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 product designation compact starter design of the product product type designation General technical data product function control circuit interface to parallel wiring product extension auxiliary switch early for rated value of the current early for rated value degree of pollution surge vortage rasistance rated value degree of pollution surge vortage resistance rated value early for rated value early for rated value early for production surger value early for production surger value early for production value rated value early for production value rat		
design of the product product type designation 3RA61 General technical data product function control circuit interface to parallel wiring at AC in hot operating state at AC in hot operating state at AC in hot operating state per pole without load current share typical aurye voltage resistance rated value degree of pollution 3 surge voltage resistance rated value degree of pollution between any and auxiliary circuit between main and auxiliary circuit between main and auxiliary circuit between main and auxiliary circuit between control and auxiliary circuit between control and auxiliary circuit between cortrol and auxiliary circuit degree of protection NEMA rating between cortrol and auxiliary circuit between auxiliary and aux	product brand name	SIRIUS
product type designation General technical data product function control circuit interface to parallel wiring product function control circuit interface to parallel wiring product product extension auxiliary switch **example of the current** **exampl	product designation	compact starter
General technical data product function control circuit interface to parallel wiring product extension auxiliary switch power loss [W] for rated value of the current at AC in hot operating state at AC in hot operating state per pole without load current share typical every control of the control of the current at AC in hot operating state per pole without load current share typical every control of the control of the current as urge vortage resistance rated value degree of pollution surge vortage resistance rated value ac 6000 V maximum permissible voltage for protective separation between main and auxiliary circuit between main and auxiliary circuit between control and auxiliary circuit between control and auxiliary circuit between control and auxiliary circuit between of protection NEMA rating shock resistance ac 600 m/s2 (6g) with 10 ms per 3 shocks in all axes mechanical service life (operating cycles) of the main contacts typical of auxiliary contacts typical of auxiliary contacts typical of auxiliary contacts typical of the sipaling contacts typical of at AC-15 at 6 A at 24 V typical at AC-15 at 6 A at 23 O V typical at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 23 O V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical can be at AC-15 at 6 A at 24 V typical	design of the product	direct starter
product function control circuit interface to parallel wiring product extension auxiliary switch power loss [W] for rated value of the current • at AC in hot operating state • at AC in hot operating state = 0.1 W • without load current share typical = 0.03 W • without load current share typical = 600 V degree of pollution = 3 surge voltage resistance rated value = 600 V maximum permissible voltage for protective separation • between main and auxiliary circuit = 400 V • between excellary and auxiliary circuit = 250 V • between control and auxiliary circuit = 250 V • between control and auxiliary circuit = 300 V degree of protection NEMA rating = 3 other control and auxiliary circuit = 300 V degree of protection NEMA rating = 3 other control and auxiliary circuit = 300 V degree of protection NEMA rating = 3 other = 3 othe	product type designation	3RA61
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maximum permissible voltage for protective separation • between main and auxiliary circuit • between auxiliary and auxiliary circuit • between control and auxiliary circuit • between control and auxiliary circuit • between control and auxiliary circuit degree of protection NEMA rating other shock resistance mechanical service life (operating cycles) • of the main contacts typical • of auxiliary contacts typical • of the signaling contacts typical • of the signaling contacts typical • of the signaling contacts typical electrical endurance (operating cycles) of auxiliary contacts • at DC-13 at 6 A at 24 V typical • at AC-15 at 6 A at 230 V typical • at AC-15 at 6 A at 230 V typical • ootinous operation according to IEC 80947-6-2 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead -7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during storage • during torage • during transport -55 +80 °C relative humidity during operation 10 90 %	degree of pollution	3
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degree of protection NEMA rating shock resistance a=60 m/s2 (6g) with 10 ms per 3 shocks in all axes mechanical service life (operating cycles) of the main contacts typical of auxiliary contacts typical of the signalling contacts typical lou 000 000 of the signalling contacts typical lou 000 000 electrical endurance (operating cycles) of auxiliary contacts of at DC-13 at 6 A at 24 V typical at DC-13 at 6 A at 24 V typical at AC-15 at 6 A at 230 V typical continous operation according to IEC 60947-6-2 reference code according to IEC 81346-2 Quuble of assignment continous operation according to IEC 60947-6-2 reference code according to IEC 81346-2 Quuble of assignment Lead -7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature during operation during storage -55 +80 °C during transport -55 +80 °C relative humidity during operation 10 90 %	 between auxiliary and auxiliary circuit 	250 V
shock resistance mechanical service life (operating cycles) of the main contacts typical of the signaling	 between control and auxiliary circuit 	300 V
mechanical service life (operating cycles) • of the main contacts typical • of auxiliary contacts typical • of the signaling contacts typical • at DC-13 at 6 A at 24 V typical • at AC-15 at 6 A at 230 V typical • at AC-15 at 6 A at 230 V typical • otherwise of the signaling contacts • at DC-13 at 6 A at 230 V typical • otherwise of the signaling contacts • at DC-13 at 6 A at 230 V typical • otherwise of the signaling contacts • at DC-13 at 6 A at 230 V typical • otherwise of the signaling contacts • at DC-13 at 6 A at 230 V typical • otherwise of the signaling contacts • at DC-13 at 6 A at 230 V typical • otherwise of the signaling contacts • otherwise of the sig	degree of protection NEMA rating	other
of the main contacts typical of auxiliary contacts typical of the signaling contacts of the sig	shock resistance	a=60 m/s2 (6g) with 10 ms per 3 shocks in all axes
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reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature oduring operation during storage oduring transport oduring transport elative humidity during operation 10 90 %	• at AC-15 at 6 A at 230 V typical	200 000
Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature during operation during storage during storage during transport eduring transport -55 +80 °C relative humidity during operation 10 90 %	type of assignment	continous operation according to IEC 60947-6-2
SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature oduring operation during storage oduring transport oduring transport elative humidity during operation 10 90 %	reference code according to IEC 81346-2	Q
Lead monoxide (lead oxide) - 1317-36-8 Lead titanium zirconium oxide - 12626-81-2 Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation -20 +60 °C • during storage • during transport -55 +80 °C relative humidity during operation 10 90 %	Substance Prohibitance (Date)	05/01/2012
installation altitude at height above sea level maximum ambient temperature • during operation • during storage • during transport • during transport -55 +80 °C relative humidity during operation 2 000 m -20 +60 °C -55 +80 °C -55 +80 °C 10 90 %	SVHC substance name	Lead monoxide (lead oxide) - 1317-36-8
ambient temperature	Ambient conditions	
 during operation during storage during transport the during transport the during	installation altitude at height above sea level maximum	2 000 m
◆ during storage ←55 +80 °C ◆ during transport ←55 +80 °C relative humidity during operation 10 90 %	ambient temperature	
● during transport -55 +80 °C relative humidity during operation 10 90 %	during operation	-20 +60 °C
relative humidity during operation 10 90 %	during storage	-55 +80 °C
relative humidity during operation 10 90 %	during transport	-55 +80 °C
Main circuit	relative humidity during operation	10 90 %
	Main circuit	

number of poles for main current circuit	3
adjustable current response value current of the current-	0.32 1.25 A
dependent overload release	
formula for making capacity limit current	38.4 x le
formula for limit current breaking capacity	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-3 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	0.37 kW
• at AC-43	0.01 1.11
— at 400 V rated value	370 W
— at 400 V rated value — 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 according to IEC 60947-6-2 maximum	750 1/h
at AC-43 according to IEC 60947-6-2 maximum	250 1/h
Control circuit/ Control	
type of voltage	AC/DC
control supply voltage 1 at AC	
at 50 Hz rated value	24 V
● at 50 Hz	24 24 V
at 60 Hz rated value	24 V
• at 60 Hz	24 V
control supply voltage frequency	
• 1 rated value	50 Hz
2 rated value	60 Hz
control supply voltage 1 at DC	
rated value	24 V
•	24 24 V
holding power	
at AC maximum	2.8 W
at DC maximum	2.9 W
Auxiliary circuit	
number of NC contacts for auxiliary contacts	1
number of NO contacts for auxiliary contacts	1
number of NO contacts of instantaneous short-circuit trip unit for	1
signaling contact	
number of CO contacts of the current-dependent overload release for signaling contact	1
operational current of auxiliary contacts at AC-12 maximum	10 A
operational current of auxiliary contacts at AG-12 maximum operational current of auxiliary contacts at DC-13 at 250 V	0.27 A
Protective and monitoring functions	V.E. / I
trip class	CLASS 10 and 20 adjustable
•	OLAGO TO ATTU ZO AUJUSTADIO
operating short-circuit current breaking capacity (Ics)	52 kA
• at 400 V rated value	53 kA 3 kA
 at 500 V rated value 	3 K A
- at COO \/ mate d \/ali:-	
at 690 V rated value	3 kA
UL/CSA ratings	
at 690 V rated value UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value	

at 600 V rated value	1.25 A
yielded mechanical performance [hp] for 3-phase AC motor	1.2011
• 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
mounting position recommended	vertical, on horizontal standard DIN rail
fastening method	screw and snap-on mounting
height	170 mm
width	45 mm
depth	165 mm
Connections/ Terminals	
product component removable terminal for main circuit	Yes
product component 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	0.445 0 3.4.40 3
• solid	2x (1.5 6 mm²), 1x 10 mm²
finely stranded with core end processing type of connectable conductor group continue	2x (1.5 6 mm²)
type of connectable conductor cross-sections	
for auxiliary contacts— solid	0.5 4 mm ² 2v (0.5 2.5 mm ²)
— solid — finely stranded with core end processing	0.5 4 mm², 2x (0.5 2.5 mm²) 0.5 2.5 mm², 2x (0.5 1.5 mm²)
for AWG cables for auxiliary contacts	2x (20 14)
Safety related data	_v ++j
proportion of dangerous failures	
with low demand rate according to SN 31920	40 %
with high demand rate according to SN 31920	50 %
B10 value with high demand rate according to SN 31920	3 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
IEC 61508	
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according 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 according to IEC 61000-4-4	4 kV main contacts, 2 kV auxiliary contacts
due to conductor-earth surge according to IEC 61000-4-5	4 kV main contacts, 2 kV auxiliary contacts
 due to conductor-conductor surge according to IEC 61000-4-5 	2 kV main contacts, 1 kV auxiliary contacts

 due to high-frequency radiation according to IEC 61000- 4-6 	0.15-80Mhz at 10V
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	8 kV
conducted HF interference emissions according to CISPR11	150 kHz 30 MHz Class A
field-bound HF interference emission according to CISPR11	30 1000 MHz Class A
Supply voltage	
Supply voltage required Auxiliary voltage	No
Display	
number of LEDs	2
Approvals Certificates	

General Product Approval







Confirmation





EMV

Functional Saftey

Test Certificates

Marine / Shipping





Type Test Certificates/Test Report







other

Dangerous Good

Environment

Confirmation

Transport Information

Environmental Confirmations

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA6120-1BB33

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1BB33

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1BB33

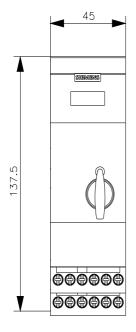
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

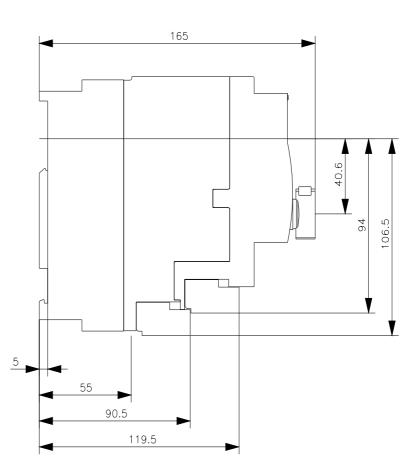
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1BB33&lang=en

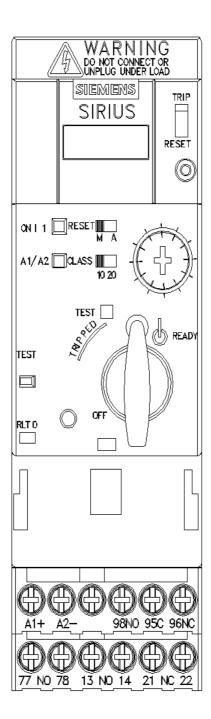
Characteristic: Tripping characteristics, I2t, Let-through current

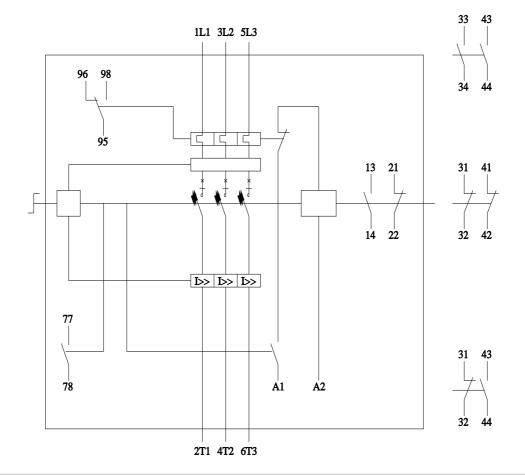
https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1BB33/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1BB33&objecttype=14&gridview=view1









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