SIEMENS

product brand name

Data sheet 3RV2142-4JA10





Circuit breaker size S3 for motor protection CLASS 10 with overload relay function A-release 45...63 A N-release 819 A screw terminal Increased switching capacity 100 kA



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] for rated value of the current	
 at AC in hot operating state 	34 W
at AC in hot operating state per pole	11.3 W
insulation voltage with degree of pollution 3 at AC rated value	1 000 V
surge voltage resistance rated value	8 kV
shock resistance according to IEC 60068-2-27	25g / 11 ms Sinus
mechanical service life (operating cycles)	
 of the main contacts typical 	25 000
of auxiliary contacts typical	25 000
electrical endurance (operating cycles) typical	25 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	03/01/2017
SVHC substance name	Lead - 7439-92-1
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 %
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current- dependent overload release	45 63 A
operating voltage	
• rated value	20 690 V
• at AC-3 rated value maximum	690 V
at AC-3e rated value maximum	690 V
operating frequency rated value	50 60 Hz

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operational current rated value
• at AC-3e at 400 V rated value operating power • at AC-3 — at 230 V rated value — at 500 V rated value — at 500 V rated value — at 600 V rated value — at 600 V rated value • at AC-3e — at 230 V rated value • at AC-3e — at 230 V rated value • at AC-3e — at 230 V rated value • at AC-3e — at 230 V rated value — at 400 V rated value — at 400 V rated value — at 600 V rated value — at 600 V rated value — 55 kW • at AC-3e maximum 15 t/h Auxiliary circuit number of NC contacts for auxiliary contacts • note • note • note • note • note • note • at AC-3e maximum 15 t/h Protective and monitoring functions product function • ground fault detection • yes failure detection Yes maximum short-circuit current breaking capacity (Icu) • at AC-at 240 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 400 V rated value • at AC at 400 V rated value • at AC at 500 V rated value • at AC at 400 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 400 V rated value • at AC at 500 V rated value • at 600 V rated value • a
at AC-3
at 500 V rated value
- at 690 V rated value
- at 230 V rated value 30 kW 30 kW - at 440 V rated value 30 kW - at 590 V rated value 55 kW - at 590 V rated value 55 kW - at 690 V rated value 7.5 kA - at 690 V rated value 100 kA - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 A - at 690 V rated value 1 60 KA - at 690 V rated value
at 400 V rated value
— at 500 V rated value 55 kW — at 690 V rated value 55 kW operating frequency • at AC-3 maximum 15 1/h • at AC-3 maximum 15 1/h Auxiliary circuit number of NC contacts for auxiliary contacts • note 1 number of NC contacts for auxiliary contacts • note 1 Protective and monitoring functions product function • ground fault detection No • phase failure detection Yes trip class CLASS 10 design of the overload release thermal maximum short-circuit current breaking capacity (Icu) • at AC at 240 V rated value 100 kA • at AC at 500 V rated value 15 kA • at AC at 500 V rated value 7.5 kA operating short-circuit current breaking capacity (Ics) at AC • at 240 V rated value 50 kA • at 600 V rated value 40 V rated value 50 kA • at 600 V rated value 40 V rated value 40 V rated value 50 kA • at 600 V rated value 40 V rated value 40 V rated value 50 kA • at 600 V rated value 40 V rated value 40 V rated value 40 V rated value 50 kA • at 600 V rated value 40 V rated value 40 V rated value 50 kA • at 600 V rated value 40 V rated value 40 V rated value 60 V rated value 6
operating frequency • at AC-3 maximum • at AC-3e maximum • at AC-3e maximum 15 1/h Auxilitary circuit number of NC contacts for auxiliary contacts • note • note 1 rumber of NO contacts for auxiliary contacts • note • note 1 Protective and monitoring functions product function • ground fault detection • phase failure detection • phase failure detection • phase failure date detection • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 590 V rated value • at AC at 690 V rated value • at AC at 400 V rated value • at AC at 590 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value • at 400 V rated value
operating frequency • at AC-3 maximum • at AC-3e maximum 15 1/h Auxillary circuit number of NC contacts for auxiliary contacts • note 1 number of NO contacts for auxiliary contacts • note 1 Protective and monitoring functions product function • ground fault detection • phase failure detection • prose fillure detection • prose fillure detection • prose fillure detection • at AC at 240 V rated value • at AC at 240 V rated value • at AC at 500 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 at AC-3e maximum 15 1/h Auxiliary circuit number of NC contacts for auxiliary contacts onote 1 number of NO contacts for auxiliary contacts onote 1 Protective and monitoring functions product function ground fault detection Yes trip class design of the overload release maximum short-circuit current breaking capacity (Icu) at AC at 240 V rated value at AC at 400 V rated value at AC at 500 V rated value at AC at 300 V rated value at 240 V rated value at 240 V rated value 15 kA at AC at 300 V rated value 100 kA at 400 V rated value 15 kA 7.5 kA operating short-circuit current breaking capacity (Ics) at AC at 240 V rated value 50 kA at 400 V rated value 7.5 kA operating short-circuit current breaking capacity (Irs) at AC at 240 V rated value 4 kA response value current of instantaneous short-circuit trip unit UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value 63 A at 600 V rated value 63 A
at AC-3e maximum Auxiliary circuit number of NC contacts for auxiliary contacts • note 1 number of NO contacts for auxiliary contacts • note 1 Protective and monitoring functions product function • ground fault detection • ground fault detection • phase failure detection • phase failure detection • yes trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) • 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 AC at 690 V rated value • at 400 V rated value • at 480 V rated value
Auxiliary circuit number of NC contacts for auxiliary contacts • note number of NO contacts for auxiliary contacts • note 1 Protective and monitoring functions product function • ground fault detection • phase failure detection • phase failure detection trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) • 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 AC at 500 V rated value • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value • at 480 V rated value • at 690 V
number of NC contacts for auxiliary contacts ● note 1 number of NO contacts for auxiliary contacts ● note ● note ● 1 Protective and monitoring functions product function ● ground fault detection ● phase failure detection **Yes** trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) ● 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 40 V rated value ● at 40 V rated value ● at 40 V rated value ● at 400 V rated value ● at 690 V rated value ● at
number of NO contacts for auxiliary contacts
number of NO contacts for auxiliary contacts • note Protective and monitoring functions product function • ground fault detection • phase failure detection • phase failure detection Yes trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 4500 V rated value • at AC at 500 V rated value • at AC at 690 V rated value • at AC of tool V rated value • at AC of value • at 400 V rated value • at 500 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 480 V rated value
Protective and monitoring functions product function ● ground fault detection ● phase failure detection Yes trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) ● 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 690 V rated value ● at AC at 690 V rated value ● at 240 V rated value ● at 340 V rated value ● at 400 V rated value ● at 50 KA ● at 500 V rated value ● at 690 V rated value ● at 480 V rated value
Protective and monitoring functions product function
product function • ground fault detection • phase failure detection Yes trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) • 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 AC at 690 V rated value • at 240 V rated value • at C at 690 V rated value • at 690 V rated value • at 690 V rated value • at 500 V rated value • at 690 V rated value • at 800 V rated value • at 480 V rated value • at 63 A
orground fault detection orground fa
phase failure detection trip class CLASS 10 design of the overload release maximum short-circuit current breaking capacity (Icu) 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 to perating short-circuit current breaking capacity (Ics) at AC at 240 V rated value at 240 V rated value to bkA out AC at 690 V rated value at 240 V rated value at 240 V rated value at 400 V rated value at 400 V rated value at 690 V rated value at
trip class design of the overload release maximum short-circuit current breaking capacity (Icu) • 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 AC at 690 V rated value • at AC at 690 V rated value • at 240 V rated value • at 690 V rated value
design of the overload release maximum short-circuit current breaking capacity (Icu) • 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 AC at 690 V rated value • at 240 V rated value • at 400 V rated value • at 690 V rated value • at 480 V rated value • at 480 V rated value • at 690 V rated value • at 690 V rated value • at 690 V rated value
maximum short-circuit current breaking capacity (Icu) • 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 AC at 690 V rated value • at 240 V rated value • at 240 V rated value • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 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 690 V rated value 7.5 kA Operating short-circuit current breaking capacity (Ics) at AC at 240 V rated value at 400 V rated value at 50 kA at 500 V rated value at 690 V rated value at 690 V rated value at 690 V rated value at 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value
 at AC at 400 V rated value at AC at 500 V rated value 5 kA at AC at 690 V rated value 7.5 kA Operating 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 tAA response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A 63 A
 at AC at 500 V rated value at AC at 690 V rated value 7.5 kA operating 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 tkA response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A at 600 V rated value 63 A
 at AC at 690 V rated value operating 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 tAA response value current of instantaneous short-circuit trip unit B19 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A at 600 V rated value 63 A
operating short-circuit current breaking capacity (Ics) at AC • at 240 V rated value 100 kA • at 400 V rated value 50 kA • at 500 V rated value 7.5 kA • at 690 V rated value 4 kA response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value 63 A • at 600 V rated value 63 A
 at 240 V rated value at 400 V rated value at 500 V rated value at 690 V rated value 4 kA response value current of instantaneous short-circuit trip unit UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A at 600 V rated value 63 A
 at 400 V rated value at 500 V rated value at 690 V rated value 4 kA response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A 63 A
 at 500 V rated value at 690 V rated value 4 kA response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 63 A 63 A
• at 690 V rated value response value current of instantaneous short-circuit trip unit 819 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value
response value current of instantaneous short-circuit trip unit UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value 63 A • at 600 V rated value
UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value 63 A • at 600 V rated value 63 A
full-load current (FLA) for 3-phase AC motor • at 480 V rated value 63 A • at 600 V rated value 63 A
 at 480 V rated value at 600 V rated value 63 A 63 A
• at 600 V rated value 63 A
vielded mechanical performance [hp]
• for single-phase AC motor
— at 110/120 V rated value 5 hp
— at 230 V rated value 15 hp
• for 3-phase AC motor
— at 200/208 V rated value 20 hp
— at 220/230 V rated value 25 hp
— at 460/480 V rated value 50 hp
— at 575/600 V rated value 60 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 60
height 165 mm

width	90 mm
depth	176 mm
required spacing	
with side-by-side mounting at the side	0 mm
• for grounded parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— at the side	10 mm
• for live parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— at the side	10 mm
• for grounded parts at 500 V	
— downwards	110 mm
— upwards	110 mm
— at the side	10 mm
• for live parts at 500 V	
— downwards	110 mm
— upwards	110 mm
— at the side	10 mm
• for grounded parts at 690 V	
— downwards	150 mm
— upwards	150 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
• for live parts at 690 V	V IIIIII
— downwards	150 mm
— upwards	150 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals
arrangement of electrical connectors for main current	Top and bottom
circuit	Top and bottom
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (2.5 16 mm²)
— solid or stranded	2x (2,5 50 mm²), 1x (10 70 mm²)
 finely stranded with core end processing 	2x (2.5 35 mm²), 1x (2.5 50 mm²)
 finely stranded without core end processing 	2x (10 35 mm²), 1x (10 50 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)
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)
tightening torque	
for main contacts for ring cable lug	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
design of the thread of the connection screw	
of the auxiliary and control contacts	M3
Safety related data	
product function suitable for safety function	Yes
suitability for use	
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		EMV

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Confirmation

Miscellaneous





other **Environment**

Confirmation

Environmental Confirmations

Environmental Con-firmations

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=3RV2142-4JA10

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2142-4JA10

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4JA10

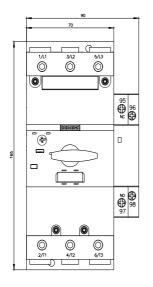
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

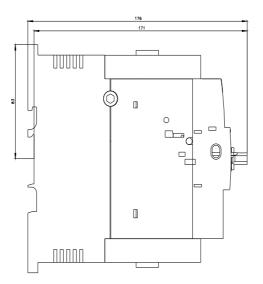
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4JA10&lang=en

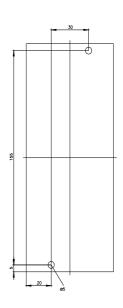
Characteristic: Tripping characteristics, I²t, Let-through current

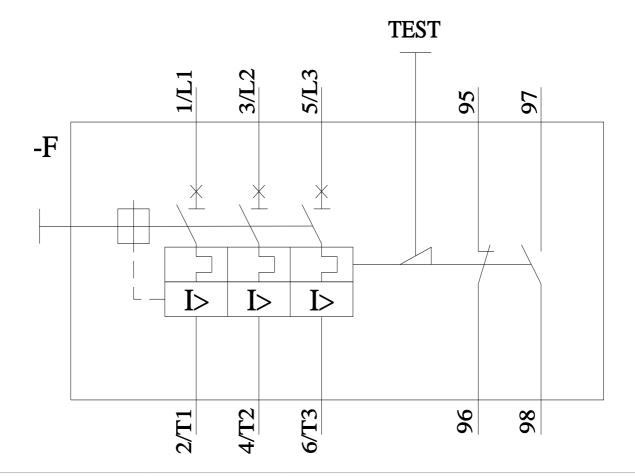
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4JA10/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2142-4JA10&objecttype=14&gridview=view1









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