SIEMENS

Data sheet 3RA6120-1AB34



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

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/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
ambient temperature during storage	-55 +80 °C
ambient temperature during transport	-55 +80 °C

relative humidity during operation	10 90 %
Main circuit	10 00 /0
	2
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	0.1 0.4 A
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	100 X 10
at 400 V rated value	0.09 kW
at 500 V rated value 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	0.4.5
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	
type of voltage	AC/DC
type of voltage control supply voltage 1 at AC	AC/DC
	AC/DC 24 V
control supply voltage 1 at AC	
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	24 V
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 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	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 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 holding power	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 holding power • at AC maximum • at DC 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 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 Auxiliary circuit	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 Auxiliary circuit number of NC 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 maximum Auxiliary circuit 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 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	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 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	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 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	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 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	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 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	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 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 control supply voltage 1 • at DC rated value 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 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 0 A 0.27 A
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 control supply voltage 1 • at DC rated value 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 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
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 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 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 CLASS 10 and 20 adjustable
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 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 Protective and monitoring functions trip class breaking capacity operating short-circuit current (Ics) • at 400 V	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA
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 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	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 1 CLASS 10 and 20 adjustable 53 kA 3 kA
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 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 Protective and monitoring functions trip class breaking capacity operating short-circuit current (Ics) • at 400 V	24 V 24 V 50 Hz 60 Hz 24 V 2.8 W 2.9 W 1 1 1 1 CLASS 10 and 20 adjustable 53 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	screw-type terminals
 for auxiliary and control circuit 	plug-in without 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	0 000 000
with low demand rate acc. to SN 31920	40 %
	40 % 50 %
with high demand rate acc. to SN 31920 failure rate [ELT] with low demand rate acc. to SN 31920	
failure rate [FIT] with low demand rate acc. to SN 31920 T1 value for proof test interval or service life acc. to	100 FIT
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 auxiliary contacts
due to burst acc. to IEC 61000-4-5 due to conductor-earth surge acc. to IEC 61000-4-5	4 kV main contacts, 2 kV auxiliary contacts
- dad to consactor cartificatige doc. to IEO 01000-4-0	airi ooritaoto, 2 it aaxiilary ooritaoto

• 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 8 kV electrostatic discharge acc. to IEC 61000-4-2 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 2 number of LEDs

Certificates/ approvals

General Product Approval

EMC

Functional Safety/Safety of Machinery













Declaration of Conformity

Test Certificates

Marine / Shipping

Miscellaneous



Type Test Certificates/Test Report







Marine / Shipping









Confirmation

other

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=3RA6120-1AB34

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1AB34

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

https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AB34

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

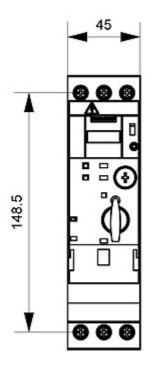
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1AB34&lang=en

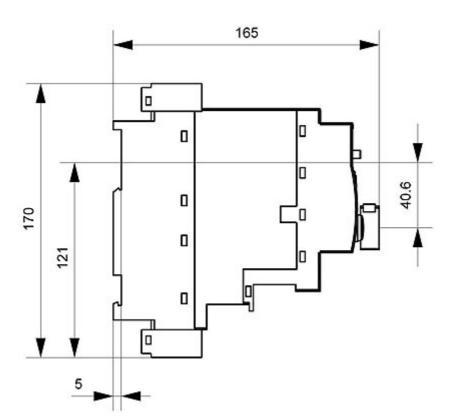
Characteristic: Tripping characteristics, I2t, Let-through current

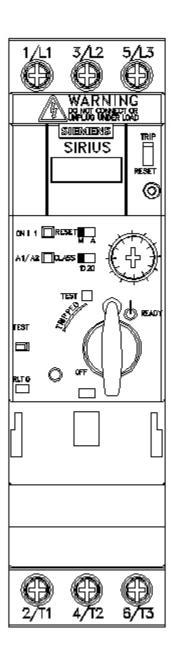
https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AB34/char

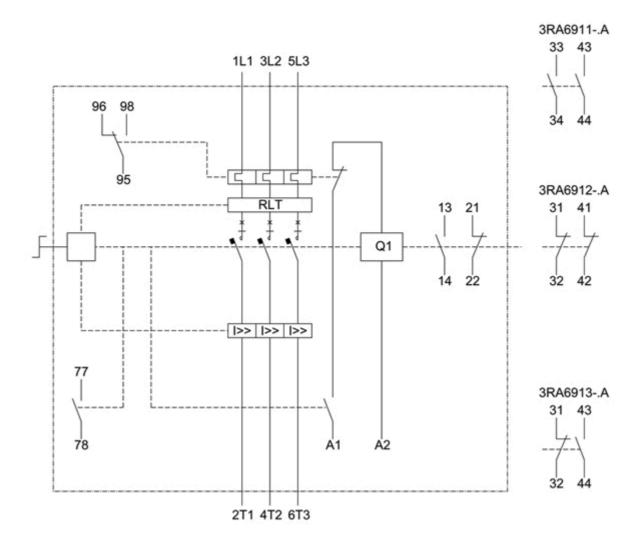
Further characteristics (e.g. electrical endurance, switching frequency)

 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RA6120-1AB34\&objecttype=14\&gridview=view1}$









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