SIEMENS

Data sheet 3RA6120-1BB33

SIRIUS, COMPACT STARTER, DIRECT STARTER 690 V, 24 V AC/DC, 50 ... 60 HZ, 0.32 ... 1.25 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	V	690
maximum permissible voltage for safe isolation		
• between auxiliary and auxiliary circuit	V	250
• between control and auxiliary circuit	V	300
• between main and auxiliary circuit	V	400
Degree of pollution		3
Shock resistance		a=60 m/s2 (6g) with 10 ms per 3 shocks in all axes
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	V	6 000
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		
• 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	A	0.32 ... 1.25
Formula for making capacity limit current		38.4 x Ie
Formula for interruption capacity limit current		32 x Ie
Mechanical power output for 4-pole AC motor		
• at 400 V Rated value	kW	0.37
• at 500 V Rated value	kW	0.55
• at 690 V Rated value	kW	0.75
Operating voltage		
• at AC-3 Rated value maximum	V	690
Operating current		
• with AC at 400 V Rated value	A	1.25
• at AC-43		
— at 400 V Rated value	A	1.1
— at 500 V Rated value	A	1.2
— at 690 V Rated value	A	1.1
Operating power		
• at AC-3		
— at 400 V Rated value	W	370
• at AC-43		
— at 400 V Rated value	W	370
— at 500 V Rated value	W	550
— at 690 V Rated value	W	750
Operating frequency		
• at AC-41 acc. to IEC 60947-6-2 maximum	1/h	750
• at AC-43 acc. to IEC 60947-6-2 maximum	1/h	250
No-load switching frequency	1/h	3 600

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

Control supply voltage 1		
• for DC Rated value	V	24
• Rated value	Hz	50
Control supply voltage frequency 2 Rated value	Hz	60
Holding power		
• with AC maximum	W	2.8
• for DC maximum	W	2.9
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	A	10
Operating current of the auxiliary contacts at DC-13		
• at 250 V	A	0.27
Protective and monitoring functions:		
Trip class		CLASS 10 and 20 adjustable
OFF-delay time	ms	50
Operational short-circuit current breaking capacity (Ics)		
• at 400 V	kA	53
• at 500 V Rated value	kA	3
• at 690 V Rated value	kA	3
UL/CSA ratings:		
Full-load current (FLA) for three-phase AC motor		
• at 480 V Rated value	A	1.25
• at 600 V Rated value	A	1.25
yielded mechanical performance [hp]		
• for three-phase AC motor at 460/480 V Rated value	metric hp	0.5
• for three-phase AC motor at 575/600 V Rated value	metric hp	0.5
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:		

Product function Short circuit protection		Yes
Design of short-circuit protection		electromagnetic
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:

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

Connections/ Terminals:

Type of electrical connection		
• for main current circuit		plug-in without terminals
• for auxiliary and control current circuit		screw-type terminals
Product function		
• removable terminal for main circuit		Yes
• removable terminal for auxiliary and control circuit		Yes
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
Failure rate [FIT] with low demand rate acc. to SN 31920	FIT	100
T1 value for proof test interval or service life acc. to IEC 61508	y	20

Protection against electrical shock		finger-safe
Communication/ Protocol:		
Product function Bus communication		No
Product function Control circuit interface with IO link		No
Ambient conditions:		
Installation altitude at height above sea level maximum	m	2 000
Ambient temperature		
• during operation	°C	-20 ... +60
• during storage	°C	-55 ... +80
• during transport	°C	-55 ... +80
Relative humidity during operation	%	10 ... 90
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		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

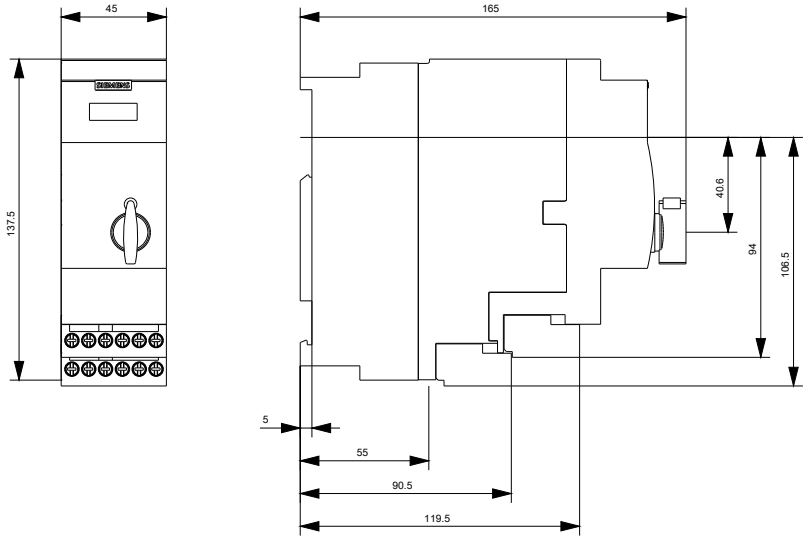
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

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=3RA61201BB33

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3RA61201BB33/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA61201BB33&lang=en



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