SIEMENS

Data sheet 3RA6120-1EP32



SIRIUS Compact load feeder DOL starter 690 V 110...240 V AC/DC 50...60 Hz 8...32 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	5.4 W
• per pole	1.8 W
power loss [W] for rated value of the current without load current share typical	5.8 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/s ² ; 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
during storage	-55 +80 °C

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 current-dependent overload release	8 32 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	15 kW
at 500 V rated value	11 kW
at 690 V rated value	11 kW
operating voltage at AC-3 rated value maximum	690 V
operational current	
at AC at 400 V rated value	32 A
• at AC-43	
— at 400 V rated value	29 A
— at 500 V rated value	17.6 A
— at 690 V rated value	12.8 A
operating power	
• at AC-3 at 400 V rated value	15 kW
• at AC-43	
— at 400 V rated value	15 000 W
— at 500 V rated value	11 000 W
— at 690 V rated value	11 000 W
no-load switching frequency	3 600 1/h
operating frequency	0 000 IM
• 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	250 1/11
type of voltage	AC/DC
type of voltage	AC/DC
control supply voltage 1 at AC	
	110 240 V
control 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	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	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	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	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 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 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
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 Auxiliary circuit	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 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 Auxiliary circuit number of NC contacts for auxiliary contacts	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 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 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 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 Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts of instantaneous short-circuit trip unit for signaling contact	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 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 Auxiliary circuit 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 5.2 W 5.8 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 Auxiliary circuit 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 5.2 W 5.8 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 Auxiliary circuit 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 W 1 1 1 1 10 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 AC 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 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 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	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 W 1 1 1 1 10 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 AC 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 5.2 W 5.8 W 1 1 1 1 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 AC 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) • at 400 V	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 W 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 at DC holding power at AC 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) at 400 V at 500 V rated value	110 240 V 110 240 V 50 Hz 60 Hz 110 240 V 5.2 W 5.8 W 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA 1 kA

full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	32 A
yielded mechanical performance [hp] for 3-phase AC motor	
• at 200/208 V rated value	7.5 hp
• at 220/230 V rated value	10 hp
at 460/480 V rated value	20 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	100 111111
product component	V
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 (2.5 6 mm²), 1x 10 mm²
 finely stranded with core end processing 	2x (2.5 6 mm²)
at AWG cables for main contacts	2x (14 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	2 000 000
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 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	
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 61000-4-5 4 kV main contacts, 2 kV auxiliary contacts • due to conductor-conductor surge acc. to IEC 2 kV main contacts, 1 kV auxiliary contacts 61000-4-5 • due to high-frequency radiation acc. to IEC 61000-0.15-80Mhz at 10V 4-6 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 Class A field-bound HF interference emission acc. to CISPR11 30 ... 1000 MHz Class A Supply voltage required Auxiliary voltage No Display number of LEDs 2 Certificates/ approvals

General Product Approval

EMC

Functional Safety/Safety of Machinery













Declaration of Conformity

Test Certificates

Marine / Shipping



Type Test Certificates/Test Report









Marine / Shipping

other







Confirmation

Further information

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=3RA6120-1EP32

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1EP32

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

https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1EP32

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

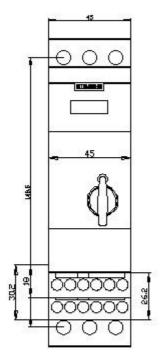
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1EP32&lang=en

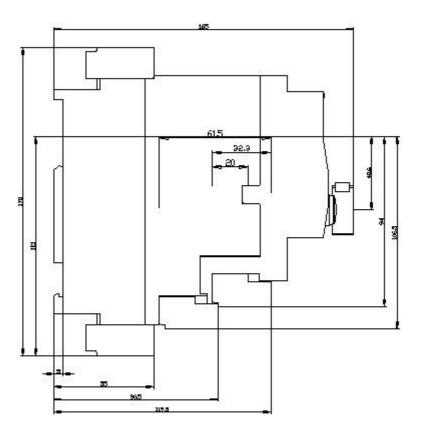
Characteristic: Tripping characteristics, I2t, Let-through current

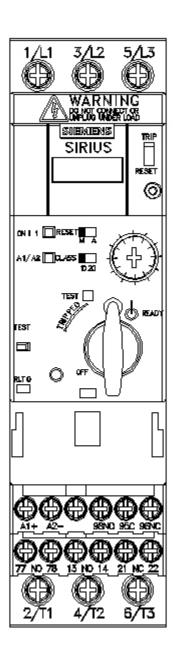
https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1EP32/char

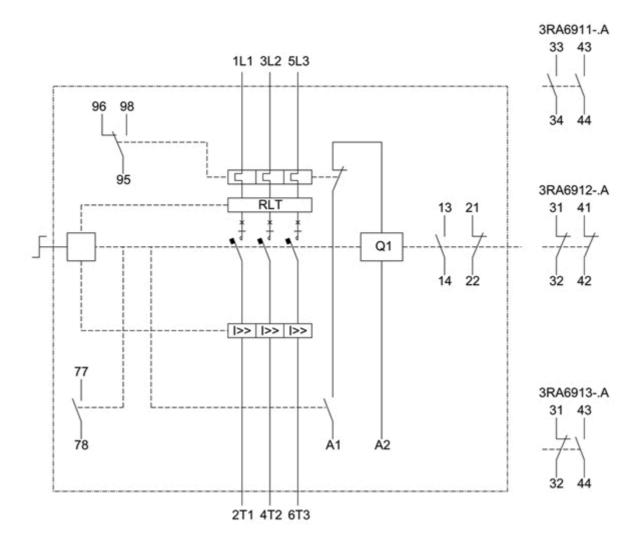
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-1EP32&objecttype=14&gridview=view1









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