SIEMENS

Data sheet 3RV2021-1GA10

Circuit breaker size S0 for motor protection, CLASS 10 A-release 4.5...6.3 A N-release 82 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	S0
Size of contactor can be combined company-specific	S00, S0
Product extension	
Auxiliary switch	Yes
Power loss [W] total typical	6 W
Insulation voltage with degree of pollution 3 rated	690 V
value	
Surge voltage resistance rated value	6 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	
Protection class IP	

• of the terminal IP20 Shock resistance	• on the front	IP20
	of the terminal	IP20
Mechanical service life (switching cycles) • of the main contacts typical • of auxiliary contacts of auxiliary contacts • of the main contacts typical • of auxiliary contacts of auxiliary contacts • of auxiliary contacts of auxiliary contacts • of auxi	Shock resistance	
• of the main contacts typical 100 000 • of auxiliary contacts typical 100 000 Electrical endurance (switching cycles) • typical 100 000 Certificate of suitability ATEX Yes Protection against electrical shock finger-safe Reference code acc. to DIN EN 81346-2 Q Ambient conditions Installation altitude at height above sea level • maximum 2 000 m 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 Operating voltage • rated value 990 V • at AC-3 rated value 900 V Operating current rated value 50 60 Hz Operating current • at AC-3 — at 400 V rated value 6.3 A Operating power • at AC-3 — at 230 V rated value 6.3 A Operating power • at AC-3 — at 230 V rated value 2 200 W — at 500 V vated value 2 200 W — at 900 V rated value 2 200 W — at 900 V rated value 3 3000 W — at 900 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NC contacts for auxiliary contacts 0	• acc. to IEC 60068-2-27	25g / 11 ms
of auxiliary contacts typical of auxiliary contacts typical in typic	Mechanical service life (switching cycles)	
Electrical endurance (switching cycles) • typical Certificate of suitability ATEX Protection against electrical shock Reference code acc. to DIN EN 81346-2 Q Ambient conditions Installation altitude at height above sea level • maximum 2 000 m Temperature compensation -20 +60 °C Relative humidity during operation 10 95 % Main circuit Number of poles for main current circuit 3 6.3 A dependent overload release Operating voltage • rated value • at AC-3 rated value • at AC-3 — at 400 V rated value • at AC-3 — at 230 V rated value • at AO-3 — at 400 V rated value — at 500 V rated value — at 600 V rated value — at 500 V rated value — at 500 V rated value — at 500 V rated value — at 600 V rated value — at 500 V rated value — at 500 V rated value — at 600 V rated value — a	 of the main contacts typical 	100 000
• typical 100 000 Certificate of suitability ATEX Yes Protection against electrical shock finger-safe Reference code acc. to DIN EN 81346-2 Q Ambient conditions Installation altitude at height above sea level • maximum 2 000 m 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 Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 690 V Operating current rated value 6.3 A Operating current rated value 6.3 A Operating current rated value 6.3 A Operating power • at AC-3	 of auxiliary contacts typical 	100 000
Certificate of suitability ATEX Protection against electrical shock Reference code acc. to DIN EN 81346-2 Q Ambient conditions Installation altitude at height above sea level • maximum 2 000 m 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 Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 0 of AC-3 - at 400 V rated value 6.3 A Operating power • at AC-3 - at 400 V rated value - at 400 V rated value - at 400 V rated value - at 500 V rated value - at 600 V rated	Electrical endurance (switching cycles)	
Protection against electrical shock Reference code acc. to DIN EN 81346-2 Q Ambient conditions Installation altitude at height above sea level • maximum 2 000 m Temperature compensation 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 Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating current rated value Operating current rated value • at AC-3 — at 400 V 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 — at 690 V - at 690 V Operating frequency rated value Operating frequency • at AC-3 — at 230 V rated value — at 690 V rated va	• typical	100 000
Reference code acc. to DIN EN 81346-2 Ambient conditions Installation altitude at height above sea level maximum 2 000 m 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 Operating voltage at AC-3 rated value at AC-3 rated value Operating frequency rated value at AC-3 - at 400 V rated value at AC-3 - at 400 V rated value - at 400 V rated value - at 500 V rated value - at 500 V rated value - at 500 V rated value - at 690 V - at 500 V rated value - at 400 V rated value - at 690 V	Certificate of suitability ATEX	Yes
Installation altitude at height above sea level • maximum 2 000 m Temperature compensation 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 Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value 50 60 Hz Operating current rated value • at AC-3 — at 400 V rated value — at 4AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated v	Protection against electrical shock	finger-safe
Installation altitude at height above sea level	Reference code acc. to DIN EN 81346-2	Q
Installation altitude at height above sea level	Ambient conditions	
● maximum 2 000 m 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 4.5 6.3 A Operating voltage e rated value ● rated value at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current 6.3 A • at AC-3 - at 400 V rated value • at AC-3 - at 400 V rated value - at 400 V rated value 1 500 W - at 400 V rated value 2 200 W - at 4500 V rated value 3 000 W - at 690 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0		
Relative humidity during operation 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 690 V Operating current rated value 50 60 Hz Operating current rated value 6.3 A Operating current • at AC-3 — at 400 V rated value 6.3 A Operating power • at AC-3 — at 230 V rated value 1 500 W — at 400 V vated value 2 200 W — at 500 V vated value 3 000 W — at 690 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts Number of NO contacts for auxiliary contacts		2 000 m
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 1 500 W Operating power • at AC-3 — at 400 V rated value 1 500 W — at 400 V rated value 2 200 W — at 500 V rated value 3 000 W — at 690 V Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Outperstance of power of the current of the curren	Temperature compensation	-20 +60 °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 frequency 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 • at AC-3 — at 500 V rated value — at 500 V rated value — at 690 V Operating power • at AC-3 — at 230 V rated value — at 690 V rated value • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0	Relative humidity during operation	10 95 %
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 frequency 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 • at AC-3 — at 500 V rated value — at 500 V rated value — at 690 V Operating power • at AC-3 — at 230 V rated value — at 690 V rated value • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0	Main aire iit	
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 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 • at AC-3 — at 400 V rated value — at 690 V Operating power • at AC-3 — at 230 V rated value — at 690 V value — at 690 V value — at 690 V value — at 600 V rated value 1 500 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts		3
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 230 V rated value 1 500 W — at 400 V rated value 2 200 W — at 500 V rated value 3 000 W — at 690 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0		
rated value at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value 6.3 A Operating current at AC-3 — at 400 V rated value 6.3 A Operating power at AC-3 — at 230 V rated value 1 500 W — at 500 V rated value 2 200 W — at 690 V rated value 3 000 W Operating frequency at AC-3 maximum Operating frequency at AC-3 maximum Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts O		
at AC-3 rated value maximum Operating frequency rated value Operating current rated value at AC-3 — at 400 V rated value Operating power at AC-3 — at 230 V rated value 1 500 W — at 400 V rated value 2 200 W — at 500 V rated value — at 690 V rated value 4 000 W Operating frequency at AC-3 maximum at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0	Operating voltage	
Operating frequency rated value Operating current rated value o at AC-3 — at 400 V rated value o at AC-3 — at 230 V rated value at 400 V rated value 1 500 W — at 400 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 AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0	• rated value	690 V
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 690 V rated value — at 690 V rated value — at AC-3 maximum Operating frequency at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0	• at AC-3 rated value maximum	690 V
Operating current • at AC-3 — at 400 V rated value 6.3 A Operating power • at AC-3 — at 230 V rated value 1 500 W — at 400 V rated value 2 200 W — at 500 V rated value 3 000 W — at 690 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	Operating frequency rated value	50 60 Hz
• at AC-3 — at 400 V rated value 6.3 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 — at 690 V rated value 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	Operating current rated value	6.3 A
- at 400 V rated value 6.3 A Operating power	Operating current	
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 4 000 W Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts	• at AC-3	
 at AC-3 at 230 V rated value at 400 V rated value 2 200 W at 500 V rated value 3 000 W at 690 V rated value 4 000 W Operating frequency at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0 	— at 400 V rated value	6.3 A
- at 230 V rated value 1 500 W - at 400 V rated value 2 200 W - at 500 V rated value 3 000 W - at 690 V rated value 4 000 W Operating frequency ● at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	Operating power	
- at 400 V rated value - at 500 V rated value 3 000 W - at 690 V rated value 4 000 W Operating frequency ■ at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0	• at AC-3	
- at 500 V rated value 3 000 W - at 690 V rated value 4 000 W Operating frequency ■ at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	— at 230 V rated value	1 500 W
— at 690 V rated value 4 000 W Operating frequency ■ at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	— at 400 V rated value	2 200 W
Operating frequency • at AC-3 maximum 15 1/h Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	— at 500 V rated value	3 000 W
• at AC-3 maximum Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0 0 0	— at 690 V rated value	4 000 W
Auxiliary circuit Number of NC contacts for auxiliary contacts Number of NO contacts for auxiliary contacts 0 0	Operating frequency	
Number of NC contacts for auxiliary contacts 0 Number of NO contacts for auxiliary contacts 0	● at AC-3 maximum	15 1/h
Number of NO contacts for auxiliary contacts 0	Auxiliary circuit	
	Number of NC contacts for auxiliary contacts	0
Number of CO contacts	Number of NO contacts for auxiliary contacts	0
Tallies 5. 55 collision	Number of CO contacts	

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 kA
• at 400 V rated value	100 kA
at 500 V rated value	100 kA
● at 690 V rated value	4 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 500 V rated value	100 kA
• at AC at 690 V rated value	6 kA
Breaking capacity short-circuit current (Icn)	
 at 1 current path at DC at 150 V rated value 	10 kA
 with 2 current paths in series at DC at 300 V rated value 	10 kA
 with 3 current paths in series at DC at 450 V rated value 	10 kA
Response value current	
• of instantaneous short-circuit trip unit	82 A
UL/CSA ratings	
Full-load current (FLA) for three-phase AC motor	
● at 480 V rated value	6.3 A
● at 600 V rated value	6.3 A
Yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	0.25 hp
— at 230 V rated value	0.5 hp
• for three-phase AC motor	
— at 200/208 V rated value	1 hp
— at 220/230 V rated value	1.5 hp
— at 460/480 V rated value	3 hp
— at 575/600 V rated value	5 hp
Short-circuit protection	
Product function Short circuit protection	Yes

0

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)	97 mm
Width	45 mm
Depth	97 mm
Required spacing	
with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm
— upwards	50 mm
— downwards	50 mm
— at the side	0 mm
for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	50 mm
— at the side	30 mm
— downwards	50 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	50 mm
— downwards	50 mm
— at the side	30 mm
Connections/Terminals Product function	
	No
 removable terminal for auxiliary and control 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)

• 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 IEC 61508	10 y
Display version	
• for switching status	Handle

Certificates/approvals

General Product Approval

For use in hazardous locations







KC





For use in haz-	Declaration of Conformity	Test Certificates	Marine / Ship-
ardous loca-			ping
tions			





Miscellaneous

Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping





LRS









other	Railway
= == = = = = = = = = = = = = = = = = =	

Confirmation



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=3RV2021-1GA10

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-1GA10

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

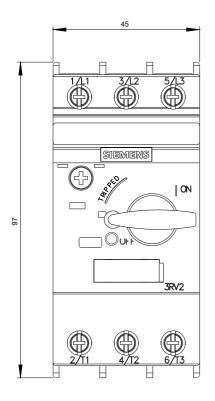
https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1GA10

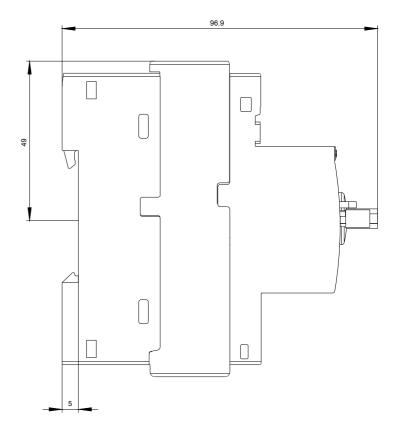
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-1GA10&lang=en

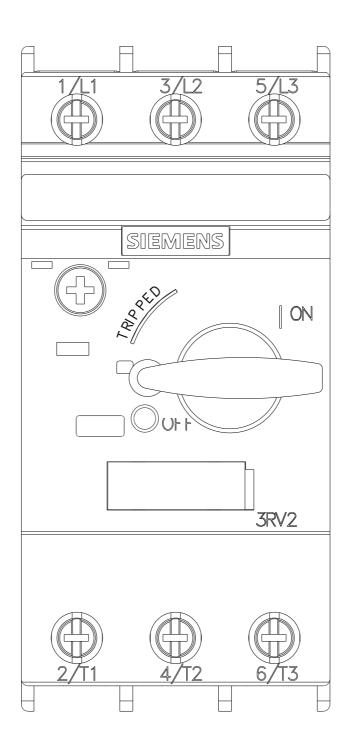
Characteristic: Tripping characteristics, I2t, Let-through current

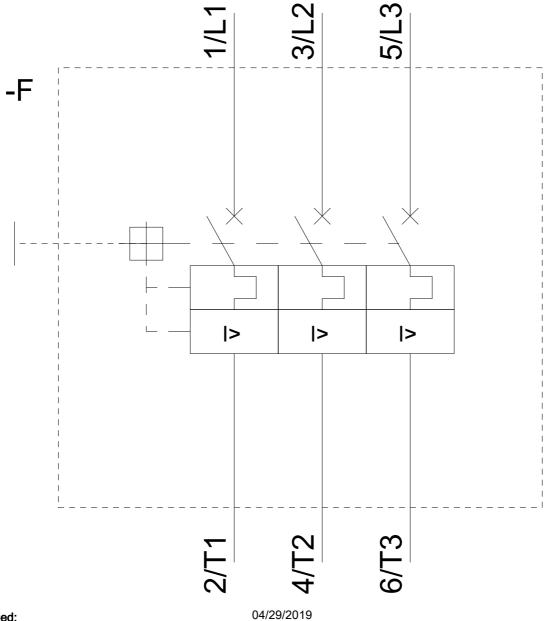
https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1GA10/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2021-1GA10&objecttype=14&gridview=view1









last modified: