SIEMENS

Data sheet

3RA6120-1DP32



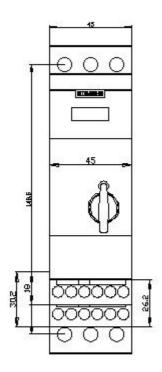
SIRIUS Compact load feeder DOL starter 690 V 110...240 V AC/DC 50...60 Hz 3...12 A IP20 Connection main circuit: screw terminal Connection auxiliary circuit: screw terminal

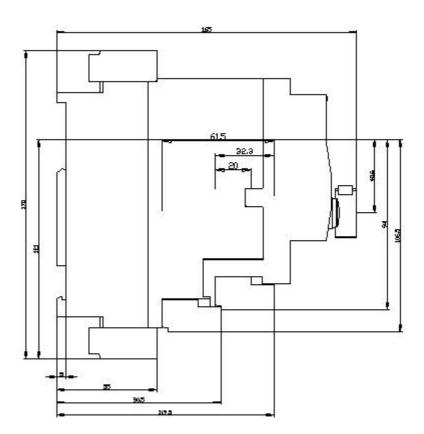
product brand name	SIRIUS			
product designation	compact starter			
design of the product	direct starter			
product type designation	3RA61			
General technical data				
product function control circuit interface to parallel wiring	Yes			
product extension auxiliary switch	Yes			
power loss [W] for rated value of the current at AC in hot operating state	1.8 W			
• per pole	0.6 W			
power loss [W] for rated value of the current without load current share typical	6 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			
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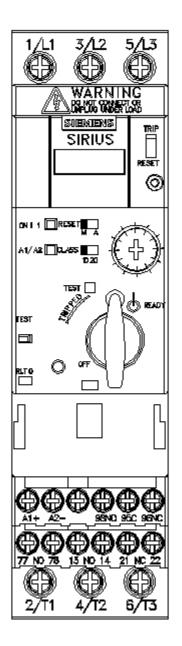
relative humidity during operation	10 90 %
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the	3 12 A
current-dependent overload release	5 12 A
formula for making capacity limit current	12 x le
formula for breaking capacity limit current	10 x le
yielded mechanical performance for 4-pole AC motor	
• at 400 V rated value	5.5 kW
• at 500 V rated value	5.5 kW
• at 690 V rated value	7.5 kW
 operating voltage at AC-3 rated value maximum 	690 V
operational current	
 at AC at 400 V rated value 	12 A
• at AC-43	
— at 400 V rated value	11.5 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
operating power	
• at AC-3 at 400 V rated value	5.5 kW
• at AC-43	
— at 400 V rated value	5 500 W
— at 500 V rated value	5 500 W
— at 690 V rated value	7 500 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	AC/DC
control supply voltage 1 at AC	
• at 50 Hz	110 240 V
ontrol supply voltage 1 at AC • at 50 Hz • at 60 Hz	
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency	110 240 V 110 240 V
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value	110 240 V 110 240 V 50 Hz
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value	110 240 V 110 240 V
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1	110 240 V 110 240 V 50 Hz 60 Hz
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC	110 240 V 110 240 V 50 Hz
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at AC maximum	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at AC maximum • at DC maximum	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at AC maximum • at DC maximum • at DC maximum	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at AC maximum • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at DC maximum • at DC contacts for auxiliary contacts number of NC contacts for auxiliary contacts	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC holding power • at AC maximum • at DC maximum • at DC maximum • at DC contacts for auxiliary contacts	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1
control supply voltage 1 at AC • at 50 Hz • at 60 Hz • 1 rated value • 2 rated value control supply voltage 1 • at DC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1
control supply voltage 1 at AC at 60 Hz 1 rated value • 2 rated value control supply voltage 1 • at DC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC 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 maximum	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 1 1 1 1
• at 50 Hz • at 60 Hz • 1 rated value • 2 rated value control supply voltage 1 • at DC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 0 A 0.27 A
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC 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 trip class	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 1 1 1 1
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 0 A 0.27 A
control supply voltage 1 at AC at 60 Hz 1 rated value at DC at DC 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 (Ics)	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 1 1 1 1 2 CLASS 10 and 20 adjustable
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value control supply voltage 1 • at DC 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 DC-13 at 250 V Protective and monitoring functions trip class breaking capacity operating short-circuit current (lcs) • at 400 V	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA
control supply voltage 1 at AC • at 50 Hz • at 60 Hz control supply voltage frequency • 1 rated value • 2 rated value • 2 rated value control supply voltage 1 • at DC 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 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 6 W 5.1 W 1 1 1 1 1 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA 3 kA

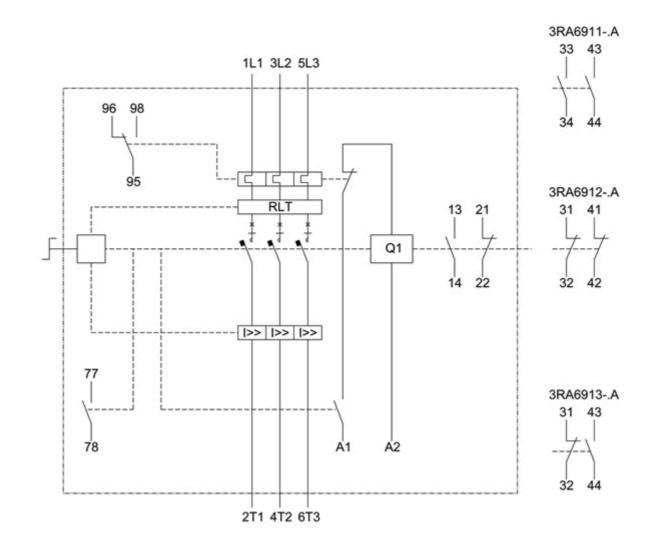
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full-load current (FLA) for 3-phase AC motor			
 at 480 V rated value 	12 A		
at 600 V rated value	12 A		
yielded mechanical performance [hp] for 3-phase AC motor			
 at 200/208 V rated value 	3 hp		
 at 220/230 V rated value 	3 hp		
 at 460/480 V rated value 	7.5 hp		
• at 575/600 V rated value	10 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	screw-type terminals		
 for auxiliary and control circuit 	screw-type terminals		
type of connectable conductor cross-sections			
for main contacts			
— solid	$2x (1.5 - 6 \text{ mm}^2) 1x 10 \text{ mm}^2$		
 — finely stranded with core end processing 	$2x (1.5 6 mm^2), 1x 10 mm^2$		
at AWG cables for main contacts	2x (1.5 6 mm²) 2x (16 10), 1x 8		
type of connectable conductor cross-sections			
51			
 for auxiliary contacts — solid 	$0.5 \ 4 \ \text{mm}^2 \ 2 \text{v} \ (0.5 \ 2.5 \ \text{mm}^2)$		
	$0.5 \dots 4 \text{ mm}^2$, $2x (0.5 \dots 2.5 \text{ mm}^2)$		
 finely stranded with core end processing at AWG cables for auxiliany contacts 	0.5 2.5 mm ² , 2x (0.5 1.5 mm ²)		
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	10.04		
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 y -		
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 a	uxiliary contacts			
 due to conductor-earth surge acc 	• due to conductor-earth surge acc. to IEC 61000-4-5		4 kV main contacts, 2 kV auxiliary contacts			
• 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 emission		150 kHz 30 MHz Class A				
field-bound HF interference emission	ce emission acc. to CISPR11 30 1000 MHz Class A					
Supply voltage						
Supply voltage required Auxiliary vo	Itage	No				
Display						
number of LEDs		2				
Certificates/ approvals						
General Product Approval			EMC	Functional Safety/Safety of Machinery		
	ų, "	EHC	RCM	UDE VDE		
Declaration of Conformity Miscellaneou EG-Konf.	Test Certifica <u>S</u> <u>Type Tes</u> <u>Certificates/T</u> <u>Report</u>	<u>t</u>	BUREAU VERITAS	Lloyds Register LRS		
Marine / Shipping			other			
PRS RINA	RMRS	DNV-GL EMISLCORE	<u>Confirmation</u>			
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,) <u>http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1DP32⟨=en</u> Characteristic: Tripping characteristics, I ² t, Let-through current						
https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1DP32/char						
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1DP32&objecttype=14&gridview=view1						









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