SIEMENS

Data sheet

3RA6120-1AB33



SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 0.1...0.4 A IP20 Connection main circuit: plug-in, without terminals Connection auxiliary circuit: screw terminal

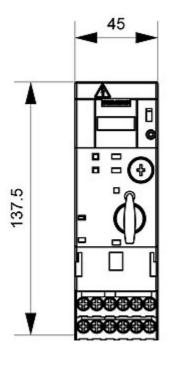
product brand name	SIRIUS
product designation	compact starter
design of the product	direct starter
product type designation	3RA61
General technical data	
product function control circuit interface to parallel wiring	Yes
product extension auxiliary switch	Yes
power loss [W] for rated value of the current at AC in hot operating state	0.01 W
• per pole	0.01 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

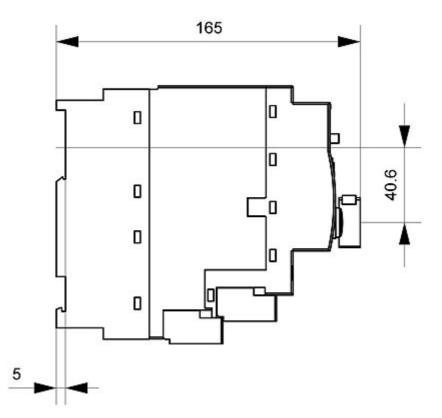
relative humidity during operation	10 90 %	
Main circuit		
number of poles for main current circuit	3	
adjustable current response value current of the	0.1 0.4 A	
current-dependent overload release	0.10.7	
formula for making capacity limit current	120 x le	
formula for breaking capacity limit current	100 x le	
yielded mechanical performance for 4-pole AC motor		
 at 400 V rated value 	0.09 kW	
• at 500 V rated value	0.12 kW	
• at 690 V rated value	0.18 kW	
 operating voltage at AC-3 rated value maximum 	690 V	
operational current		
 at AC at 400 V rated value 	0.4 A	
• at AC-43		
— at 400 V rated value	0.3 A	
— at 500 V rated value	0.32 A	
— at 690 V rated value	0.35 A	
operating power		
• at AC-3 at 400 V rated value	90 W	
• at AC-43		
— at 400 V rated value	90 W	
— at 500 V rated value	120 W	
— at 690 V rated value	180 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		
to we all the second seco		
type of voltage	AC/DC	
control supply voltage 1 at AC	AC/DC	
	AC/DC 24 V	
 control supply voltage 1 at AC at 50 Hz rated value at 60 Hz rated value 		
control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value control supply voltage frequency	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 • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power	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	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 • 1 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at DC 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 DC maximum • at DC maximum	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 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 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 AC maximum • at DC rated value	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.8 W 2.9 W	
control supply voltage 1 at AC e at 60 Hz rated value e 1 rated value e 2 rated value e at DC rated value holding power e at AC maximum e at DC rated value holding power e at DC maximum mumber of NC contacts for auxiliary contacts number of NO 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 AC maximum • at DC rated value	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 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 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	
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 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	
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 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	
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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 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 trip class	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 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 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 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 1 1 1 1 1 1 2 2 2 2 3 2 3	
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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 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 operational current of auxiliary contacts at AC-12 maximum 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 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 • 2 rated value • 2 rated value control supply voltage 1 • at DC rated value holding power • at AC maximum • at DC maximum • at DC maximum Auxiliary circuit 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 trip class breaking capacity operating short-circuit current (lcs) • 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	

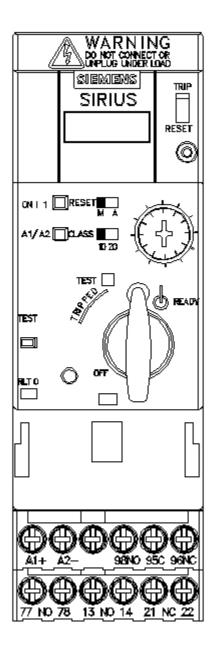
full-load current (FLA) for 3-phase AC motor				
 at 480 V rated value 	0.4 A			
at 600 V rated value	0.4 A			
contact rating of auxiliary contacts according to UL	contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300			
Short-circuit protection				
product 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 mm ²)			
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 burst acc. to IEC 01000-4-4 due to conductor-earth surge acc. to IEC 61000-4-5 	4 kV main contacts, 2 kV auxiliary contacts			
	The main contacto, 2 he durindry contacto			

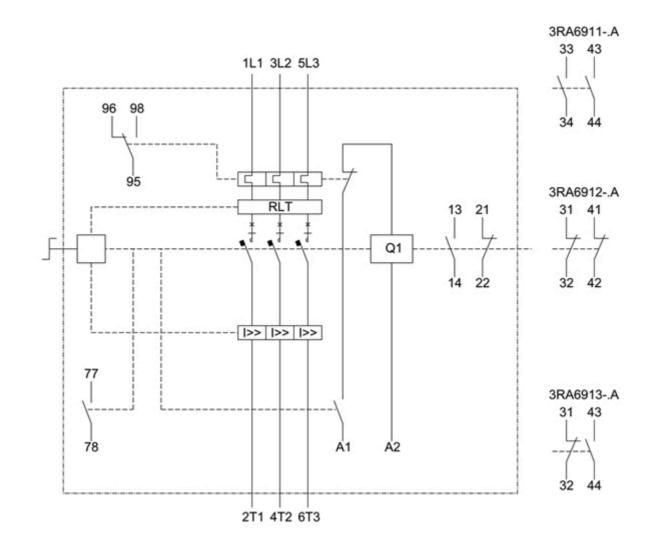
• due to conductor-conductor surge acc. to IEC 61000-4-5		2 kV main contacts, 1 kV auxiliary contacts					
 due to high-frequency radiation acc. to IEC 61000- 4-6 		0.15-80Mhz at 10V					
field-based interference acc. to IEC 61000-4-3		10 V/m					
electrostatic discharge acc. to IEC 61000-4-2		8 kV					
conducted HF interference emissions acc. to CISPR11		150 kHz 30 MHz C	lass A				
field-bound HF interference emission acc. to CISPR11			30 1000 MHz Class A				
Supply voltage							
	uired Auxiliary voltage	<u> </u>	No				
Display	, carrier and a second s						
number of LEDs			2				
Certificates/ approva	ls		-				
General Product A	pproval			EMC	Functional Safety/Safety of Machinery		
(SP) CEA		UL u	EAC	RCM	UDE VDE		
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	Characteristic: Tripping characteristics, I ² t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AB33/char						

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1AB33&objecttype=14&gridview=view1









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