



SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz
3...12 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	1.8 W
• at AC in hot operating state per pole	0.6 W
• 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
• between auxiliary and auxiliary circuit	250 V
• between control and auxiliary circuit	300 V
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 (operating 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 (operating 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 according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/01/2012

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 current response value current of the	3 ... 12 A

current-dependent overload release	
formula for making capacity limit current	12 x I _e
formula for limit current breaking capacity	10 x I _e
yielded mechanical performance for 4-pole AC motor	
• at 400 V rated value	5.5 kW
• at 500 V rated value	5.5 kW
• at 690 V rated value	7.5 kW
operating voltage at AC-3 rated value maximum	690 V
operational current	
• at AC at 400 V rated value	12 A
• at AC-3 at 400 V rated value	12 A
• at AC-43	
— at 400 V rated value	11.5 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
operating power	
• at AC-3 at 400 V rated value	5.5 kW
• at AC-43	
— at 400 V rated value	5 500 W
— at 500 V rated value	5 500 W
— at 690 V rated value	7 500 W
no-load switching frequency	3 600 1/h
operating frequency	
• at AC-41 according to IEC 60947-6-2 maximum	750 1/h
• at AC-43 according 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 rated value	24 V
• at 50 Hz	24 ... 24 V
• at 60 Hz rated value	24 V
• at 60 Hz	24 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
control supply voltage 1	
• at DC rated value	24 V
• at DC	24 ... 24 V
holding power	
• at AC maximum	2.8 W
• at DC maximum	2.9 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
operational current of auxiliary contacts at AC-12 maximum	10 A
operational current of auxiliary contacts at DC-13 at 250 V	0.27 A

Protective and monitoring functions

trip class	CLASS 10 and 20 adjustable
operating short-circuit current breaking capacity (I_{cs})	
• 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 3-phase AC motor	
• at 480 V rated value	12 A
• at 600 V rated value	12 A
yielded mechanical performance [hp] for 3-phase AC motor	
• at 200/208 V rated value	3 hp

- at 220/230 V rated value
- at 460/480 V rated value
- at 575/600 V rated value

3 hp
7.5 hp
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 design of short-circuit protection design of the fuse link

Yes
electromagnetic

- for short-circuit protection of the auxiliary switch required
- for short-circuit protection of the signaling switch of the short-circuit release required
- for short-circuit protection of the signaling switch of the overload release required

fuse gL/gG: 10 A
6A gL/gG/400V
4A gL/gG/400V

Installation/ mounting/ dimensions

mounting position

- recommended

any
vertical, on horizontal standard DIN rail

fastening method

screw and snap-on mounting

height

191 mm

width

45 mm

depth

165 mm

Connections/ Terminals

product component removable terminal for main circuit

Yes

product component removable terminal for auxiliary and control circuit

Yes

type of electrical connection

- for main current circuit
- for auxiliary and control circuit

plug-in without terminals
spring-loaded terminals

type of connectable conductor cross-sections

- for main contacts
 - solid
 - finely stranded with core end processing
 - finely stranded without core end processing
- at AWG cables for main contacts

2x (1.5 ... 6 mm²), 1x 10 mm²
2x (1.5 ... 6 mm²)
2x (1.5 ... 6 mm²)
2x (16 ... 10), 1x 8

type of connectable conductor cross-sections

- for auxiliary contacts
 - solid
 - finely stranded with core end processing
 - finely stranded without core end processing
- at AWG cables for auxiliary contacts

2x (0.25 ... 1.5 mm²)
2x (0.25 ... 1.5 mm²)
2x (0.25 ... 1.5 mm²)
2x (24 ... 16)

Safety related data

B10 value with high demand rate according to SN 31920

3 000 000

proportion of dangerous failures

- with low demand rate according to SN 31920
- with high demand rate according to SN 31920

40 %
50 %

failure rate [FIT] with low demand rate according to SN 31920

100 FIT

T1 value for proof test interval or service life according to IEC 61508

20 a

protection class IP on the front according to IEC 60529

IP20

touch protection on the front according to IEC 60529

finger-safe

Communication/ Protocol

product function bus communication protocol is supported

No

- AS-Interface protocol
- IO-Link protocol

No
No

product function control circuit interface with IO link

No

Electromagnetic compatibility

conducted interference

- due to burst according to IEC 61000-4-4
- due to conductor-earth surge according to IEC

4 kV main contacts, 2 kV auxiliary contacts
4 kV main contacts, 2 kV auxiliary contacts

61000-4-5

- due to conductor-conductor surge according to IEC 61000-4-5

- due to high-frequency radiation according to IEC 61000-4-6

field-based interference according to IEC 61000-4-3
 electrostatic discharge according to IEC 61000-4-2
 conducted HF interference emissions according to CISPR11

field-bound HF interference emission according to CISPR11

2 kV main contacts, 1 kV auxiliary contacts

0.15-80MHz at 10V

10 V/m

8 kV

150 kHz ... 30 MHz Class A

30 ... 1000 MHz Class A

Supply voltage

Supply voltage required Auxiliary voltage	No
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Display

number of LEDs	2
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Certificates/ approvals

General Product Approval	EMC
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[Confirmation](#)



Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates

Marine / Shipping



[Type Test Certificates/Test Report](#)



Marine / Shipping

other

Dangerous Good



[Confirmation](#)

[Transport Information](#)

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=3RA6120-2DB33>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-2DB33>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2DB33>

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

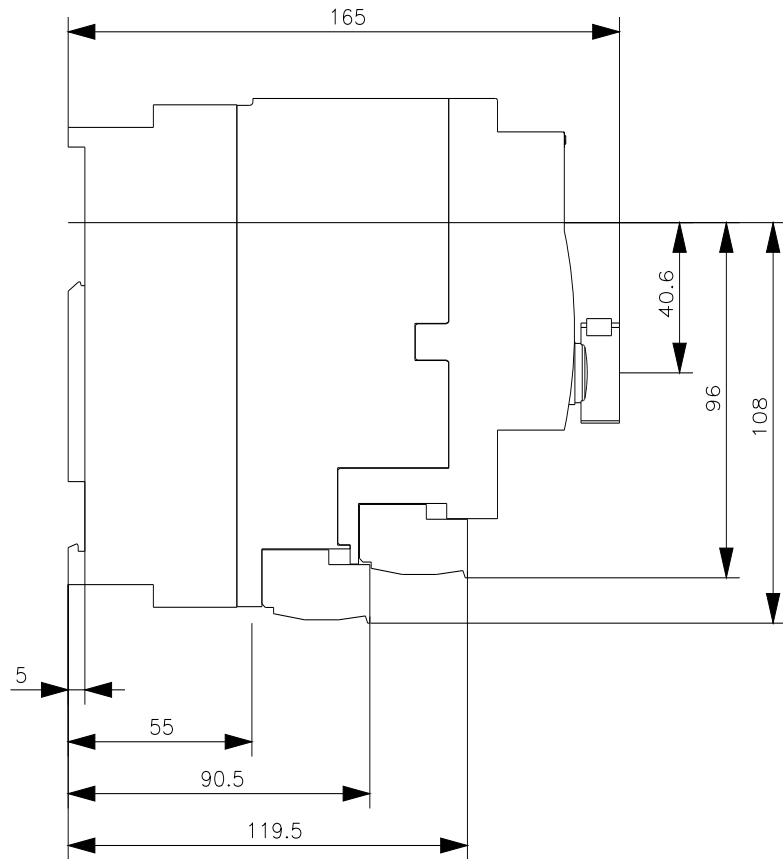
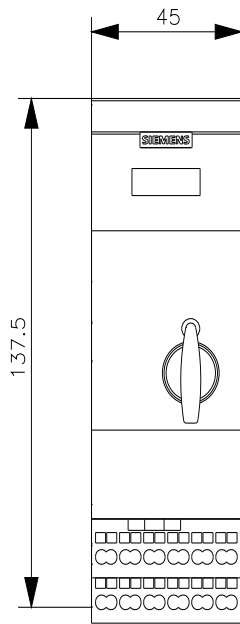
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-2DB33&lang=en

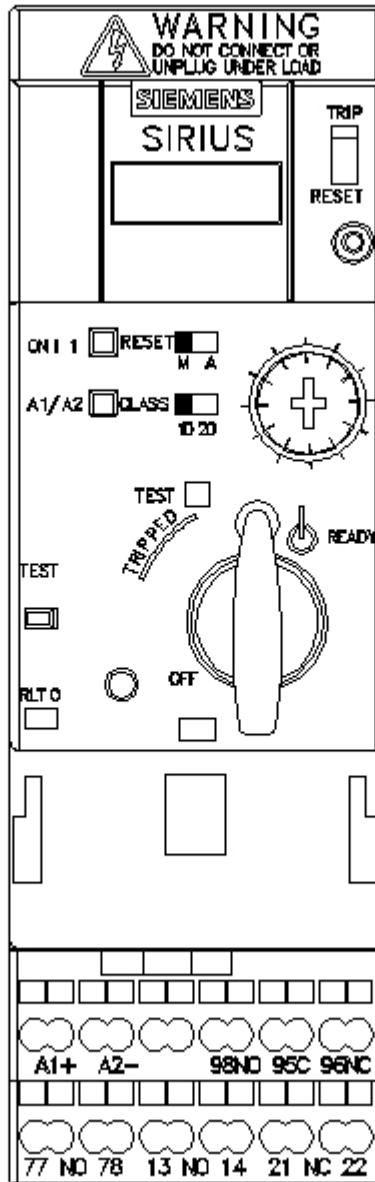
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2DB33/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-2DB33&objecttype=14&gridview=view1>







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