

SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 1...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	
<b>Product function</b>	
<ul style="list-style-type: none"> <li>Control circuit interface to parallel wiring</li> </ul>	Yes
<b>Product extension</b>	
<ul style="list-style-type: none"> <li>Auxiliary switch</li> </ul>	Yes
<b>Power loss [W] for rated value of the current</b>	
<ul style="list-style-type: none"> <li>at AC in hot operating state</li> </ul>	1 W
<ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>	0.33 W
<b>Degree of pollution</b>	3
<b>Surge voltage resistance rated value</b>	6 000 V
<b>maximum permissible voltage for safe isolation</b>	
<ul style="list-style-type: none"> <li>between main and auxiliary circuit</li> </ul>	400 V
<ul style="list-style-type: none"> <li>between auxiliary and auxiliary circuit</li> </ul>	250 V
<ul style="list-style-type: none"> <li>between control and auxiliary circuit</li> </ul>	300 V
<b>Protection class IP</b>	IP20

<b>Shock resistance</b>	a=60 m/s <sup>2</sup> (6g) with 10 ms per 3 shocks in all axes
<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 DIN EN 81346-2</b>	Q
<b>Reference code acc. to DIN EN 61346-2</b>	Q

### Ambient conditions

<b>Installation altitude at height above sea level</b>	
• maximum	2 000 m
Relative humidity during operation	10 ... 90 %

### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Adjustable pick-up value current of the current-dependent overload release</b>	1 ... 4 A
<b>Formula for making capacity limit current</b>	12 x I <sub>e</sub>
<b>Formula for interruption capacity limit current</b>	10 x I <sub>e</sub>
<b>Mechanical power output for 4-pole AC motor</b>	
• at 400 V rated value	1.5 kW
• at 500 V rated value	2.2 kW
• at 690 V rated value	3 kW
<b>Operating voltage</b>	
• at AC-3 rated value maximum	690 V
<b>Operating current</b>	
• at AC at 400 V rated value	4 A
• at AC-43	
— at 400 V rated value	3.6 A
— at 500 V rated value	3.9 A
— at 690 V rated value	3.8 A
<b>Operating power</b>	
• at AC-3	
— at 400 V rated value	1 500 W
• at AC-43	
— at 400 V rated value	1 500 W
— at 500 V rated value	2 200 W
— at 690 V rated value	3 000 W
<b>No-load switching frequency</b>	3 600 1/h

<b>Operating frequency</b>	
<ul style="list-style-type: none"> <li>• at AC-41 acc. to IEC 60947-6-2 maximum</li> <li>• at AC-43 acc. to IEC 60947-6-2 maximum</li> </ul>	<p>750 1/h</p> <p>250 1/h</p>

### Control circuit/ Control

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

### Auxiliary circuit

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

### Protective and monitoring functions

<b>Trip class</b>	CLASS 10 and 20 adjustable
<b>Operational short-circuit current breaking capacity (Ics)</b>	
<ul style="list-style-type: none"> <li>• at 400 V</li> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>	<p>53 kA</p> <p>3 kA</p> <p>3 kA</p>

### UL/CSA ratings

<b>Full-load current (FLA) for three-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>	<p>4 A</p> <p>4 A</p>
<b>Yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for three-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> </ul> </li> </ul>	<p>0.75 hp</p> <p>0.75 hp</p>

— at 460/480 V rated value	2 hp
— at 575/600 V rated value	3 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

### Short-circuit protection

<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> </ul>	fuse gL/gG: 10 A
<ul style="list-style-type: none"> <li>• for short-circuit protection of the signaling switch of the short-circuit release required</li> </ul>	6A gL/gG/400V
<ul style="list-style-type: none"> <li>• for short-circuit protection of the signaling switch of the overload release required</li> </ul>	4A gL/gG/400V

### Installation/ mounting/ dimensions

<b>Mounting position</b>	any
<ul style="list-style-type: none"> <li>• recommended</li> </ul>	vertical, on horizontal standard mounting rail
<b>Mounting type</b>	screw and snap-on mounting
<b>Height</b>	170 mm
<b>Width</b>	45 mm
<b>Depth</b>	165 mm

### Connections/Terminals

<b>Product function</b>	
<ul style="list-style-type: none"> <li>• removable terminal for main circuit</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• removable terminal for auxiliary and control circuit</li> </ul>	Yes
<b>Type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>	plug-in without terminals
<ul style="list-style-type: none"> <li>• for auxiliary and control current circuit</li> </ul>	screw-type 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> </ul> </li> </ul>	2x (1.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>— finely stranded with core end processing</li> </ul>	2x (1.5 ... 6 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG conductors for main contacts</li> </ul>	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> </ul> </li> </ul>	0.5 ... 4 mm <sup>2</sup> , 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>— finely stranded with core end processing</li> </ul>	0.5 ... 2.5 mm <sup>2</sup> , 2x (0.5 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG conductors for auxiliary contacts</li> </ul>	2x (20 ... 14)

### Safety related data

<b>B10 value</b>	
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<ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>	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> </ul>	40 %
<ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>	50 %
<b>Failure rate [FIT]</b>	
<ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>	100 FIT
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y

### Communication/ Protocol

<b>Product function Bus communication</b>	No
<b>Protocol is supported</b>	
<ul style="list-style-type: none"> <li>• IO-Link protocol</li> </ul>	No
<b>Product function Control circuit interface with IO link</b>	No

### Electromagnetic compatibility

<b>Conducted interference</b>	
<ul style="list-style-type: none"> <li>• due to burst acc. to IEC 61000-4-4</li> </ul>	4 kV main contacts, 2 kV auxiliary contacts
<ul style="list-style-type: none"> <li>• due to conductor-earth surge acc. to IEC 61000-4-5</li> </ul>	4 kV main contacts, 2 kV auxiliary contacts
<ul style="list-style-type: none"> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> </ul>	2 kV main contacts, 1 kV auxiliary contacts
<ul style="list-style-type: none"> <li>• due to high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	0.15-80Mhz at 10V
<b>Field-bound parasitic coupling 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

### Supply voltage

<b>Supply voltage required Auxiliary voltage</b>	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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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[Confirmation](#)

## Further information

### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA6120-1CB33>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1CB33>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1CB33>

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

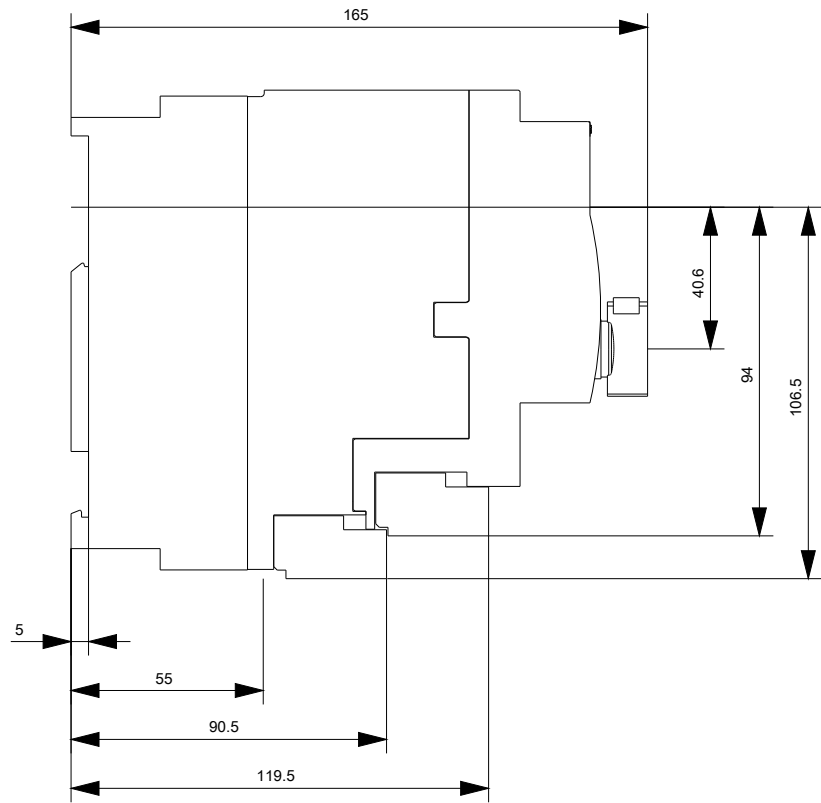
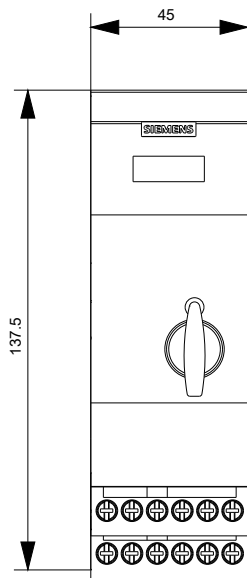
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RA6120-1CB33&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1CB33&lang=en)

### Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1CB33/char>

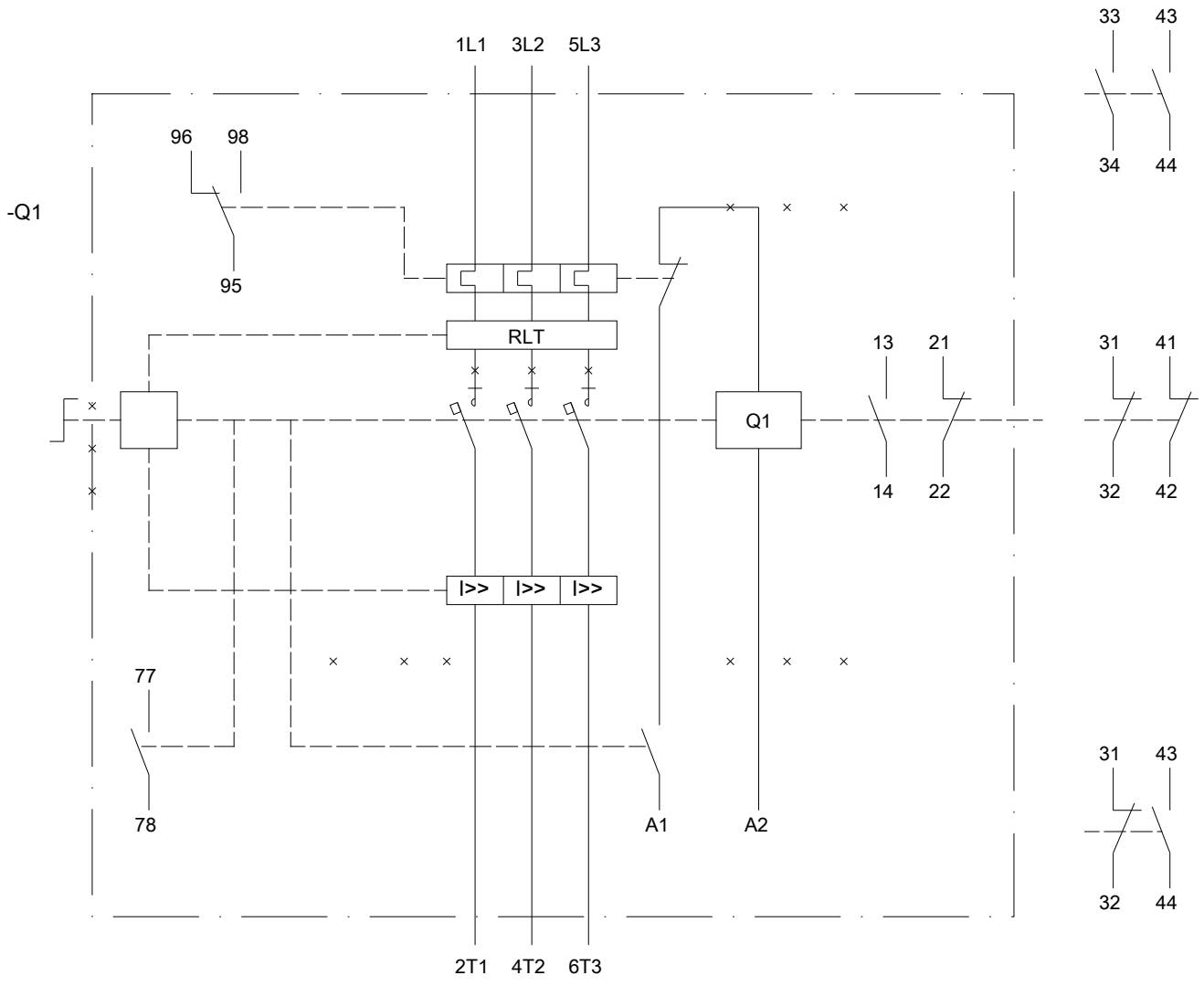
### Further characteristics (e.g. electrical endurance, switching frequency)

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1CB33&objecttype=14&gridview=view1>









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