

SIRIUS, COMPACT STARTER, DIRECT STARTER 690 V, 24 V AC/DC, 50 ... 60 HZ, 3 ... 12 A, IP20, CONNECTION MAIN CIRCUIT: PLUGGABLE, WITHOUT TERMINALS, CONNECTION AUXILIARY CIRCUIT: SCREW TERMINAL



Product brand name	SIRIUS
Product designation	compact starter
Design of the product	direct starter

General technical data	
<b>Product function</b>	
• Control circuit interface to parallel wiring	Yes
<b>Product extension</b>	
• Auxiliary switch	Yes
<b>Insulation voltage</b>	
• 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 auxiliary and auxiliary circuit	250 V
• between control and auxiliary circuit	300 V
• between main and auxiliary circuit	400 V
<b>Protection class IP</b>	IP20
<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>Equipment marking</b>	
• acc. to DIN EN 61346-2	Q
• acc. to DIN EN 81346-2	Q

<b>Ambient conditions</b>	
<b>Ambient temperature</b>	
• during operation	-20 ... +60 °C
• during storage	-55 ... +80 °C
• during transport	-55 ... +80 °C

<b>Main circuit</b>	
<b>Number of poles for main current circuit</b>	3
<b>Adjustable pick-up 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 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	5.5 kW
• at 500 V rated value	5.5 kW
• at 690 V rated value	7.5 kW
<b>Operating voltage</b>	
• at AC-3 rated value maximum	690 V
<b>Operating 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>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>	

<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	24 V 24 V
<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>	2.8 W 2.9 W

#### Auxiliary circuit

<b>Number of NC contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul>	1
<b>Number of NO contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts</li> <li>• of instantaneous short-circuit trip unit for signaling contact</li> </ul>	1 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>Off-delay time</b>	50 ms
<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>	53 kA 3 kA 3 kA

#### 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>	12 A 12 A
<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> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </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

Short-circuit protection	
<b>Product function Short circuit protection</b>	Yes
<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>	
<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>	

- 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

### Electromagnetic compatibility

**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

### Certificates/approvals

**General Product Approval**

**EMC**

**Functional Safety/Safety of Machinery**



CCC



CSA



UL



C-Tick



VDE

**Declaration of Conformity**

**Test Certificates**

**Marine / Shipping**



EG-Konf.

[Type Test Certificates/Test Report](#)



BUREAU VERITAS



DNV



LRS



PRS

**Marine / Shipping**

**other**



RINA



RMRS

[Environmental Confirmations](#)

[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=3RA6120-1DB33>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1DB33>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1DB33>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RA6120-1DB33&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1DB33&lang=en)





