

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: Spring-type 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	0.01 W
• at AC in hot operating state per pole	0.01 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
• between auxiliary and auxiliary circuit	250 V

• between control and auxiliary circuit	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	10 000 000
• of auxiliary contacts typical	10 000 000
• of the signaling contacts typical	10 000 000
Electrical endurance (switching cycles) of auxiliary contacts	
• at DC-13 at 6 A at 24 V typical	30 000
• at AC-15 at 6 A at 230 V typical	200 000
Type of assignment	continuous 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	-20 ... +60 °C
• during storage	-55 ... +80 °C
• 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	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	0.09 kW
• at 500 V rated value	0.12 kW
• at 690 V rated value	0.18 kW
Operating voltage	
• at AC-3 rated value maximum	690 V
Operating current	
• at AC at 400 V rated value	0.4 A
• at AC-43	
— at 400 V rated value	0.3 A
— at 500 V rated value	0.32 A
— at 690 V rated value	0.35 A
Operating power	

<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value 	90 W
<ul style="list-style-type: none"> • at AC-43 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value 	90 W 120 W 180 W
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 	750 1/h 250 1/h

Control circuit/ Control	
Type of voltage	AC/DC
Control supply voltage 1 at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	110 ... 240 V 110 ... 240 V
Control supply voltage frequency <ul style="list-style-type: none"> • 1 rated value • 2 rated value 	50 Hz 60 Hz
Control supply voltage 1 <ul style="list-style-type: none"> • at DC 	110 ... 240 V
Holding power <ul style="list-style-type: none"> • at AC maximum • at DC maximum 	6 W 5.1 W

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	1
Number of NO contacts for auxiliary contacts	1
Operating current of auxiliary contacts at AC-12 maximum	10 A
Operating current of auxiliary contacts at DC-13 <ul style="list-style-type: none"> • 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 • at 500 V rated value • at 690 V rated value 	53 kA 3 kA 3 kA

UL/CSA ratings	
Full-load current (FLA) for three-phase AC motor <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	0.4 A 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
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Short-circuit protection

Product function Short circuit protection	Yes
Design of short-circuit protection	electromagnetic
Design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the auxiliary switch required 	fuse gL/gG: 10 A
<ul style="list-style-type: none"> • for short-circuit protection of the signaling switch of the short-circuit release required 	6A gL/gG/400V
<ul style="list-style-type: none"> • for short-circuit protection of the signaling switch of the overload release required 	4A gL/gG/400V

Installation/ mounting/ dimensions

Mounting position	any
<ul style="list-style-type: none"> • recommended 	vertical, on horizontal standard mounting rail
Mounting type	screw and snap-on mounting
Height	191 mm
Width	45 mm
Depth	165 mm

Connections/ Terminals

Product function	
<ul style="list-style-type: none"> • removable terminal for main circuit 	Yes
<ul style="list-style-type: none"> • removable terminal for auxiliary and control circuit 	Yes
Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit 	plug-in without terminals
<ul style="list-style-type: none"> • for auxiliary and control current circuit 	spring-loaded terminals
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid 	2x (1.5 ... 6 mm ²), 1x 10 mm ²
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (1.5 ... 6 mm ²)
<ul style="list-style-type: none"> — finely stranded without core end processing 	2x (1.5 ... 6 mm ²)
<ul style="list-style-type: none"> • at AWG conductors for main contacts 	2x (16 ... 10), 1x 8
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> — finely stranded without core end processing 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • at AWG conductors for auxiliary contacts 	2x (24 ... 16)

Safety related data

B10 value	
<ul style="list-style-type: none"> with high demand rate acc. to SN 31920 	3 000 000
Proportion of dangerous failures	
<ul style="list-style-type: none"> with low demand rate acc. to SN 31920 	40 %
<ul style="list-style-type: none"> with high demand rate acc. to SN 31920 	50 %
Failure rate [FIT]	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> IO-Link protocol 	No
Product function Control circuit interface with IO link	No

Electromagnetic compatibility

Conducted interference	
<ul style="list-style-type: none"> due to burst acc. to IEC 61000-4-4 	4 kV main contacts, 2 kV auxiliary contacts
<ul style="list-style-type: none"> due to conductor-earth surge acc. to IEC 61000-4-5 	4 kV main contacts, 2 kV auxiliary contacts
<ul style="list-style-type: none"> due to conductor-conductor surge acc. to IEC 61000-4-5 	2 kV main contacts, 1 kV auxiliary contacts
<ul style="list-style-type: none"> 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

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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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[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=3RA6120-2AP33>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-2AP33>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2AP33>

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

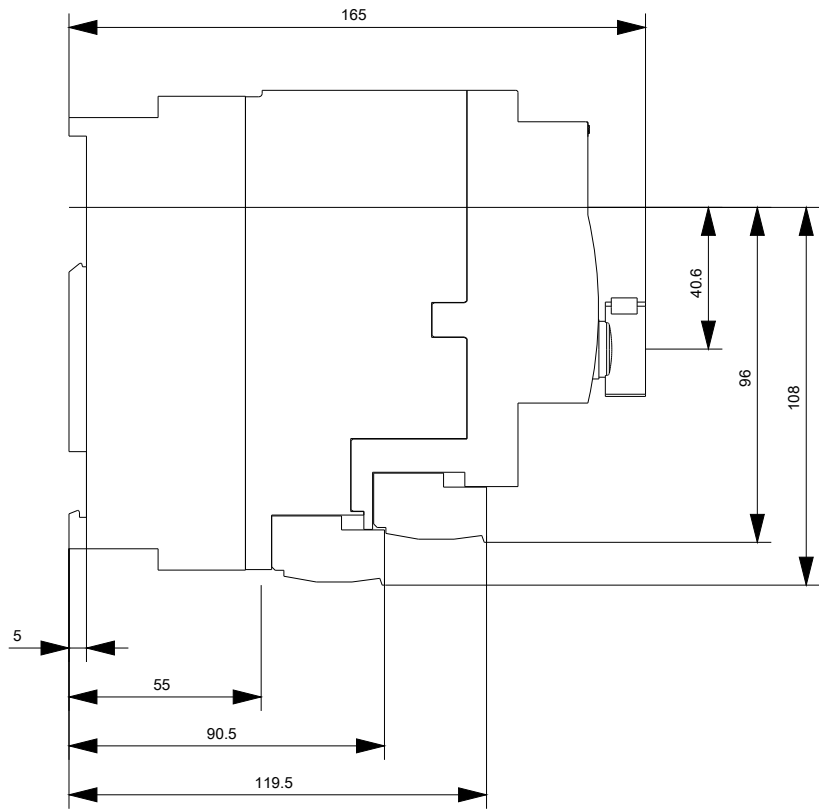
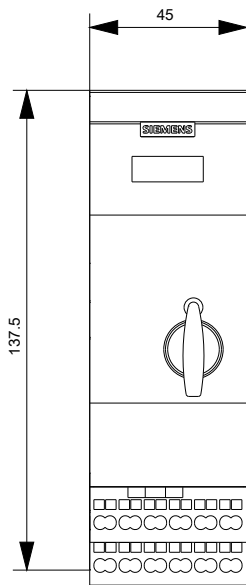
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-2AP33&lang=en

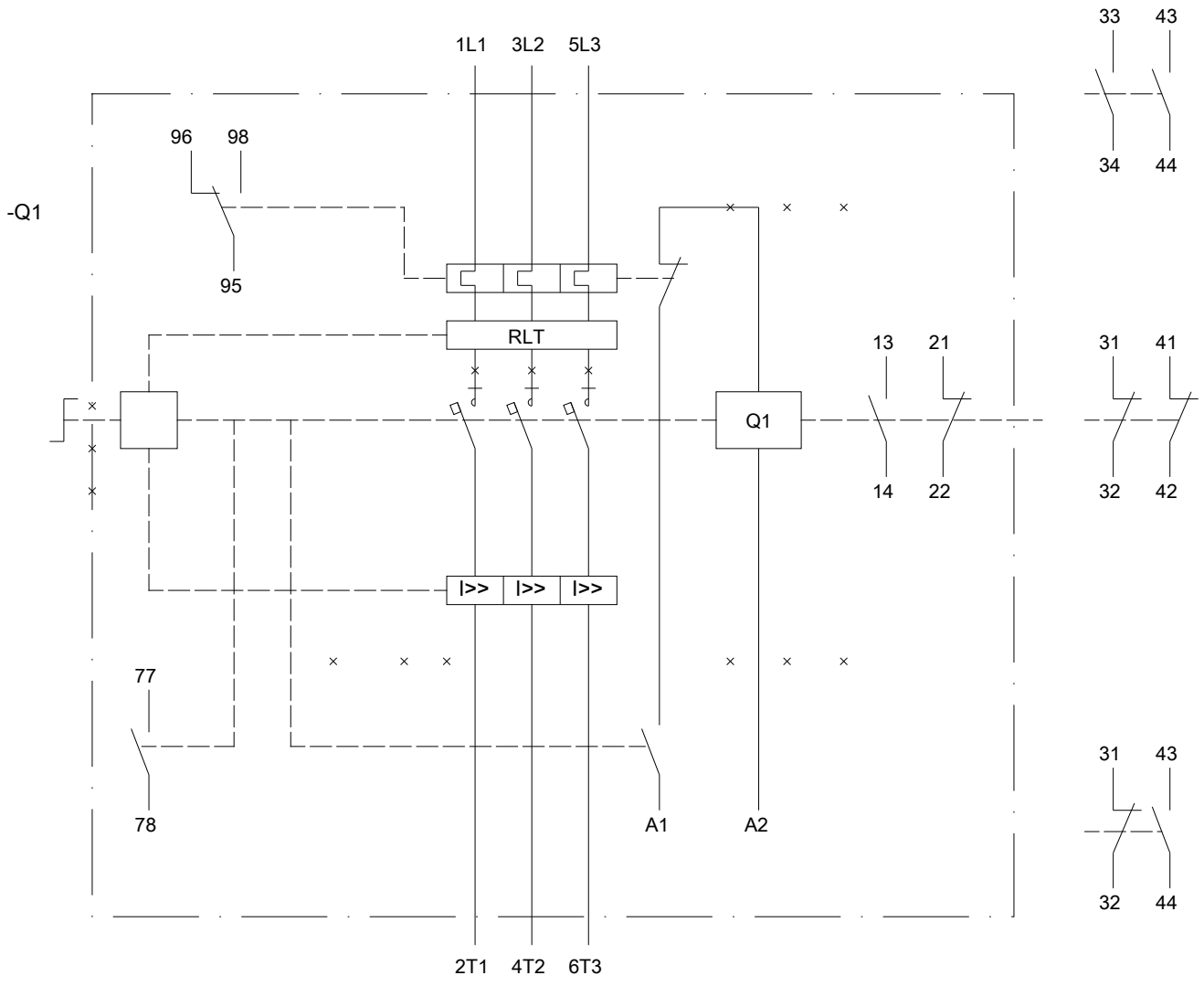
Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2AP33/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-2AP33&objecttype=14&gridview=view1>





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