SIEMENS

Data sheet 3RA6120-2BP33



SIRIUS Compact load feeder DOL starter 690 V 110...240 V AC/DC 50...60 Hz 0.32...1.25 A IP20 Connection main circuit: plug-in, without terminals Connection auxiliary circuit: Spring-type 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	0.1 W
per pole	0.03 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/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 %
	10 90 76
Main circuit	2
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	0.32 1.25 A
formula for making capacity limit current	38.4 x le
formula for breaking capacity limit current	32 x le
yielded mechanical performance for 4-pole AC motor	02 X 10
at 400 V rated value	0.37 kW
at 500 V rated value 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	4.07.4
at AC 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 	370 W
• at AC-43	
— at 400 V rated value	370 W
— 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 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
control supply voltage 1 at AC	
	AC/DC 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	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	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 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 Auxiliary circuit 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 Auxiliary circuit	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 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 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 Auxiliary circuit number of NC 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
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 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 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 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 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	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 • 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 6 W 5.1 W 1 1 1 1 10 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 • 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 Protective and monitoring functions trip class	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 • 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 6 W 5.1 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 6 W 5.1 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 6 W 5.1 W 1 1 1 1 CLASS 10 and 20 adjustable 53 kA 3 kA
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 6 W 5.1 W 1 1 1 1 1 10 A 0.27 A

full-load current (FLA) for 3-phase AC motor	
 at 480 V rated value 	1.25 A
at 600 V rated value	1.25 A
yielded mechanical performance [hp] for 3-phase AC motor	
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
• recommended	vertical, on horizontal standard mounting rail
fastening method	screw and snap-on mounting
height	191 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 	spring-loaded terminals
type of connectable conductor cross-sections	1
for main contacts	
— solid	2x (1.5 6 mm²), 1x 10 mm²
— finely stranded with core end processing	2x (1.5 6 mm²)
— finely stranded without 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	2x (0.25 1.5 mm²)
finely stranded with core end processing	2x (0.25 1.5 mm²)
— finely stranded with core end processing — finely stranded without core end processing	2x (0.25 1.5 mm²)
at AWG cables for auxiliary contacts	2x (0.25 1.5 minr) 2x (24 16)
Safety related data	Z. (Z.1 10)
	3 000 000
B10 value with high demand rate acc. to SN 31920 proportion of dangerous failures	3 000 000
with low demand rate acc. to SN 31920	40 %
	50 %
with high demand rate acc. to SN 31920 failure rate [EIT] with low demand rate acc. to SN 31920	
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
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 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 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	
Display		
number of LEDs	2	
Certificates/ approvals		
	Functional	

General Product Approval









EMC



Safety/Safety of Machinery

Declaration of Conformity

Test Certificates

Marine / Shipping

Miscellaneous



Type Test Certificates/Test Report







Marine / Shipping

S grove,









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=3RA6120-2BP33

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-2BP33

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

https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2BP33

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

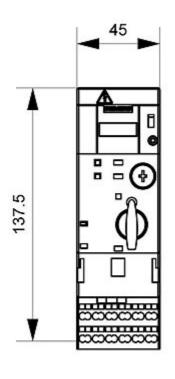
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-2BP33&lang=en

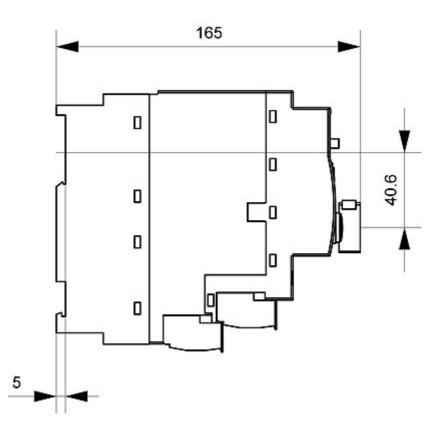
Characteristic: Tripping characteristics, I²t, Let-through current

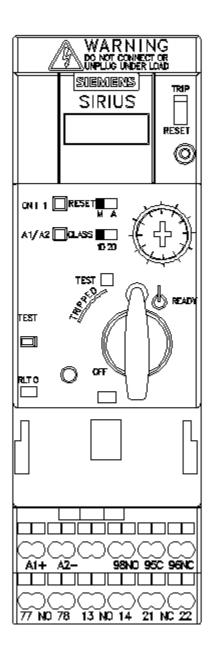
https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-2BP33/char

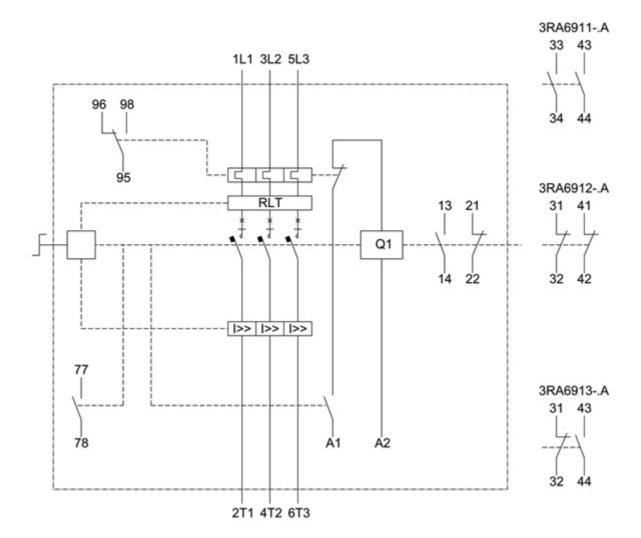
Further characteristics (e.g. electrical endurance, switching frequency)

 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RA6120-2BP33\&objecttype=14\&gridview=view1}$









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