SIEMENS

Data sheet

3RA6120-1BB33



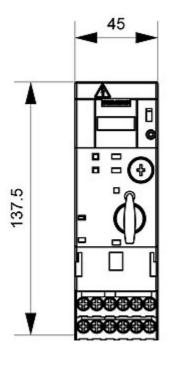
SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 0.32...1.25 A IP20 Connection main circuit: plug-in, without terminals Connection auxiliary circuit: screw terminal

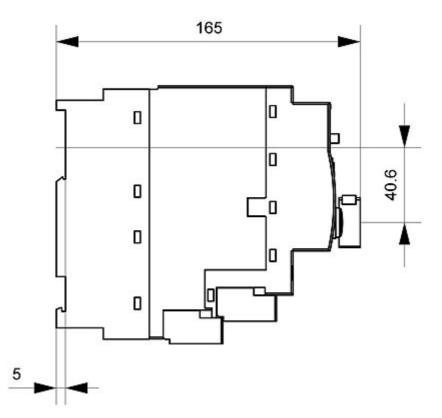
product brand name	SIRIUS			
product designation	compact starter			
design of the product	direct starter			
product type designation	3RA61			
General technical data				
product function control circuit interface to parallel wiring	Yes			
product extension auxiliary switch	Yes			
power loss [W] for rated value of the current at AC in hot operating state	0.1 W			
• per pole	0.03 W			
power loss [W] for rated value of the current without load current share typical	2.9 W			
insulation voltage rated value	690 V			
degree of pollution	3			
surge voltage resistance rated value	6 000 V			
maximum permissible voltage for safe isolation				
 between main and auxiliary circuit 	400 V			
 between auxiliary and auxiliary circuit 	250 V			
 between control and auxiliary circuit 	300 V			
degree of protection NEMA rating	other			
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			
mechanical service life (switching cycles)				
 of the main contacts typical 	10 000 000			
 of auxiliary contacts typical 	10 000 000			
 of the signaling contacts typical 	10 000 000			
electrical endurance (switching cycles) of auxiliary contacts				
 at DC-13 at 6 A at 24 V typical 	30 000			
• at AC-15 at 6 A at 230 V typical	200 000			
type of assignment	continous operation according to IEC 60947-6-2			
reference code acc. to IEC 81346-2	Q			
Substance Prohibitance (Date)	01.05.2012 00:00:00			
Ambient conditions				
installation altitude at height above sea level maximum	2 000 m			
 ambient temperature during operation 	-20 +60 °C			
 ambient temperature during storage 	-55 +80 °C			
 ambient temperature during transport 	-55 +80 °C			

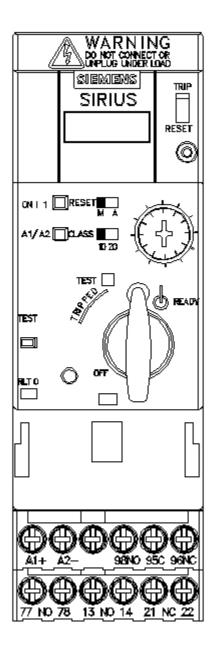
relative humidity during operation	10 90 %		
Main circuit	10		
number of poles for main current circuit	3		
adjustable current response value current of the	3 0.32 1.25 A		
current-dependent overload release	0.52 1.25 A		
formula for making capacity limit current	38.4 x le		
formula for breaking capacity limit current	32 x le		
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		
operational current			
 at AC 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		
operating power			
at AC-3 at 400 V rated value	370 W		
• at AC-43			
— at 400 V rated value	370 W		
— at 500 V rated value	550 W		
— at 690 V rated value	750 W		
no-load switching frequency	3 600 1/h		
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		
Control circuit/ Control			
Type of voltage			
type of voltage control supply voltage 1 at AC	AC/DC		
control supply voltage 1 at AC			
• at 50 Hz rated value	24 V		
 control supply voltage 1 at AC at 50 Hz rated value at 60 Hz rated value 			
• at 50 Hz rated value	24 V 24 V		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value	24 V 24 V 50 Hz		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value	24 V 24 V		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1	24 V 24 V 50 Hz 60 Hz		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value	24 V 24 V 50 Hz		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value	24 V 24 V 50 Hz 60 Hz 24 V		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W		
 control supply voltage 1 at AC at 50 Hz rated value at 60 Hz rated value control supply voltage frequency 1 rated value 2 rated value control supply voltage 1 at DC rated value holding power at AC maximum at DC maximum 	24 V 24 V 50 Hz 60 Hz 24 V		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at AC maximum • at DC maximum • at DC maximum	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at AC maximum • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12 maximum	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12 maximum	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at DC-13 at 250 V	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at DC-13 at 250 V Protective and monitoring functions	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1 1 1 1 1 2 1 2 2 3 2 3 2 3		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact number of CO contacts of the current-dependent overload release for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at DC-13 at 250 V	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1 1 1 1 1 2 1 2 2 3 2 3 2 3		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value holding power • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at AC-13 at 250 V Protective and monitoring functions trip class breaking capacity operating short-circuit current (Ics)	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 8 W 2.9 W		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at DC-13 at 250 V Protective and monitoring functions trip class breaking capacity operating short-circuit current (lcs) • at 400 V	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency • 1 rated value • 2 rated value • at DC rated value control supply voltage 1 • at DC rated value holding power • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact operational current of auxiliary contacts at AC-12 maximum operational current of auxiliary contacts at DC-13 at 250 V Protective and monitoring functions trip class breaking capacity operating short-circuit current (Ics) • at 400 V • at 500 V rated value	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 1 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA 3 kA		

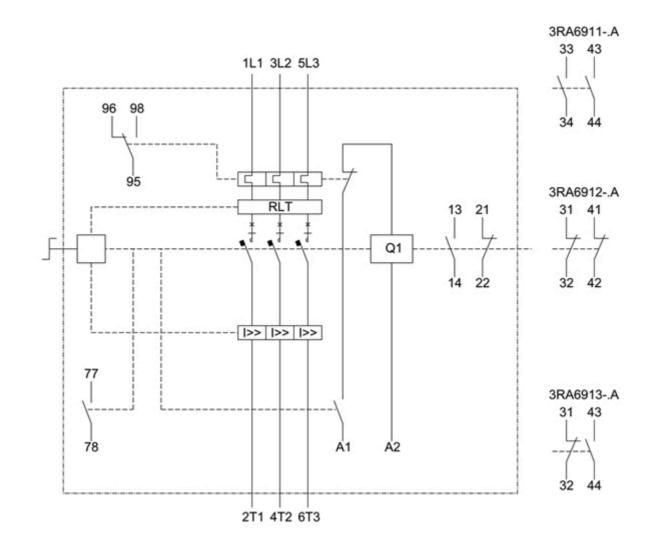
full load ourrant (ELA) for 2 phase AC motor				
full-load current (FLA) for 3-phase AC motor • at 480 V rated value	1.25 A			
tat 600 V rated value	1.25 A			
yielded mechanical performance [hp] for 3-phase AC motor				
• at 460/480 V rated value	0.5 hp			
• at 575/600 V rated value	0.5 hp			
contact rating of 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			
Short-circuit protection				
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			
fastening method	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 circuit 	screw-type terminals			
type of connectable conductor cross-sections				
 for main contacts 				
— solid	2x (1.5 6 mm²), 1x 10 mm²			
 finely stranded with core end processing 	2x (1.5 6 mm²)			
 at AWG cables for main contacts 	2x (16 10), 1x 8			
type of connectable conductor cross-sections				
 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)			
 at AWG cables 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	100 FIT			
T1 value for proof test interval or service life acc. to IEC 61508	20 у			
protection class IP on the front acc. to IEC 60529	IP20			
touch protection on the front acc. to IEC 60529	finger-safe			
Communication/ Protocol				
product function bus communication	No			
protocol is supported				
AS-Interface protocol	No			
IO-Link protocol	No			
product function control circuit interface with IO link	No			

Electromagnetic compatibility					
conducted interference					
• due to burst acc. to IEC 61000-4-4		4 kV main contacts, 2	kV auxiliary contacts		
due to conductor-earth surge acc. to IEC	C 61000-4-5		-		
 due to conductor-conductor surge acc. to IEC 61000-4-5 		4 kV main contacts, 2 kV auxiliary contacts 2 kV main contacts, 1 kV auxiliary contacts			
 due to high-frequency radiation acc. to IEC 61000- 4-6 		0.15-80Mhz at 10V			
field-based interference acc. to IEC 61000-4-3		10 V/m			
electrostatic discharge acc. to IEC 61000-4	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			
Display					
number of LEDs		2			
Certificates/ approvals					
General Product Approval			EMC	Functional Safety/Safety of Machinery	
	Ű	EHC			
Declaration of Conformity Test Certificates Marine / Shipping					
Miscellaneous EG-Konf.	<u>Type Test</u> <u>Certificates/T</u> <u>Report</u>		BUREAU VERITAS	Llovd's Register us	
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PRS RINA	KMRS	DNV-GL DNV-GL	<u>Confirmation</u>		
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