

SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 3...12 A IP20 Connection main circuit: screw terminal Connection auxiliary circuit: screw terminal



product brand name	SIRIUS
Product designation	compact starter
Design of the product	direct starter
Product type designation	3RA61

General technical data	
Product function	
• Control circuit interface to parallel wiring	Yes
Product extension	
• Auxiliary switch	Yes
Power loss [W] for rated value of the current	
• at AC in hot operating state	1.8 W
• at AC in hot operating state per pole	0.6 W
Power loss [W] for rated value of the current without load current share typical	2.9 W
• Insulation voltage rated value	690 V
Degree of pollution	3
Surge voltage resistance rated value	6 000 V
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	400 V

<ul style="list-style-type: none"> • between auxiliary and auxiliary circuit 	250 V
<ul style="list-style-type: none"> • between control and auxiliary circuit 	300 V
<ul style="list-style-type: none"> • Protection class IP 	IP20
Degree of protection NEMA rating	other
Shock resistance	a=60 m/s ² (6g) with 10 ms per 3 shocks in all axes
Vibration resistance	f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s ² ; 10 cycles
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of the main contacts typical 	10 000 000
<ul style="list-style-type: none"> • of auxiliary contacts typical 	10 000 000
<ul style="list-style-type: none"> • of the signaling contacts typical 	10 000 000
Electrical endurance (switching cycles) of auxiliary contacts	
<ul style="list-style-type: none"> • at DC-13 at 6 A at 24 V typical 	30 000
<ul style="list-style-type: none"> • at AC-15 at 6 A at 230 V typical 	200 000
Type of assignment	continous operation according to IEC 60947-6-2
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 	-55 ... +80 °C
<ul style="list-style-type: none"> • during transport 	-55 ... +80 °C
Relative humidity during operation	10 ... 90 %

Main circuit

Number of poles for main current circuit	3
adjustable pick-up value current of the current-dependent overload release	3 ... 12 A
Formula for making capacity limit current	12 x I _e
Formula for interruption capacity limit current	10 x I _e
Mechanical power output for 4-pole AC motor	
<ul style="list-style-type: none"> • at 400 V rated value 	5.5 kW
<ul style="list-style-type: none"> • at 500 V rated value 	5.5 kW
<ul style="list-style-type: none"> • at 690 V rated value 	7.5 kW
Operating voltage	
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	690 V
Operating current	
<ul style="list-style-type: none"> • at AC at 400 V rated value 	12 A
<ul style="list-style-type: none"> • at AC-43 	
<ul style="list-style-type: none"> — at 400 V rated value 	11.5 A
<ul style="list-style-type: none"> — at 500 V rated value 	12.4 A
<ul style="list-style-type: none"> — at 690 V rated value 	8.9 A

Operating power	
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value • at AC-43 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value 	<p>5.5 kW</p> <p>5 500 W</p> <p>5 500 W</p> <p>7 500 W</p>
No-load switching frequency	3 600 1/h
Operating frequency	
<ul style="list-style-type: none"> • at AC-41 acc. to IEC 60947-6-2 maximum • at AC-43 acc. to IEC 60947-6-2 maximum 	<p>750 1/h</p> <p>250 1/h</p>

Control circuit/ Control	
type of voltage	AC/DC
Control supply voltage 1 at AC	
<ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	<p>24 V</p> <p>24 V</p>
control supply voltage frequency	
<ul style="list-style-type: none"> • 1 rated value • 2 rated value 	<p>50 Hz</p> <p>60 Hz</p>
Control supply voltage 1	
<ul style="list-style-type: none"> • at DC rated value 	24 V
Holding power	
<ul style="list-style-type: none"> • at AC maximum • at DC maximum 	<p>2.8 W</p> <p>2.9 W</p>

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	1
Number of NO contacts for auxiliary contacts	1
Number of NO contacts	
<ul style="list-style-type: none"> • of instantaneous short-circuit trip unit for signaling contact 	1
Number of CO contacts	
<ul style="list-style-type: none"> • of the current-dependent overload release for signaling contact 	1
Operating current of auxiliary contacts at AC-12 maximum	10 A
<ul style="list-style-type: none"> • operating current of auxiliary contacts at DC-13 at 250 V 	0.27 A

Protective and monitoring functions	
Trip class	CLASS 10 and 20 adjustable
Operational short-circuit current breaking capacity (Ics)	
<ul style="list-style-type: none"> • at 400 V 	53 kA

- at 500 V rated value 3 kA
- at 690 V rated value 3 kA

UL/CSA ratings

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	12 A
• at 600 V rated value	12 A
Yielded mechanical performance [hp]	
• for three-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 hp
Contact rating of auxiliary contacts according to UL	contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300

Short-circuit protection

Product function Short circuit protection	Yes
Design of short-circuit protection	electromagnetic
Design of the fuse link	
• for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
• for short-circuit protection of the signaling switch of the short-circuit release required	6A gL/gG/400V
• for short-circuit protection of the signaling switch of the overload release required	4A gL/gG/400V

Installation/ mounting/ dimensions

• mounting position	any
• Mounting position recommended	vertical, on horizontal standard mounting rail
Mounting type	screw and snap-on mounting
Height	170 mm
Width	45 mm
Depth	165 mm

Connections/ Terminals

Product function	
• removable terminal for main circuit	Yes
• removable terminal for auxiliary and control circuit	Yes
• Type of electrical connection for main current circuit	screw-type terminals
• Type of electrical connection for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-sections	
• for main contacts	

— solid	2x (1.5 ... 6 mm ²), 1x 10 mm ²
— finely stranded with core end processing	2x (1.5 ... 6 mm ²)
• at AWG conductors for main contacts	2x (16 ... 10), 1x 8
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	0.5 ... 4 mm ² , 2x (0.5 ... 2.5 mm ²)
— finely stranded with core end processing	0.5 ... 2.5 mm ² , 2x (0.5 ... 1.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (20 ... 14)

Safety related data

B10 value	
• with high demand rate acc. to SN 31920	3 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	50 %
Failure rate [FIT]	
• with low demand rate acc. to SN 31920	100 FIT
T1 value for proof test interval or service life acc. to IEC 61508	20 y

Communication/ Protocol

product function bus communication	No
Protocol is supported	
• AS-Interface protocol	No
• IO-Link protocol	No
Product function Control circuit interface with IO link	No

Electromagnetic compatibility

Conducted interference	
• due to burst acc. to IEC 61000-4-4	4 kV main contacts, 2 kV auxiliary contacts
• due to conductor-earth surge acc. to IEC 61000-4-5	4 kV main contacts, 2 kV auxiliary contacts
• due to conductor-conductor surge acc. to IEC 61000-4-5	2 kV main contacts, 1 kV auxiliary contacts
• due to high-frequency radiation acc. to IEC 61000-4-6	0.15-80MHz at 10V
Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	8 kV
Conducted HF-interference emissions acc. to CISPR11	150 kHz ... 30 MHz Class A
Field-bound HF-interference emission acc. to CISPR11	30 ... 1000 MHz Class A

Supply voltage

Supply voltage required Auxiliary voltage	No
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Display

number of LEDs

2

Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
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Declaration of Conformity

Test Certificates

Marine / Shipping



EG-Konf.

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

Marine / Shipping

other



PRS



RINA



RMRS



DNVGL.COM/AF

[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=3RA6120-1DB32>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1DB32>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1DB32>

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

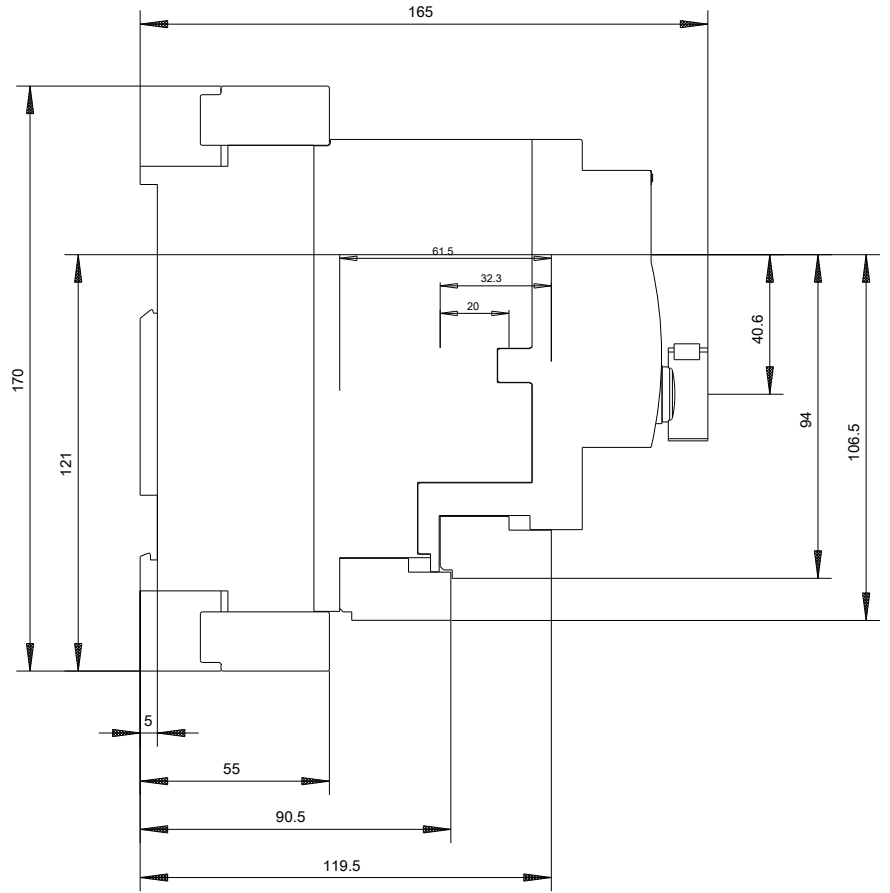
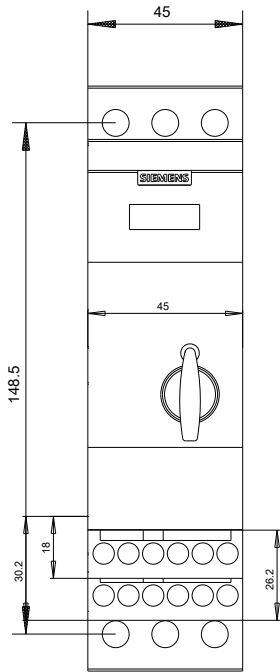
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1DB32&lang=en

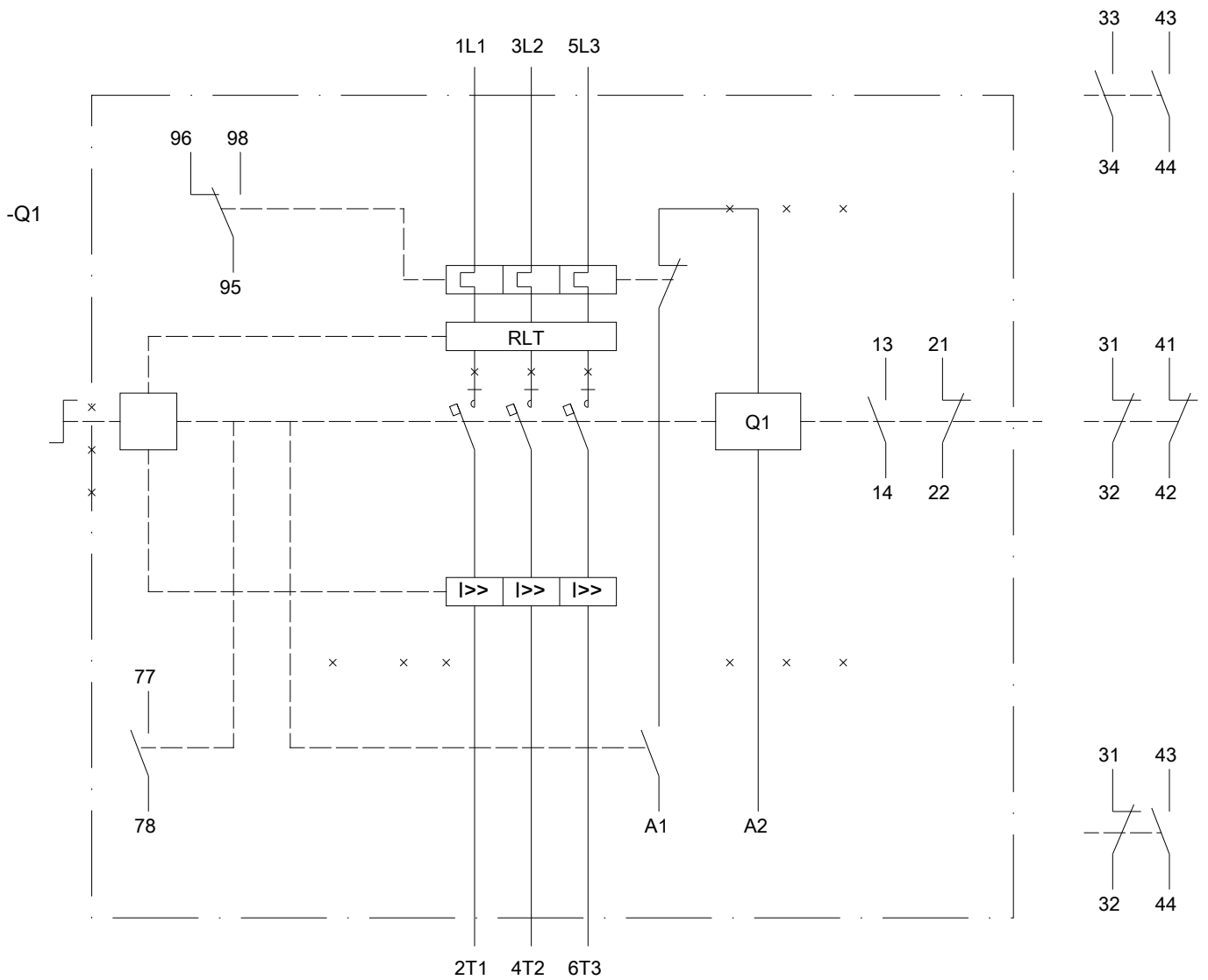
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1DB32/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1DB32&objecttype=14&gridview=view1>





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