



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

<b>product brand name</b>	SIRIUS
<b>product designation</b>	compact starter
<b>design of the product</b>	direct starter
<b>product type designation</b>	3RA61
<b>General technical data</b>	
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
• per pole	0.6 W
<b>power loss [W] for rated value of the current without load current share typical</b>	2.9 W
insulation voltage rated value	690 V
<b>degree of pollution</b>	3
<b>surge voltage resistance rated value</b>	6 000 V
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	400 V
• between auxiliary and auxiliary circuit	250 V
• between control and auxiliary circuit	300 V
<b>degree of protection NEMA rating</b>	other
<b>shock resistance</b>	a=60 m/s <sup>2</sup> (6g) with 10 ms per 3 shocks in all axes
<b>vibration resistance</b>	f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s <sup>2</sup> ; 10 cycles
<b>mechanical service life (switching cycles)</b>	
• of the main contacts typical	10 000 000
• of auxiliary contacts typical	10 000 000
• of the signaling contacts typical	10 000 000
<b>electrical endurance (switching cycles) of auxiliary contacts</b>	
• at DC-13 at 6 A at 24 V typical	30 000
• at AC-15 at 6 A at 230 V typical	200 000
<b>type of assignment</b>	continuous operation according to IEC 60947-6-2
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibance (Date)	01.05.2012 00:00:00
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
• ambient temperature during operation	-20 ... +60 °C
• ambient temperature during storage	-55 ... +80 °C
• ambient temperature during transport	-55 ... +80 °C

relative humidity during operation	10 ... 90 %
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>adjustable current response value current of the current-dependent overload release</b>	3 ... 12 A
<b>formula for making capacity limit current</b>	12 x I <sub>e</sub>
<b>formula for breaking capacity limit current</b>	10 x I <sub>e</sub>
<b>yielded mechanical performance for 4-pole AC motor</b>	
• 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
<b>operational current</b>	
• at AC 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
<b>operating power</b>	
• 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
<b>no-load switching frequency</b>	3 600 1/h
<b>operating frequency</b>	
• 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
<b>Control circuit/ Control</b>	
<b>type of voltage</b>	AC/DC
<b>control supply voltage 1 at AC</b>	
• at 50 Hz rated value	24 V
• at 60 Hz rated value	24 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>control supply voltage 1</b>	
• at DC rated value	24 V
<b>holding power</b>	
• at AC maximum	2.8 W
• at DC maximum	2.9 W
<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	1
<b>number of NO contacts for auxiliary contacts</b>	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
<b>operational current of auxiliary contacts at AC-12 maximum</b>	10 A
operational current of auxiliary contacts at DC-13 at 250 V	0.27 A
<b>Protective and monitoring functions</b>	
<b>trip class</b>	CLASS 10 and 20 adjustable
<b>breaking capacity operating short-circuit current (I<sub>cs</sub>)</b>	
• at 400 V	53 kA
• at 500 V rated value	3 kA
• at 690 V rated value	3 kA
<b>UL/CSA ratings</b>	

<b>full-load current (FLA) for 3-phase AC motor</b>	
<ul style="list-style-type: none"> <li>at 480 V rated value</li> <li>at 600 V rated value</li> </ul>	12 A 12 A
yielded mechanical performance [hp] for 3-phase AC motor	
<ul style="list-style-type: none"> <li>at 200/208 V rated value</li> <li>at 220/230 V rated value</li> <li>at 460/480 V rated value</li> <li>at 575/600 V rated value</li> </ul>	3 hp 3 hp 7.5 hp 10 hp
<b>contact rating of auxiliary contacts according to UL</b>	contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300
<b>Short-circuit protection</b>	
<b>product function short circuit protection</b>	Yes
<b>design of short-circuit protection</b>	electromagnetic
<b>design of the fuse link</b>	
<ul style="list-style-type: none"> <li>for short-circuit protection of the auxiliary switch required</li> <li>for short-circuit protection of the signaling switch of the short-circuit release required</li> <li>for short-circuit protection of the signaling switch of the overload release required</li> </ul>	fuse gL/gG: 10 A  6A gL/gG/400V 4A gL/gG/400V
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<ul style="list-style-type: none"> <li>recommended</li> </ul>	vertical, on horizontal standard mounting rail
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	191 mm
<b>width</b>	45 mm
<b>depth</b>	165 mm
<b>Connections/ Terminals</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>removable terminal for main circuit</li> <li>removable terminal for auxiliary and control circuit</li> </ul>	Yes Yes
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> </ul>	plug-in without terminals spring-loaded terminals
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for main contacts <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> </ul> </li> <li>at AWG cables for main contacts</li> </ul>	2x (1.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> 2x (1.5 ... 6 mm <sup>2</sup> ) 2x (1.5 ... 6 mm <sup>2</sup> ) 2x (16 ... 10), 1x 8
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for auxiliary contacts <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> </ul> </li> <li>at AWG cables for auxiliary contacts</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (24 ... 16)
<b>Safety related data</b>	
B10 value with high demand rate acc. to SN 31920	3 000 000
<b>proportion of dangerous failures</b>	
<ul style="list-style-type: none"> <li>with low demand rate acc. to SN 31920</li> <li>with high demand rate acc. to SN 31920</li> </ul>	40 % 50 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>Communication/ Protocol</b>	
<b>product function bus communication</b>	No
<b>protocol is supported</b>	
<ul style="list-style-type: none"> <li>AS-Interface protocol</li> </ul>	No

• IO-Link protocol	No	
product function control circuit interface with IO link	No	
<b>Electromagnetic compatibility</b>		
<b>conducted interference</b>		
• 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	
<b>field-based interference acc. to IEC 61000-4-3</b>	10 V/m	
<b>electrostatic discharge acc. to IEC 61000-4-2</b>	8 kV	
<b>conducted HF interference emissions acc. to CISPR11</b>	150 kHz ... 30 MHz Class A	
<b>field-bound HF interference emission acc. to CISPR11</b>	30 ... 1000 MHz Class A	
<b>Supply voltage</b>		
Supply voltage required Auxiliary voltage	No	
<b>Display</b>		
number of LEDs	2	
<b>Certificates/ approvals</b>		
General Product Approval	EMC	Functional Safety/Safety of Machinery



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



[Type Test Certificates/Test Report](#)



<b>Marine / Shipping</b>	<b>other</b>
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[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=3RA6120-2DB33>

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

**Characteristic: Tripping characteristics, I<sup>2</sup>t, 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>





