SIEMENS

Data sheet 3RA6120-1CB33



SIRIUS, COMPACT STARTER, DIRECT STARTER 690 V, 24 V AC/DC, 50 ... 60 HZ, 1 ... 4 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:	
Product function	
• Control circuit interface to parallel wiring	Yes
Insulation voltage	
• Rated value	690 V
maximum permissible voltage for safe isolation	
• between auxiliary and auxiliary circuit	250 V
• between control and auxiliary circuit	300 V
• between main and auxiliary circuit	400 V
Degree of pollution	3
Vibration resistance	f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s²; 10 cycles
Surge voltage resistance Rated value	6 000 V
Mechanical service life (switching cycles)	
• of the main contacts typical	10 000 000
• of the auxiliary contacts typical	10 000 000
• of the signaling contacts typical	10 000 000
Electrical endurance (switching cycles) of the auxiliary contacts	
• at DC-13 at 6 A at 24 V typical	100 000
• at AC-15 at 6 A at 230 V typical	500 000
Electrical endurance (switching cycles) of the signaling contacts	

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• at DC-13 at 6 A at 24 V typical	100 000
• at AC-15 at 6 A at 230 V typical	500 000
Type of assignment	continous operation according to IEC 60947-6-2
Protection class IP	IP20
Equipment marking	
• acc. to DIN EN 61346-2	Q

Main circuit:	
Number of poles for main current circuit	3
Adjustable response value current of the current-dependent overload release	1 ... 4 A
Formula for making capacity limit current	12 x Ie
Formula for interruption capacity limit current	10 x Ie
Mechanical power output for 4-pole AC motor	
• at 400 V Rated value	1.5 kW
• at 500 V Rated value	2.2 kW
• at 690 V Rated value	3 kW
Operating voltage	
• at AC-3 Rated value maximum	690 V
Operating current	
• with 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
Operating power	
• 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
Operating frequency	
• 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
No-load switching frequency	3 600 1/h

Control circuit/ Control:	
Type of voltage	AC
Control supply voltage 1 with AC	
• at 50 Hz Rated value	24 V
• at 60 Hz Rated value	24 V
Control supply voltage 1	
• for DC Rated value	24 V
• Rated value	50 Hz

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Control supply voltage frequency 2 Rated value	60 Hz
Holding power	
• with AC maximum	2.8 W
• for DC maximum	2.9 W
Auxiliary circuit:	
Number of NC contacts	
• for auxiliary contacts	1
Number of NO contacts	
• for auxiliary contacts	1
• of the instantaneous short-circuit release for signaling contact	1
Number of CO contacts	
• of the current-dependent overload release for signaling contact	1
Product expansion Auxiliary switch	Yes
Operating current of the auxiliary contacts at AC-12 maximum	10 A
Operating current of the auxiliary contacts at DC-13	
• at 250 V	0.27 A
Protective and monitoring functions:	
Trip class	CLASS 10 and 20 adjustable
OFF-delay time	50 ms
Operational short-circuit current breaking capacity (Ics)	
• 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 three-phase AC motor	
• at 480 V Rated value	4 A
• at 600 V Rated value	4 A
Contact rating of the auxiliary contacts acc. to UL	contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300
Short-circuit:	
Design of the fuse link	
• 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
Installation/ mounting/ dimensions:	

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mounting position	any
• recommended	vertical, on horizontal standard mounting rail
Mounting type	screw and snap-on mounting
Height	170 mm
Width	45 mm
Depth	165 mm

Connections/ Terminals:	
Product function	
• removable terminal for main circuit	Yes
• removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	
• for main current circuit	plug-in without terminals
• for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-section	
• for main contacts	
— solid	2x (1.5 ... 6 mm²), 1x 10 mm²
— finely stranded with core end processing	2x (1.5 ... 6 mm²)
• for AWG conductors for main contacts	2x (16 ... 10), 1x 8
• for auxiliary contacts	
— solid	0.5 ... 4 mm², 2x (0.5 ... 2.5 mm²)
— finely stranded with core end processing	0.5 ... 2.5 mm², 2x (0.5 ... 1.5 mm²)
• for AWG conductors for auxiliary contacts	2x (20 ... 14)

Safety related data:	
B10 value with high demand rate acc. to SN 31920	3 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	50 %
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe

Communication/ Protocol:	
Product function Bus communication	No

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 %

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Electromagnetic compatibility:	
Conducted interference due to burst acc. to IEC 61000-4-4	4 kV main contacts, 2 kV auxiliary contacts
Conducted interference due to conductor-earth surge acc. to IEC 61000-4-5	4 kV main contacts, 2 kV auxiliary contacts
Conducted interference due to conductor-conductor surge acc. to IEC 61000-4-5	2 kV main contacts, 1 kV auxiliary contacts
Conducted interference due to high-frequency radiation acc. to IEC 61000-4-6	0.15-80Mhz at 10V
Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	8 kV

Supply voltage:	
Supply voltage required Auxiliary voltage	No

Certificates/ approvals:

General Product Approval				EMC	Functional Safety/Safety of Machinery
CCC	CSA	UL	EAC	C-TICK	VDE

Test Certificates	Shipping Approval				
Type Test Certificates/Test Report	BUREAU VERITAS	DNV	LRS	PRS	RINA

Shipping Approval	other		
RMRS	Environmental Confirmations	Declaration of Conformity	other

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)
http://www.siemens.com/industrymall

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA61201CB33

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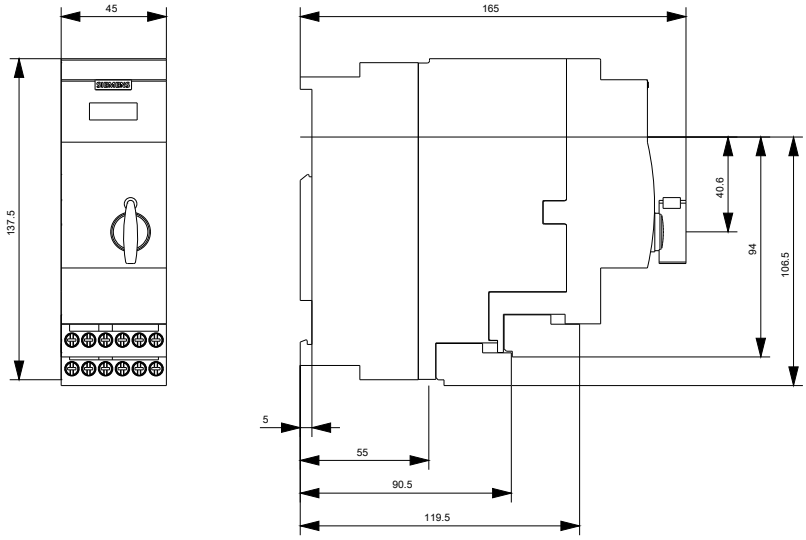
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RA61201CB33

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA61201CB33&lang=en



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