

SIRIUS Compact load feeder DOL starter 690 V 110...240 V AC/DC
50...60 Hz 0.1...0.4 A IP20 Connection main circuit: plug-in, without
terminals 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 - at AC in hot operating state per pole	0.01 W 0.01 W
Power loss [W] for rated value of the current without load current share typical	6 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 • between auxiliary and auxiliary circuit • between control and auxiliary circuit	400 V 250 V 300 V
Protection class IP	IP20
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) • of the main contacts typical • of auxiliary contacts typical • of the signaling contacts typical	10 000 000 10 000 000 10 000 000
Electrical endurance (switching cycles) of auxiliary contacts • at DC-13 at 6 A at 24 V typical • at AC-15 at 6 A at 230 V typical	30 000 200 000
Type of assignment	continous operation according to IEC 60947-6-2
Reference code acc. to DIN EN 81346-2	Q
Reference code acc. to DIN EN 61346-2	Q

Ambient conditions

Installation altitude at height above sea level • maximum	2 000 m
Ambient temperature • during operation • during storage • during transport	-20 ... +60 °C -55 ... +80 °C -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	0.1 ... 0.4 A
Formula for making capacity limit current	120 x I _e
Formula for interruption capacity limit current	100 x I _e
Mechanical power output for 4-pole AC motor • at 400 V rated value • at 500 V rated value • at 690 V rated value	0.09 kW 0.12 kW 0.18 kW
Operating voltage • at AC-3 rated value maximum	690 V
Operating current • at AC at 400 V rated value • at AC-43 — at 400 V rated value — at 500 V rated value	0.4 A 0.3 A 0.32 A

— at 690 V rated value	0.35 A
Operating power	
• at AC-3	
— at 400 V rated value	90 W
• at AC-43	
— at 400 V rated value	90 W
— at 500 V rated value	120 W
— at 690 V rated value	180 W
No-load switching frequency	3 600 1/h
Operating frequency	
• at AC-41 acc. to IEC 60947-6-2 maximum	750 1/h
• at AC-43 acc. to IEC 60947-6-2 maximum	250 1/h

Control circuit/ Control

Type of voltage	AC/DC
Control supply voltage 1 at AC	
• at 50 Hz	110 ... 240 V
• at 60 Hz	110 ... 240 V
Control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
Control supply voltage 1	
• at DC	110 ... 240 V
Holding power	
• at AC maximum	6 W
• at DC maximum	5.1 W

Auxiliary circuit

Number of NC contacts for auxiliary contacts	1
Number of NO contacts for auxiliary contacts	1
Number of NO contacts	
• of instantaneous short-circuit trip unit for signaling contact	1
Number of CO contacts	
• of the current-dependent overload release for signaling contact	1
Operating current of auxiliary contacts at AC-12 maximum	10 A
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)	

• 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	0.4 A
• at 600 V rated value	0.4 A
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
• 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	plug-in without terminals
• 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	
• 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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Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
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Declaration of Conformity	Test Certificates	Marine / Shipping
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EG-Konf.

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

Marine / Shipping	other
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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=3RA6120-1AP33>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1AP33>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AP33>

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

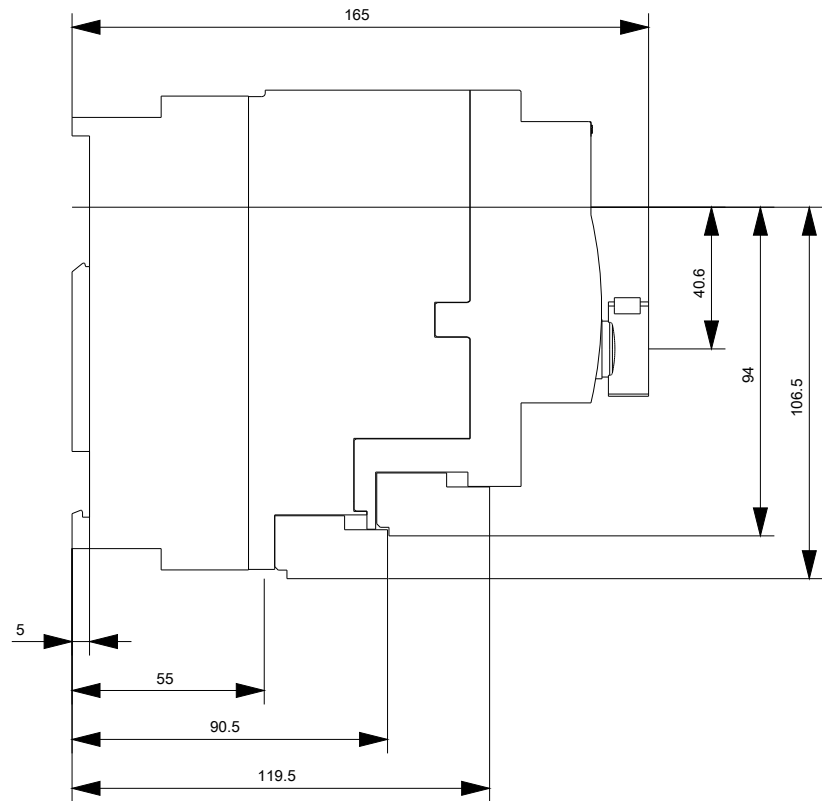
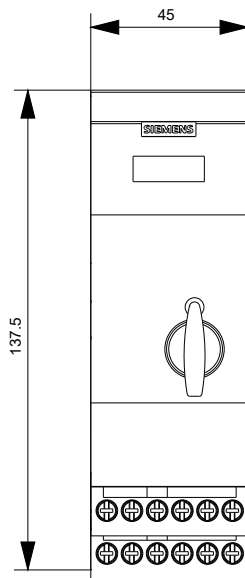
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1AP33&lang=en

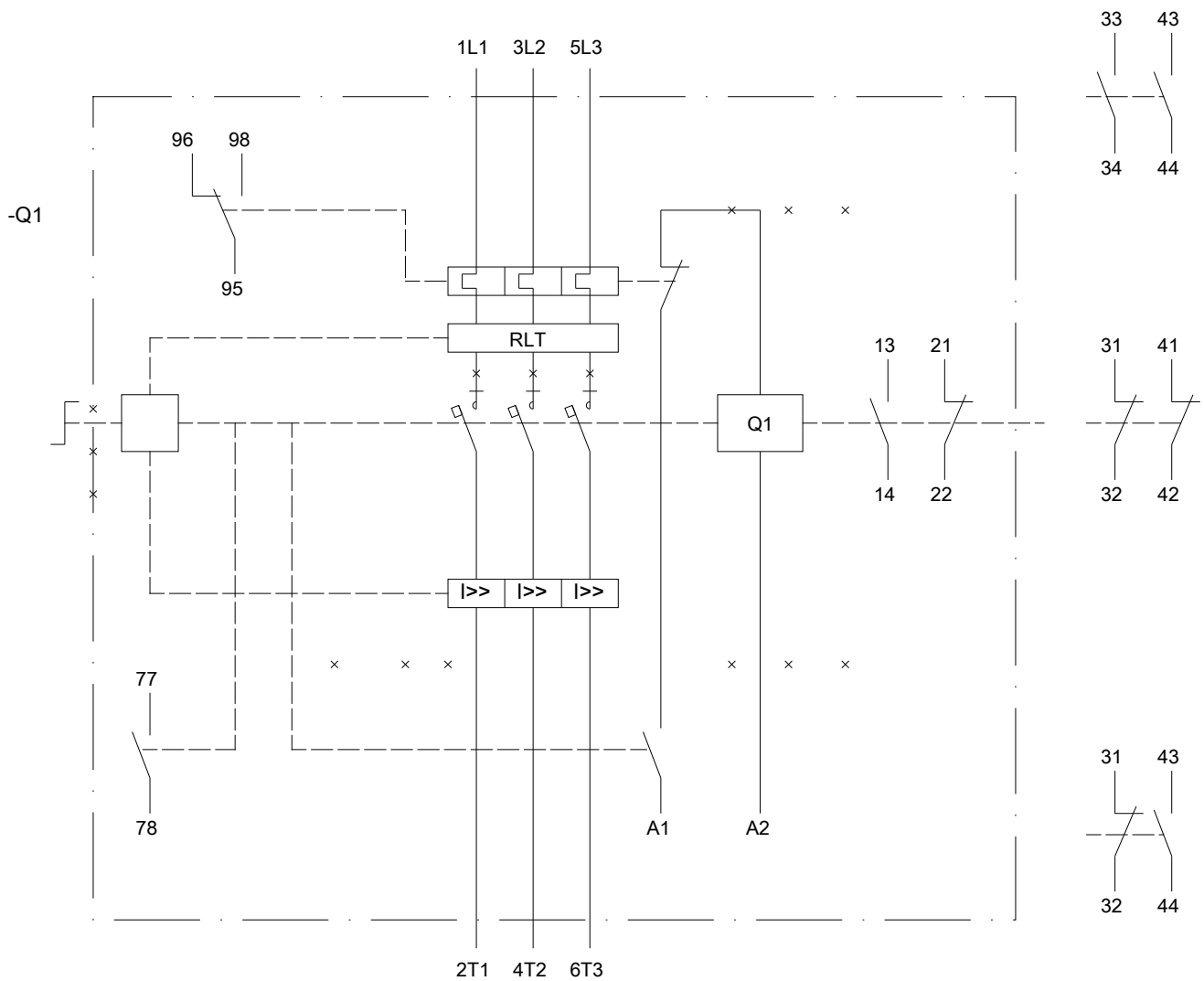
Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AP33/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1AP33&objecttype=14&gridview=view1>





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