SIEMENS

Data sheet 3RV2142-4RA10

CIRCUIT-BREAKER SIZE S3, FOR MOTOR PROTECTION, CLASS 10, WITH OVERLOAD RELAY FUNCTION A-REL. 65...84A, N-REL. 1170A SCREW CONNECTION INCREASED BREAKING CAPACITY



product brandname	SIRIUS
Product designation	Circuit breaker
Design of the product	For motor protection with overload relay function
Product type designation	3RV2

General technical data	
Size of the circuit-breaker	S3
Size of contactor can be combined company-specific	S3
Product extension	
Auxiliary switch	Yes
Power loss [W] total typical	29 W
Insulation voltage with degree of pollution 3 rated	1 000 V
value	
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• in networks with grounded star point between	400 V
main and auxiliary circuit	
 in networks with grounded star point between 	400 V
main and auxiliary circuit	

Equipment marking acc. to DIN EN 81346-2 Ambient conditions Ambient temperature • during operation • during storage • during transport Temperature compensation -20 +60 °C • during transport -50 +80 °C • during transport Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating current rated value Operating current rated value Operating current rated value • at AC-3 — at 400 V rated value — at 400 V rated value — at 400 V rated value — at 500 V rated value — at 500 V rated value — at 690 V rated value		
• of the terminal IP00 Mechanical service life (switching cycles) • of the main contacts typical 25 000 • of auxiliary contacts typical 25 000 Protection against electrical shock finger-safe when touched vertically from front acc. to IEC 60525 Equipment marking acc. to DIN EN 81346-2 Q Ambient conditions Ambient temperature • during operation -20 +60 °C • during storage -50 +80 °C Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value • at AC-3 —at 400 V rated value -at 400 V rated value -at 500 V rated value -at 690 V rated value	Protection class IP	
Mechanical service life (switching cycles) of the main contacts typical of auxiliary contacts typical of auxiliary contacts typical of auxiliary contacts typical 25 000 Protection against electrical shock Equipment marking acc. to DIN EN 81346-2 Q Ambient conditions Arnibent temperature oduring poration of during storage of during storage of during storage of during transport Temperature compensation Value of Poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating frequency rated value operating current rated value Operating current rated value at AC-3 and 40 V rated value at 40 V rated value at 400 V rated value at 500 W at 600	• on the front	IP20
of the main contacts typical of auxiliary contacts typical of typic	of the terminal	IP00
of auxiliary contacts typical Electrical endurance (switching cycles) • typical	Mechanical service life (switching cycles)	
Electrical endurance (switching cycles) • typical Protection against electrical shock Equipment marking acc. to DIN EN 81346-2 Ambient conditions Ambient temperature • during operation • during storage • during transport Temperature compensation Adjustable pick-up value current of the current-dependent overload release Operating frequency rated value Operating current • at AC-3 — at 230 V rated value — at 500 V rated value — at 600 V rated value	 of the main contacts typical 	25 000
• typical 25 000 Protection against electrical shock finger-safe when touched vertically from front acc. to IEC 60528 Equipment marking acc. to DIN EN 81346-2 Q Ambient conditions Ambient temperature • during operation -20 +60 °C • during storage -55 +80 °C • during transport -50 +80 °C Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value 690 V Operating frequency rated value 50 60 Hz Operating current • at AC-3 rated value 84 A Operating current • at AC-3 rated value 84 A Operating current • at AC-3 rated value 84 A Operating current • at AC-3 rated value 84 A Operating current • at AC-3 rated value 85 00 W - at 400 V rated value 84 A Operating power • at AC-3 rated value 75 000 W - at 500 V rated value 55 000 W - at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	 of auxiliary contacts typical 	25 000
Protection against electrical shock Equipment marking acc. to DIN EN 81346-2 Ambient conditions Ambient temperature • during operation • during storage • during transport Temperature compensation Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum • at AC-3 — at 400 V rated value — at 400 V rated value — at 690 V rated valu	Electrical endurance (switching cycles)	
Equipment marking acc. to DIN EN 81346-2 Ambient conditions Ambient temperature • during operation • during storage • during transport Temperature compensation -20 +60 °C • during transport -50 +80 °C -50 +80 °C -60 +80 °C -70 .	• typical	25 000
Ambient conditions Anbient temperature • during operation • during storage • during transport -50 +80 °C • during transport -50 +80 °C Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current • at AC-3 — at 400 V rated value 84 A Operating power • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 500 V rated value — at 690 V rated value — a	Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529
Ambient temperature • during operation • during storage • during transport -50 +80 °C -50 +80 °C -50 +80 °C -50 +80 °C Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value 0 at AC-3 - at 400 V rated value 44 A Operating power • at AC-3 - at 400 V rated value - at 500 V rated value - at 500 V rated value - at 690 V rated value - at	Equipment marking acc. to DIN EN 81346-2	Q
	Ambient conditions	
	Ambient temperature	
• during transport Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating current rated value • at AC-3 — at 400 V rated value Operating power • at AC-3 — at 230 V rated value — at 400 V rated value 22 000 W — at 500 V rated value 45 000 W Operating fower • at AC-3 — at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	during operation	-20 +60 °C
Temperature compensation -20 +60 °C Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating current rated value • at AC-3 — at 400 V rated value • at AC-3 — at 230 V rated value — at 400 V rated value — at 400 V rated value — at 400 V rated value — at 500 V vated value — at 690 V Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	during storage	-50 +80 °C
Main circuit Number of poles for main current circuit 3 Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value Operating current rated value • at AC-3 — at 400 V rated value • at AC-3 — at 400 V rated value • at AC-3 — at 400 V rated value • at AC-3 — at 400 V rated value Operating power • at AC-3 — at 400 V rated value — at 500 V rated value — at 690 V rated value — at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	during transport	-50 +80 °C
Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating current rated value • at AC-3 — at 400 V rated value • at AC-3 — at 400 V rated value • at AC-3 — at 400 V rated value • at AC-3 — at 230 V rated value — at 500 V v rated value — at 690 V Operating power • at AC-3 — at 200 V rated value — at 690 V v rated value 50 60 Hz Operating current • at AC-3 — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 690 V rated value — at 690 V rated value — at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	Temperature compensation	-20 +60 °C
Adjustable pick-up value current of the current- dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value • at AC-3 rated value Operating current rated value • at AC-3 — at 400 V rated value Operating power • at AC-3 — at 230 V rated value — at 500 V rated value — at 690 V rated value Operating frequency • at AC-3 — at 400 V rated value — at 500 V rated value — at 500 V rated value — at 690 V rated va	Main circuit	
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Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value 84 A Operating current • at AC-3 — at 400 V rated value 84 A Operating power • at AC-3 — at 230 V rated value 22 000 W — at 400 V rated value 45 000 W — at 500 V rated value 55 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		65 84 A
rated value at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value at AC-3 — at 400 V rated value Operating power at AC-3 — at 230 V rated value — at 400 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 690 V rated value — at 675 000 W Operating frequency at AC-3 maximum Is 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts	-	
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Operating current rated value Operating current • at AC-3 — at 400 V rated value Operating power • at AC-3 — at 230 V rated value — at 400 V rated value — at 400 V rated value — at 500 V rated value — at 500 V rated value — at 690 V rated value — at AC-3 maximum To 500 W Operating frequency • at AC-3 maximum • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		
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— at 400 V rated value Operating power • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 690 V rated value To 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		
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• at AC-3 — at 230 V rated value 22 000 W — at 400 V rated value 45 000 W — at 500 V rated value 55 000 W — at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		84 A
 — at 230 V rated value — at 400 V rated value — at 500 W — at 690 V rated value To 000 W Operating frequency at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 		
- at 400 V rated value 45 000 W - at 500 V rated value 55 000 W - at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		22 000 W
— at 500 V rated value 55 000 W — at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		
— at 690 V rated value 75 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		
Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts • for auxiliary contacts		
at AC-3 maximum Auxiliary circuit Number of NC contacts for auxiliary contacts		73 000 VV
Auxiliary circuit Number of NC contacts • for auxiliary contacts	, , ,	15 1/h
Number of NC contacts • for auxiliary contacts	■ at AC-3 maximum	10 1/11
• for auxiliary contacts		
	Number of NC contacts	
	Number of NC contacts • for auxiliary contacts	
Number of NO contacts	Number of NC contacts • for auxiliary contacts — Note	1

•	for	auxiliary	contacts	2
_	101	auxilial y	COHLACI	3

- Note

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Protective and monitoring functions	
Product function	
Ground fault detection	No
Phase failure 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	100 000 A
• at 400 V rated value	50 000 A
• at 500 V rated value	5 000 A
• at 690 V rated value	3 000 A
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 500 V rated value	10 kA
• at AC at 690 V rated value	6 kA
JL/CSA ratings	
Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	84 A
• at 600 V rated value	84 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	7.5 hp
— at 230 V rated value	15 hp
• for three-phase AC motor	
— at 200/208 V rated value	25 hp
— at 220/230 V rated value	30 hp
— at 460/480 V rated value	60 hp
— at 575/600 V rated value	75 hp
Short-circuit protection	
Product function Short circuit protection	Yes
Design of the short-circuit trip	magnetic
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	165 mm
Width	90 mm

Depth	176 mm
Required spacing	
with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm
— upwards	150 mm
— downwards	150 mm
— at the side	0 mm
• for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	150 mm
— at the side	30 mm
— downwards	150 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	150 mm
— downwards	150 mm
— at the side	30 mm
Daniel de la Companya	

Connections/Terminals	
Product function	
 removable terminal for auxiliary and control 	No
circuit	
Type of electrical connection	
• for main current circuit	screw-type terminals
 for auxiliary and control 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	
— solid	2x (2.5 16 mm²)
— single or multi-stranded	2x (2,5 50 mm²), 1x (10 70 mm²)
Type of connectable conductor cross-sections	
 for auxiliary contacts 	
— finely stranded with core end processing	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 at AWG conductors for auxiliary contacts 	2x (20 16), 2x (18 14)
Tightening torque	
• for ring cable lug	
— for main contacts	4.5 6 N·m
Outer diameter of the usable ring cable lug maximum	19 mm
Tightening torque	

for main contacts with screw-type terminals

4.5 ... 6 N·m

• for auxiliary contacts with screw-type terminals

0.8 ... 1.2 N·m

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

Certificates/approvals

General Product Approval

Declaration of Conformity

Test Certificates









Special Test Certificate Declaration of the Compliance with the order

other		Railway	
Confirmation	Miscellaneous	Vibration and Shock	

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RV2142-4RA10

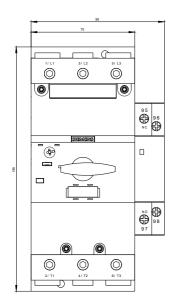
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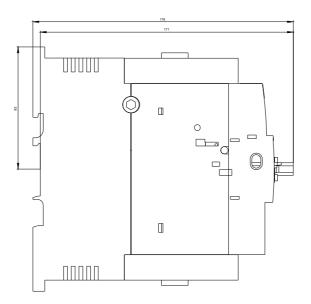
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2142-4RA10

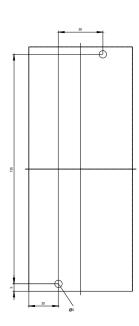
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

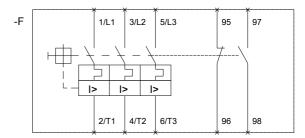
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4RA10

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4RA10&lang=en











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