SIEMENS

Product data sheet 3RA6120-1DE33

SIRIUS, COMPACT STARTER,
DIRECT STARTER 690 V,
42 ... 70 V AC/DC, 50 ... 60 HZ,
3 ... 12 A, IP20,
CONNECTION MAIN CIRCUIT: PLUGGABLE,
WITHOUT TERMINALS,
CONNECTION AUXILIARY CIRCUIT: SCREW TERMINAL

General technical data:		
product brand name		SIRIUS
product designation		compact starter
Design of the product		direct starter
Trip class		CLASS 10 and 20 adjustable
Product function		
• control circuit interface to parallel wiring		Yes
• bus-communication		No
• short circuit protection		Yes
• control circuit interface with IO link		No
Type of assignement		continous operation according to IEC 60947-6-2
Protection class IP		IP20
Degree of pollution		3
mounting position / recommended		vertical, on horizontal standard mounting rail
Installation altitude / at a height over sea level		
• maximum	m	2,000
Ambient temperature		
• during storage	°C	-55 … +80
• during operating	°C	-20 … +60
• during transport	°C	-55 … +80

Relative humidity		
• during operating phase	%	10 … 90
Resistance against shock		a=60 m/s2 (6g) with 10 ms per 3 shocks in all axes
Resistance against vibration		f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s²; 10 cycles
Impulse voltage resistance / rated value	V	6,000
Field-bound parasitic coupling		
• according to IEC 61000-4-3		10 V/m
Insulation voltage / rated value	V	690
Conductor-bound parasitic coupling conductor-earth SURGE		
• according to IEC 61000-4-5		4 kV main contacts, 2 kV auxiliary contacts
Conductor-bound parasitic coupling conductor-conductor SURGE		
• according to IEC 61000-4-5		2 kV main contacts, 1 kV auxiliary contacts
Conductor-bound parasitic coupling BURST		
• according to IEC 61000-4-4		4 kV main contacts, 2 kV auxiliary contacts
Maximum permissible voltage for safe disconnection		
• between main circuit and auxiliary circuit	V	400
• between control and auxiliary circuit	V	300
• between auxiliary circuit and auxiliary circuit	V	250
Item designation		
• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750		Q
• according to DIN EN 61346-2		Q

Main circuit:		
Operating voltage / at AC-3 / rated value		
• maximum	V	690
Number of poles / for main current circuit		3
Adjustable response current		
• of the current-dependent overload release	A	3 … 12
Formula for making capacity limit current		12 x Ie
Formula for interruption capacity limit current		10 x Ie
Emitted mechanical power / for 4-pole three-phase motor		
• at 400 V / rated value	kW	5.5
• at 500 V / rated value	kW	5.5
• at 690 V / rated value	kW	7.5
Service power / at AC-3 / at 400 V / rated value	kW	5.5
Frequency of operation / at AC-41 / according to IEC 60947-6-2 / maximum	1/h	750
Frequency of operation / at AC-43 / according to IEC 60947-6-2 / maximum	1/h	250

Off-load operating frequency	1/h	3,600
Mechanical operating cycles as operating time		
• of the main contacts / typical		10,000,000
• of the auxiliary contacts / typical		10,000,000
• of the signal contacts / typical		10,000,000

Control circuit:

type of voltage		AC
Control supply voltage / 1		
• for DC		
• initial rated value	V	42
• final rated value	V	70
• at 50 Hz / for AC		
• initial rated value	V	42
• final rated value	V	70
• at 60 Hz / for AC		
• initial rated value	V	42
• final rated value	V	70
Holding power		
• for AC / maximum	W	3.1
• for DC / maximum	W	2.2
Switch-off delay time	ms	50
Start-up delay time	ms	70

Auxiliary circuit:

Product extension		
• auxiliary switch		Yes
Number of NC contacts		
• for auxiliary contacts		1
Number of NO contacts		
• for auxiliary contacts		1
• of the non-delayed short-circuit release / for alarm contact		1
Number of changeover contacts / of the current-dependent overload release / for alarm contact		1
Operating current / of the auxiliary contacts / at AC-12		
• maximum	A	10
Electrical switching cycle as operating time / of the auxiliary contacts		
• at AC-15 / at 6 A / at 230 V / typical		500,000
• at DC-13 / at 6 A / at 24 V / typical		100,000

Electrical switching cycle as operating time / of the signal contacts		
• at AC-15 / at 6 A / at 230 V / typical		500,000
• at DC-13 / at 6 A / at 24 V / typical		100,000
Short-circuit:		
Design of the fuse link / for short-circuit protection of the auxiliary switch		
• required		fuse gL/gG: 10 A
Installation/mounting/dimensions:		
Type of mounting		screw and snap-on mounting
Width	mm	45
Height	mm	170
Depth	mm	165
mounting position		any
Connections:		
Product function		
• removable terminal for main circuit		Yes
• removable terminal for auxiliary and control circuit		Yes
Design of the electrical connection		
• for main current circuit		plug-in without terminals
• for auxiliary and control current circuit		screw-type terminals
Type of the connectable conductor cross-section		
• for main contacts		
• solid		2x (1.5 ... 6 mm²), 1x 10 mm²
• finely stranded		
• with conductor end processing		2x (1.5 ... 6 mm²)
• for auxiliary contacts		
• solid		0.5 ... 4 mm², 2x (0.5 ... 2.5 mm²)
• finely stranded		
• with conductor end processing		0.5 ... 2.5 mm², 2x (0.5 ... 1.5 mm²)
• for AWG conductors		
• for main contacts		2x (16 ... 10), 1x 8
• for auxiliary contacts		2x (20 ... 14)
Certificates/approvals:		
Verification of suitability		IEC / EN 60947-6-2

General Product Approval				EMC	Functional Safety / Safety of Machinery
CCC	CSA	GOST	UL	C-TICK	other

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

other		
Declaration of Conformity	other	Environmental Confirmations

UL/CSA ratings:

yielded mechanical performance (hp) / for three-phase squirrel cage motors		
• at 200/208 V / rated value	hp	3
• at 220/230 V / rated value	hp	3
• at 460/480 V / rated value	hp	7.5
• at 575/600 V / rated value	hp	10
Operating current (FLA) / for three-phase squirrel cage motors		
• at 480 V / rated value	A	12
• at 600 V / rated value	A	12
Contact rating designation / for auxiliary contacts / according to UL		contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300

Reliability figures:

B10 value		3,000,000
Proportion of dangerous failures	%	50
Proportion of dangerous failures / with low demand rate / according to SN 31920	%	40
Protection against electrical shock		finger-safe
Failure rate (FIT value) / with low demand rate / according to SN 31920	FIT	100

Further information:

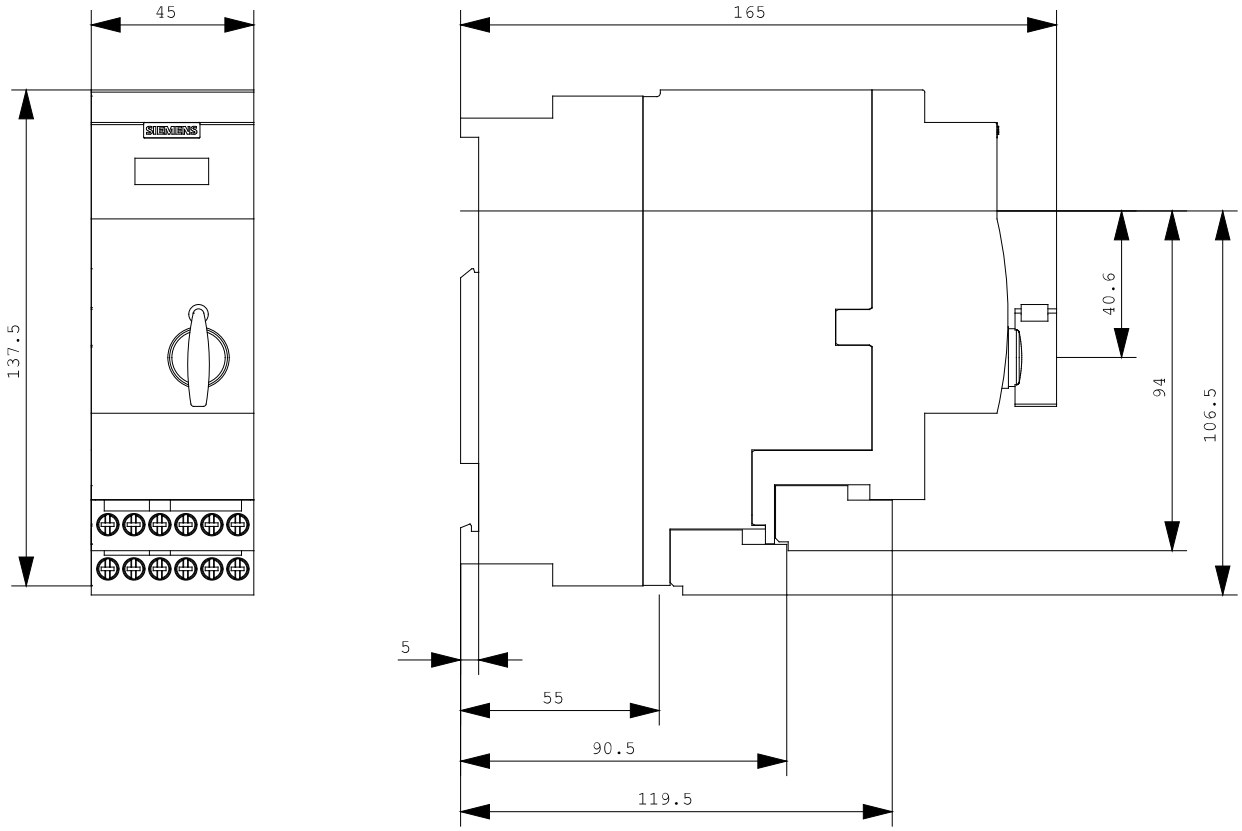
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

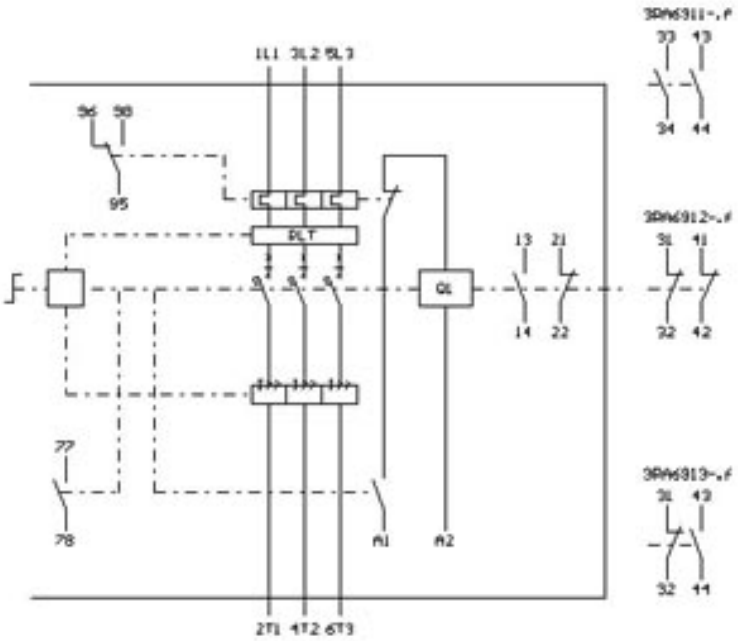
Industry Mall (Online ordering system)
http://www.siemens.com/industrial-controls/mall

Cax online generator:
http://www.siemens.com/cax

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
http://support.automation.siemens.com/WW/view/en/3RA6120-1DE33/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RA6120-1DE33





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