

## Data sheet

## 3RA6120-1BB32



SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 0.32...1.25 A IP20 Connection main circuit: screw terminal Connection auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	compact starter
design of the product	direct starter
product type designation	3RA61
<b>General technical data</b>	
product function control circuit interface to parallel wiring	Yes
product extension auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	0.1 W
• at AC in hot operating state per pole	0.03 W
• without load current share typical	2.9 W
<b>insulation voltage rated value</b>	690 V
<b>degree of pollution</b>	3
<b>surge voltage resistance rated value</b>	6 000 V
<b>maximum permissible voltage for protective separation</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>	$a=60 \text{ m/s}^2$ (6g) with 10 ms per 3 shocks in all axes
<b>vibration resistance</b>	$f=4 \dots 5.8 \text{ Hz}$ , $d=15 \text{ mm}$ ; $f=5.8 \dots 500 \text{ Hz}$ , $a=20 \text{ m/s}^2$ ; 10 cycles
<b>mechanical service life (operating 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 (operating 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 coordination</b>	continuous operation according to IEC 60947-6-2
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	05/01/2012
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 Lead titanium zirconium oxide - 12626-81-2 6,6'-di-tert-butyl-2,2'-methylene-di-p-cresol - 119-47-1
<b>Net Weight</b>	1.49 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	

• during operation	-20 ... +60 °C
• during storage	-55 ... +80 °C
• during transport	-55 ... +80 °C
relative humidity during operation	10 ... 90 %
<b>Main circuit</b>	
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	0.32 ... 1.25 A
formula for making capacity limit current	$38.4 \times I_e$
formula for limit current breaking capacity	$32 \times I_e$
yielded mechanical performance for 4-pole AC motor	
• at 400 V rated value	0.37 kW
• at 500 V rated value	0.55 kW
• at 690 V rated value	0.75 kW
operating voltage at AC-3 rated value maximum	690 V
<b>operational current</b>	
• at AC at 400 V rated value	1.25 A
• at AC-3 at 400 V rated value	1.25 A
• at AC-43	
— at 400 V rated value	1.1 A
— at 500 V rated value	1.2 A
— at 690 V rated value	1.1 A
<b>operating power</b>	
• at AC-3 at 400 V rated value	0.37 kW
• at AC-43	
— at 400 V rated value	370 W
— at 500 V rated value	550 W
— at 690 V rated value	750 W
<b>no-load switching frequency</b>	3 600 1/h
<b>operating frequency</b>	
• 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
<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 50 Hz	24 ... 24 V
• at 60 Hz rated value	24 V
• at 60 Hz	24 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>control supply voltage 1 at DC rated value</b>	24 V
<b>control supply voltage 1 at DC</b>	24 ... 24 V
<b>holding power</b>	
• at AC maximum	2.8 W
• at DC maximum	2.9 W
<b>Auxiliary circuit</b>	
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
<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>operating short-circuit current breaking capacity (Ics)</b>	
• at 400 V rated value	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>	
• at 480 V rated value	1.25 A
• at 600 V rated value	1.25 A
yielded mechanical performance [hp] for 3-phase AC motor	
• at 460/480 V rated value	0.5 hp
• at 575/600 V rated value	0.5 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>	
• for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
• for short-circuit protection of the signaling switch of the short-circuit release required	6A gL/gG/400V
• for short-circuit protection of the signaling switch of the overload release required	4A gL/gG/400V
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>mounting position recommended</b>	vertical, on horizontal standard DIN rail
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	170 mm
<b>width</b>	45 mm
<b>depth</b>	165 mm
<b>Connections/ Terminals</b>	
<b>product component removable terminal for main circuit</b>	Yes
<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
<b>type of connectable conductor cross-sections for main contacts</b>	
• solid	2x (1.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
• finely stranded with core end processing	2x (1.5 ... 6 mm <sup>2</sup> )
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid	0.5 ... 4 mm <sup>2</sup> , 2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup> , 2x (0.5 ... 1.5 mm <sup>2</sup> )
• for AWG cables for auxiliary contacts	2x (20 ... 14)
<b>Safety related data</b>	
<b>proportion of dangerous failures</b>	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	50 %
<b>B10 value with high demand rate according to SN 31920</b>	3 000 000
<b>failure rate [FIT] with low demand rate according to SN 31920</b>	100 FIT
<b>IEC 61508</b>	
T1 value for proof test interval or service life according to IEC 61508	20 a
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe
<b>Communication/ Protocol</b>	
<b>product function bus communication</b>	No
<b>protocol is supported</b>	
• AS-Interface protocol	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 according to IEC 61000-4-4	4 kV main contacts, 2 kV auxiliary contacts
• due to conductor-earth surge according to IEC 61000-4-5	4 kV main contacts, 2 kV auxiliary contacts
• due to conductor-conductor surge according to IEC 61000-4-5	2 kV main contacts, 1 kV auxiliary contacts
• due to high-frequency radiation according to IEC 61000-4-6	0.15-80Mhz at 10V
<b>field-based interference according to IEC 61000-4-3</b>	10 V/m
<b>electrostatic discharge according to IEC 61000-4-2</b>	8 kV
<b>conducted HF interference emissions according to CISPR11</b>	150 kHz ... 30 MHz Class A
<b>field-bound HF interference emission according to CISPR11</b>	30 ... 1000 MHz Class A
<b>Supply voltage</b>	
<b>Supply voltage required Auxiliary voltage</b>	No
<b>Display</b>	
<b>number of LEDs</b>	2
<b>Approvals Certificates</b>	
<b>General Product Approval</b>	EMV

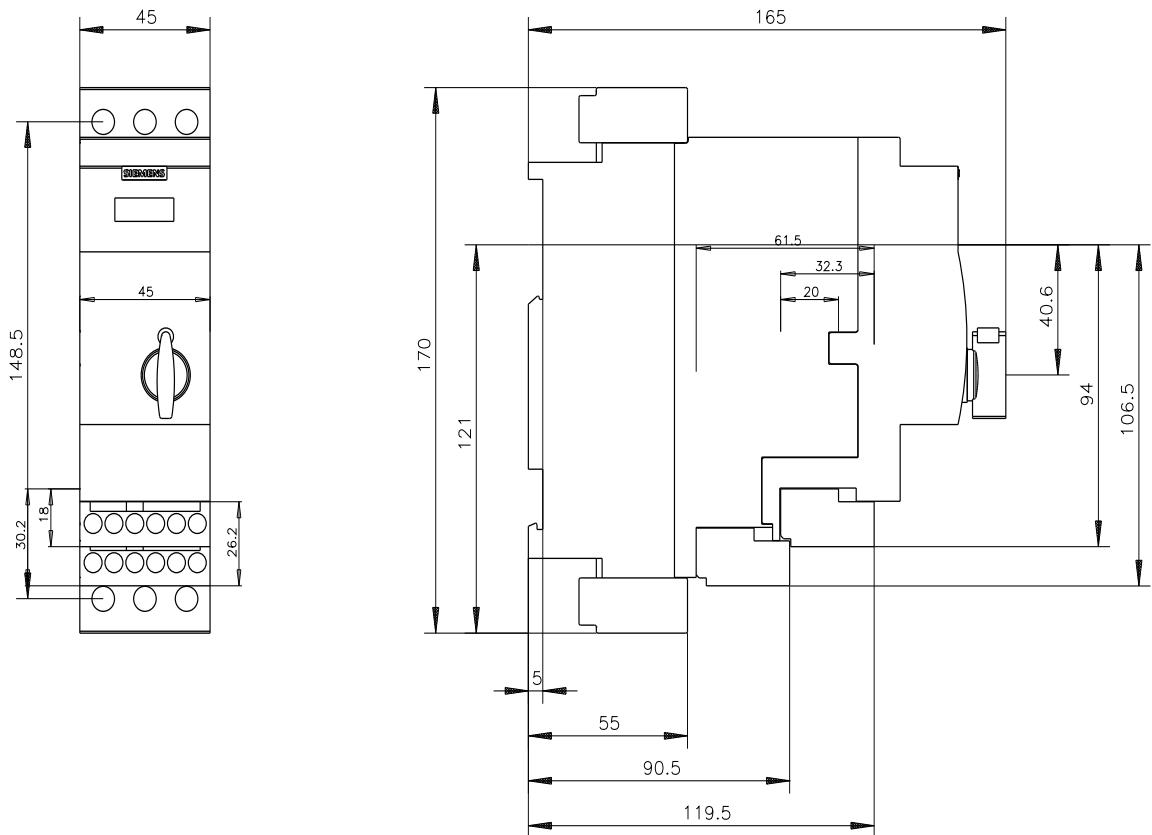


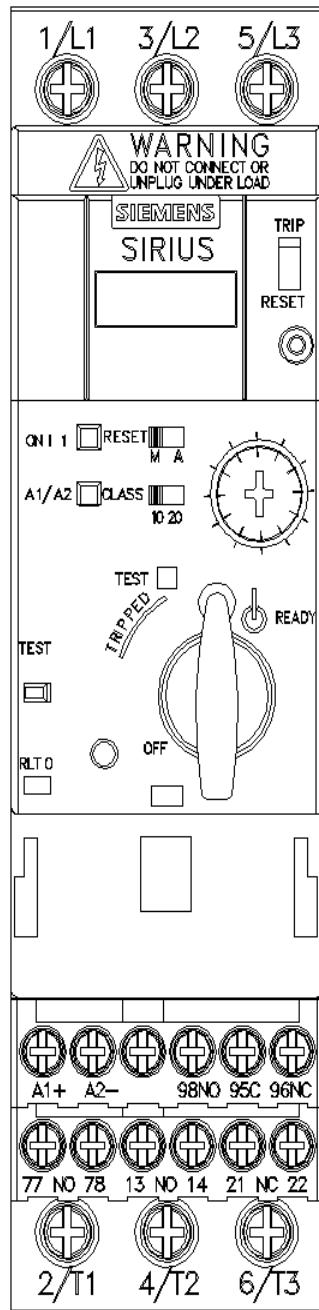
Functional Safety	Test Certificates	Maritime application	other	Dangerous goods
	<a href="#">Type Test Certificates/Test Report</a>			<a href="#">Confirmation</a> <a href="#">Transport Information</a>

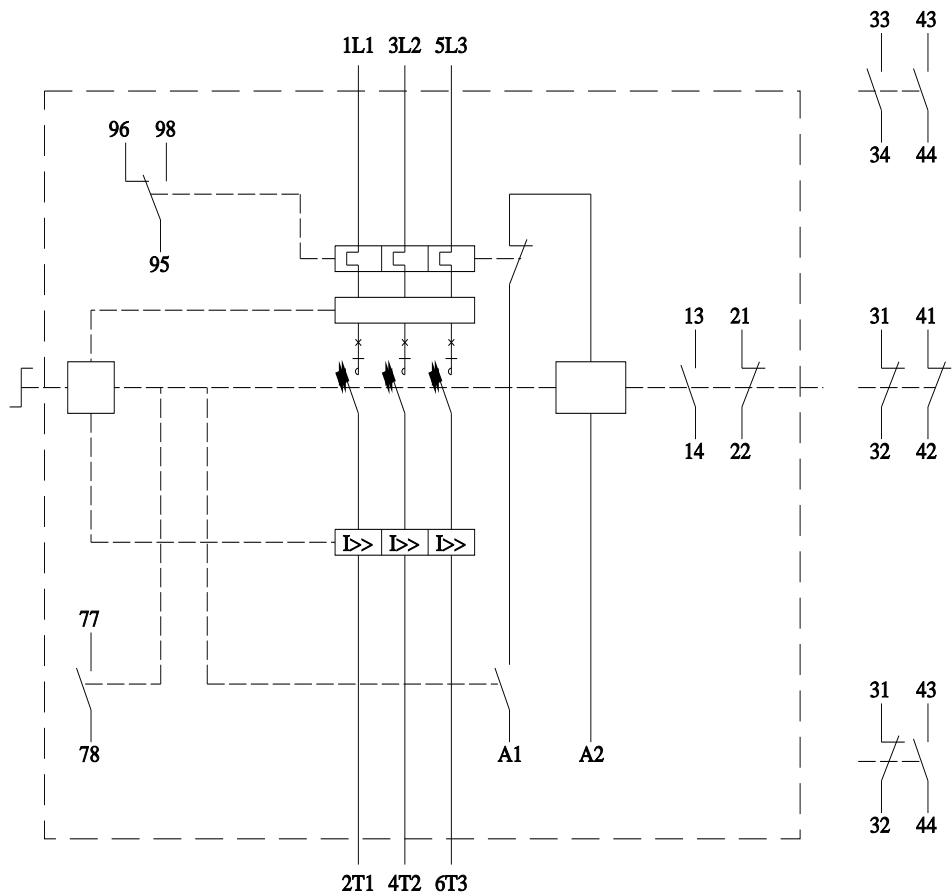
<b>Environment</b>
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[Environmental Confirmations](#)

<b>Further information</b>
Information on the packaging <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a>
Information for data generation and storage <a href="https://support.industry.siemens.com/cs/ww/en/view/109995012">https://support.industry.siemens.com/cs/ww/en/view/109995012</a>
Information- and Downloadcenter (Catalogs, Brochures,...) <a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a>
Industry Mall (Online ordering system) <a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA6120-1BB32">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA6120-1BB32</a>
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1BB32">https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1BB32</a>
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1BB32&amp;lang=en">https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1BB32&amp;lang=en</a>
Cax online generator <a href="https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&amp;mlfb=3RA6120-1BB32">https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&amp;mlfb=3RA6120-1BB32</a>
Characteristic curves <a haupt"&gt;&lt;="" href="https://curves.simaris.siemens.com/curves/&lt;mmp_prod_noCOMP=" mmp_prod_no&gt;"="">https://curves.simaris.siemens.com/curves/&lt;mmp_prod_noCOMP="HAUPT"&gt;&lt;/mmp_prod_no&gt;</a>







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