit current breaking capacity (Ics) at AC • at 240 V rated value 100 kA • at 400 V rated value 25 kA • at 690 V rated value 25 kA • at 690 V rated value 100 kA • at AC at 240 V rated value 2 kA Maximum short-circuit current breaking capacity (Icu) • at AC at 240 V rated value 100 kA • at AC at 400 V rated value 100 kA • at AC at 590 V rated value 4 kA • at AC at 590 V rated value 30 A • at AC at 590 V rated value 4 kA • at AC at 590 V rated value 30 A • at ABO AC Y/277 V acc. to UL 489 rated value 30 A Response value current • of instantaneous short-circuit trip unit 208 A UL/CSA ratings	• for auxiliary contacts	0
Ground fault detection Phase failure detection Phase failure detection Phase failure detection Phase failure detection Pesign of the overload release CLASS 10 Design of the overload release Operational short-circuit current breaking capacity (ics) at AC at 240 V rated value at 400 V rated value at 500 V rated value bat 650 V rated value at 650 V rated value at 640 V rated value bat AC at 240 V rated value at AC at 400 V rated value bat AC at 690 V rated value bat ABO AC 7/277 V acc. to UL 489 rated value bat ABO AC 7/2777 V acc. to UL 489 rated value bat ABO AC 7/2777 V acc. to UL 489	Protective and monitoring functions	
Phase failure detection Trip class CLASS 10 Design of the overload release thermal Operational short-circuit current breaking capacity (ics) at AC • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value • at 690 V rated value • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 500 V rated value • at AC at 500 V rated value • at AC at 500 V rated value • at AC at 690 V rated value • at AC at 890 V rated value • at 480 AC Y/277 V acc. to UL 489 rated value • of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 200 V rated value • at 200 V rated value • for three-phase AC motor — at 110/120 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 220/200 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor • for three-phase AC motor — at 575/600 V rated value • for three-phase AC motor • for three-phase A	Product function	
Trip class	 Ground fault detection 	No
Design of the overload release	Phase failure detection	Yes
Operational short-circuit current breaking capacity (Ics) at AC	Trip class	CLASS 10
(Ics) at AC • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value • at 690 V rated value • at 67 at	Design of the overload release	thermal
• at 400 V rated value 25 kA • at 500 V rated value 5 kA • at 690 V rated value 100 kA Maximum short-circuit current breaking capacity (Icu) • at AC at 240 V rated value 55 kA • at AC at 240 V rated value 100 kA • at AC at 500 V rated value 55 kA • at AC at 690 V rated value 4 kA • at AC at 690 V rated value 30 A Response value current • of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value 16 A • at 600 V rated value 16 A Vielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 2 hp • for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp Short-circuit protection	•	
• at 500 V rated value	● at 240 V rated value	100 kA
• at 690 V rated value	• at 400 V rated value	25 kA
Maximum short-circuit current breaking capacity (Icu) • at AC at 240 V rated value 100 kA • at AC at 400 V rated value 55 kA • at AC at 500 V rated value 4 kA • at AC at 690 V rated value 30 A Response value current • of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value 16 A • at 600 V rated value 16 A • at 600 V rated value 17 hp • for single-phase AC motor — at 110/120 V rated value 2 hp • for three-phase AC motor — at 220/230 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp Short-circuit protection	• at 500 V rated value	5 kA
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 at AB AC Y277 V acc. to UL 489 rated value at 480 AC Y/277 V acc. to UL 489 rated value of instantaneous short-circuit trip unit of instantaneous short-circuit trip unit 208 A **Response value current** of instantaneous short-circuit trip unit 208 A **UL/CSA ratings** *Full-load current (FLA) for three-phase AC motor at 480 V rated value 16 A of at 600 V rated value 16 A *Yielded mechanical performance [hp] of or single-phase AC motor at 110/120 V rated value 1 hp at 230 V rated value for three-phase AC motor at 200/208 V rated value 5 hp at 460/480 V rated value 10 hp at 575/600 V rated value 10 hp at 575/600 V rated value 10 hp	• at 690 V rated value	2 kA
at AC at 400 V rated value at AC at 500 V rated value at AC at 690 V rated value at AB AC AC 4690 V rated value at 480 AC Y/277 V acc. to UL 489 rated value of instantaneous short-circuit trip unit at 480 V rated value at 480 V rated value at 480 V rated value at 600 V rated value at 30 V rated value at 20 V rated value at 200/208 V rated value at 200/208 V rated value at 200/208 V rated value at 460/480 V rated value at 575/600 V rated value	Maximum short-circuit current breaking capacity (Icu)	
at AC at 500 V rated value at AC at 690 V rated value at ABO AC Y/277 V acc. to UL 489 rated value of instantaneous short-circuit trip unit at 480 AC Y/277 V acc. to UL 489 rated value of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor at 480 V rated value for at 600 V rated value for single-phase AC motor at 110/120 V rated value for single-phase AC motor at 230 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 200/208 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor at 2575/600 V rated value for three-phase AC motor	• at AC at 240 V rated value	100 kA
at AC at 690 V rated value at 480 AC Y/277 V acc. to UL 489 rated value of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor at 480 V rated value 16 A at 600 V rated value 16 A Vielded mechanical performance [hp] of or single-phase AC motor at 110/120 V rated value 1 hp at 230 V rated value 2 hp of or three-phase AC motor at 200/208 V rated value 3 hp at 220/230 V rated value 5 hp at 460/480 V rated value 10 hp at 575/600 V rated value 10 hp Short-circuit protection	• at AC at 400 V rated value	55 kA
at 480 AC Y/277 V acc. to UL 489 rated value Response value current of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor at 480 V rated value 16 A at 600 V rated value 16 A Yielded mechanical performance [hp] of or single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 2 hp of or three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp Short-circuit protection	• at AC at 500 V rated value	10 kA
Response value current of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor of at 480 V rated value of at 600 V rated value of for single-phase AC motor of at 110/120 V rated value of three-phase AC motor of at 1230 V rated value of three-phase AC motor of at 200/208 V rated value of at 220/230 V rated value of at 460/480 V rated value of the phase AC motor of at 460/480 V rated value of the phase AC motor of at 575/600 V rated value of the phase AC motor of at 2575/600 V rated value of the phase AC motor of at 2575/600 V rated value of the phase AC motor of at 2575/600 V rated value of the phase AC motor of the phase AC	• at AC at 690 V rated value	4 kA
of instantaneous short-circuit trip unit 208 A UL/CSA ratings Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value • for single-phase AC motor — at 110/120 V rated value • for three-phase AC motor — at 230 V rated value • for three-phase AC motor — at 200/208 V rated value • for three-phase AC motor — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — 10 hp — at 575/600 V rated value	• at 480 AC Y/277 V acc. to UL 489 rated value	30 A
Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value 16 A Yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 2 hp • for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp	Response value current	
Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value 16 A Yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value • for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value — at 460/480 V rated value 10 hp Short-circuit protection	• of instantaneous short-circuit trip unit	208 A
 at 480 V rated value at 600 V rated value 16 A Yielded mechanical performance [hp] for single-phase AC motor — at 110/120 V rated value — at 230 V rated value for three-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 10 hp Short-circuit protection 	UL/CSA ratings	
 at 600 V rated value Yielded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value at 230 V rated value for three-phase AC motor at 200/208 V rated value at 220/230 V rated value at 460/480 V rated value at 5 hp at 460/480 V rated value at 575/600 V rated value 10 hp Short-circuit protection	Full-load current (FLA) for three-phase AC motor	
Yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 2 hp • for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp	● at 480 V rated value	16 A
 for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 2 hp for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp 	● at 600 V rated value	16 A
 — at 110/120 V rated value — at 230 V rated value ● for three-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 10 hp Short-circuit protection 	Yielded mechanical performance [hp]	
 — at 230 V rated value ● for three-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value Short-circuit protection 	 for single-phase AC motor 	
● for three-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp Short-circuit protection	— at 110/120 V rated value	1 hp
- at 200/208 V rated value 3 hp - at 220/230 V rated value 5 hp - at 460/480 V rated value 10 hp - at 575/600 V rated value 10 hp Short-circuit protection	— at 230 V rated value	2 hp
— at 220/230 V rated value 5 hp — at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp Short-circuit protection	• for three-phase AC motor	
— at 460/480 V rated value 10 hp — at 575/600 V rated value 10 hp Short-circuit protection	— at 200/208 V rated value	3 hp
— at 575/600 V rated value 10 hp Short-circuit protection	— at 220/230 V rated value	5 hp
Short-circuit protection	— at 460/480 V rated value	10 hp
·	— at 575/600 V rated value	10 hp
Product function Short circuit protection Yes	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	
● at 400 V	gL/gG 63 A
● at 500 V	gL/gG 50 A
● at 690 V	gL/gG 40 A

nstallation/ mounting/ dimensions	
Mounting position	any
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
Height	97 mm
Width	45 mm
Depth	97 mm
Required spacing	
for grounded parts at 400 V	
— downwards	30 mm
— upwards	30 mm
— Backwards	0 mm
— at the side	9 mm
— forwards	0 mm
• for live parts at 400 V	
— downwards	30 mm
— upwards	30 mm
— Backwards	0 mm
— at the side	9 mm
— forwards	0 mm
• for grounded parts at 500 V	
— downwards	30 mm
— upwards	30 mm
— Backwards	0 mm
— at the side	9 mm
— forwards	0 mm
• for live parts at 500 V	
— downwards	30 mm
— upwards	30 mm
— Backwards	0 mm
— at the side	9 mm
— forwards	0 mm
• for grounded parts at 690 V	
— downwards	50 mm
— upwards	50 mm

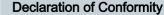
— Backwards	0 mm
— at the side	30 mm
— forwards	0 mm
• for live parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— Backwards	0 mm
— at the side	30 mm

Connections/ Terminals	
Product function	
 removable terminal for auxiliary and control 	No
circuit	
Type of electrical connection	
for main current circuit	screw-type terminals
Arrangement of electrical connectors for main current	Top and bottom
circuit	
Type of connectable conductor cross-sections	
• for main contacts	
— single or multi-stranded	2x (1 2,5 mm²), 2x (2,5 10 mm²)
 finely stranded with core end processing 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
 at AWG conductors for main contacts 	2x (16 12), 2x (14 8)
Tightening torque	
 for main contacts with screw-type terminals 	2 2.5 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	
• for main contacts	M4

Safety related data	
B10 value	
 with high demand rate acc. to SN 31920 	5 000
Proportion of dangerous failures	
 with low demand rate acc. to SN 31920 	50 %
 with high demand rate acc. to SN 31920 	50 %
Failure rate [FIT]	
 with low demand rate acc. to SN 31920 	50 FIT
T1 value for proof test interval or service life acc. to	10 y
IEC 61508	
Display version	
• for switching status	Handle

Certificates/ approvals

General Product Approval













Miscellaneous

Test Certificates

Marine / Shipping

Type Test Certificates/Test Report

Special Test Certificate









Marine / Shipping

other

Railway







Confirmation



Vibration and Shock

Railway

Confirmation

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=3RV2023-4AA10

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2023-4AA10

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

https://support.industry.siemens.com/cs/ww/en/ps/3RV2023-4AA10

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2023-4AA10&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RV2023-4AA10/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2023-4AA10&objecttype=14&gridview=view1

