

Circuit breaker size S3 for motor protection CLASS 10 with overload relay function A-release 65...84 A N-release 1170 A screw terminal
Increased switching capacity 100 kA



Product brand name	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
Power loss [W] for rated value of the current	
• at AC in hot operating state per pole	11.3 W
Insulation voltage with degree of pollution 3 rated value	1 000 V
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• in networks with grounded star point between main and auxiliary circuit	400 V

<ul style="list-style-type: none"> • in networks with grounded star point between main and auxiliary circuit 	400 V
Protection class IP	
<ul style="list-style-type: none"> • on the front 	IP20
<ul style="list-style-type: none"> • of the terminal 	IP00
Shock resistance	
<ul style="list-style-type: none"> • acc. to IEC 60068-2-27 	25g / 11 ms Sinus
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of the main contacts typical 	25 000
<ul style="list-style-type: none"> • of auxiliary contacts typical 	25 000
Electrical endurance (switching cycles)	
<ul style="list-style-type: none"> • typical 	25 000
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • maximum 	2 000 m
Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-20 ... +60 °C
<ul style="list-style-type: none"> • during storage 	-50 ... +80 °C
<ul style="list-style-type: none"> • 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	65 ... 84 A
Operating voltage	
<ul style="list-style-type: none"> • rated value 	690 V
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	690 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	84 A
Operating current	
<ul style="list-style-type: none"> • at AC-3 	
<ul style="list-style-type: none"> — at 400 V rated value 	84 A
Operating power	
<ul style="list-style-type: none"> • at AC-3 	
<ul style="list-style-type: none"> — at 230 V rated value 	22 000 W
<ul style="list-style-type: none"> — at 400 V rated value 	45 000 W
<ul style="list-style-type: none"> — at 500 V rated value 	55 000 W
<ul style="list-style-type: none"> — 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

- Note

1

Number of NO contacts for auxiliary contacts

- Note

1

Protective and monitoring functions

Product function

- Ground fault detection
- Phase failure detection

No

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
- at 400 V rated value
- at 500 V rated value
- at 690 V rated value

100 000 A

50 000 A

5 000 A

3 000 A

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

100 kA

100 kA

10 kA

6 kA

Response value current

- of instantaneous short-circuit trip unit

1 170 A

UL/CSA ratings

Full-load current (FLA) for three-phase AC motor

- at 480 V rated value
- at 600 V rated value

84 A

84 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

7.5 hp

15 hp

25 hp

30 hp

60 hp

75 hp

Short-circuit protection

Product function Short circuit protection

Yes

Design of the short-circuit trip	magnetic
Installation/ 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	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 150 mm — downwards 150 mm — at the side 0 mm • for grounded parts <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 150 mm — at the side 30 mm — downwards 150 mm • for live parts <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 150 mm — downwards 150 mm — at the side 30 mm 	
Connections/ Terminals	
Product function	
<ul style="list-style-type: none"> • removable terminal for auxiliary and control circuit 	No
Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	screw-type terminals screw-type terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid 2x (2.5 ... 16 mm²) — single or multi-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 mm ²), 1x (10 ... 50 mm ²)
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — finely stranded with core end processing • at AWG conductors for auxiliary contacts 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14)
Tightening torque	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary contacts with screw-type terminals 	4.5 ... 6 N·m 0.8 ... 1.2 N·m
Design of the thread of the connection screw	
<ul style="list-style-type: none"> • of the auxiliary and control contacts 	M3

Safety related data

B10 value	
<ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	5 000
Proportion of dangerous failures	
<ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 	50 % 50 %
T1 value for proof test interval or service life acc. to IEC 61508	10 y
Display version	
<ul style="list-style-type: none"> • for switching status 	Handle

Certificates/ approvals

General Product Approval	Declaration of Conformity
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[KC](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Railway
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[Confirmation](#)



[Vibration and Shock](#)

Railway

[Confirmation](#)

Further information

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

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

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

Cax online generator

<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, ...)

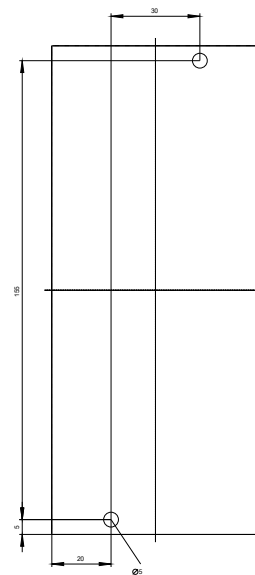
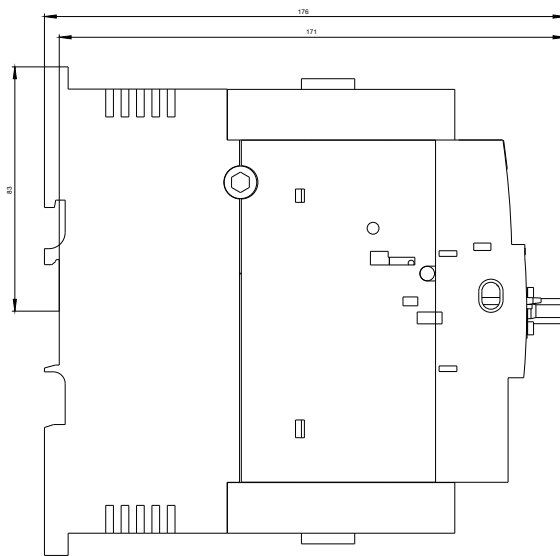
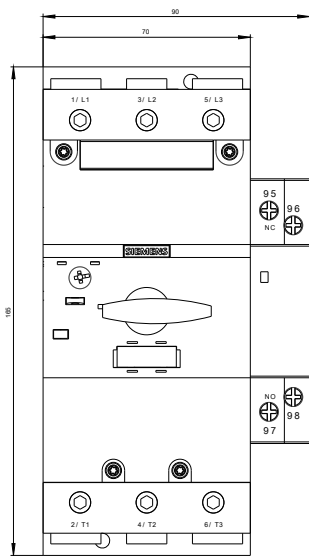
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4RA10&lang=en

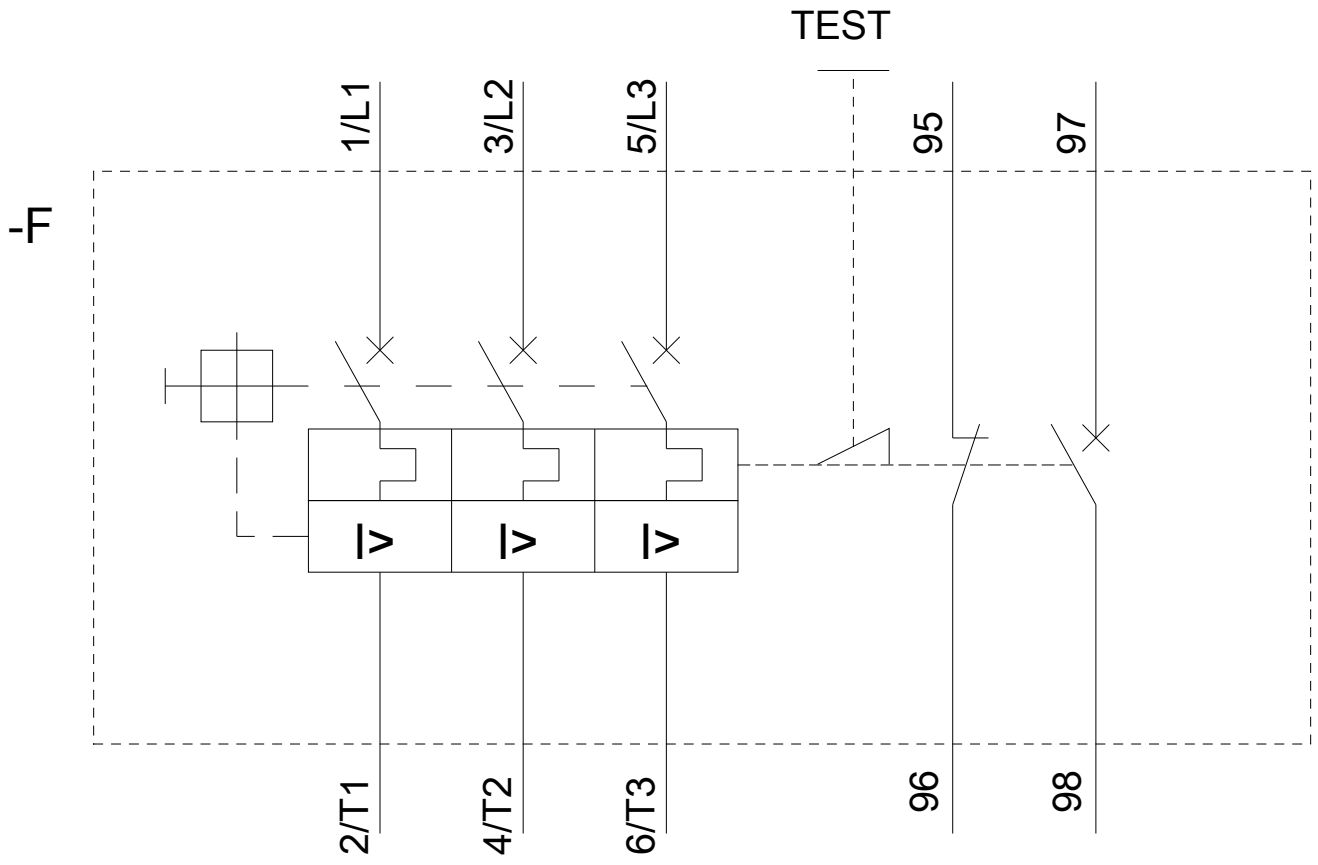
Characteristic: Tripping characteristics, I²t, Let-through current

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

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2142-4RA10&objecttype=14&gridview=view1>





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