3RA2120-1FA24-0AP6

Data sheet

product brand name



Fuseless motor starter Direct start 600VAC Size S0 3.5-5A 220/240VAC 50/60HZ screw connection For screw mounting Or 35 mm rail-mounting Type of coordination 2 IQ = 150 KA Also full fills type Of coordination 1 1NO+1NC (contactor)

product brand name	SIRIUS
product designation	non-fused motor starter 3RA2
design of the product	direct starter
manufacturer's article number	
 of the supplied contactor 	3RT2024-1AP60
 of the supplied circuit-breakers 	3RV2011-1FA10
 of the supplied link module 	3RA2921-1AA00
General technical data	
size of the circuit-breaker	S00
size of load feeder	S0
product extension auxiliary switch	Yes
insulation voltage with degree of pollution 3 at AC rated value	690 V
degree of pollution	3
surge voltage resistance rated value	6 kV
shock resistance according to IEC 60068-2-27	6g / 11 ms
mechanical service life (switching cycles) of contactor typical	10 000 000
type of assignment	2
Ambient conditions	
ambient temperature	
during operation	-20 +60 °C
during storage	-50 +80 °C
during transport	-55 +80 °C
Main circuit	
number of poles for main current circuit	3
design of the switching contact	electromechanical
adjustable current response value current of the current-dependent overload release	3.5 5 A
operating voltage	
rated value	690 V
at AC-3 rated value maximum	690 V
operating frequency rated value	50 60 Hz
operational current at AC-3 at 400 V rated value	3.6 A
operating power at AC-3	
• at 400 V rated value	1 500 W
at 500 V rated value	2 200 W
Control circuit/ Control	
control complex valtage at AC	
control supply voltage at AC	

SIRIUS

* at 0 to 17, tract value * at 10 titz rated value * at 10 titz rated value * apparent holiding power of magnet coil at AC * 7,2 VA * 10 tiductive power factor with the holding power of the coil * 12, 254 V * 1, 254 V *	e at 50 Hz rated value	176 242 V
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coll number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contacts trip class CLASS 10 design of the overload release response value current of instantaneous short-circuit trip unit ULCSA ratings ULCSA ratings ULCSA ratings Ill-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value • at 500 V rated value - at 101/20 V rated value - at 200 V rated value - at 200 V rated value - at 200 V rated value - at 200 V rated value - at 200 V rated value - at 200 V rated value - at 575600 V rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 500 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947-41 rated value - at 600 V according to IEC 60947		
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Protective and monitoring functions trip class	number of NC contacts for auxiliary contacts	1
trip class design of the overload release response value current of instantaneous short-circuit trip unit DLCSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value 1 at 800 V rated value 2 to finely-phase AC motor - at 100 V rated value 1 of nishigh-phase AC motor - at 110/120 V rated value 2 to finely-phase AC motor - at 200208 V rated value 5 to finely-phase AC motor - at 200208 V rated value 1 hp - at 480480 V rated value 2 to finely standed value 3 hp Short-circuit protection product function short circuit trip conditional short-circuit current (q) 1 at 400 x according to EC 60947 4-1 rated value 1 at 500 V according to EC 60947 4-1 rated value 1 at 600 V according to EC 60947 4-1 rated value 1 at 600 V according to EC 60947 4-1 rated value 1 at 600 V according to EC 60947 4-1 rated va	number of NO contacts for auxiliary contacts	1
design of the overload release response value current of instantaneous short-circuit trip unit UIUCSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 480 V rated value • at 480 V rated value • at 110/120 V rated value • at 1200 V rated value • at 230 V rated value • at 22020 V rated value • at 22020 V rated value • at 220230 V rated value • at 220230 V rated value • at 460/480 V rated value • at 575/680 V rated value • at 575/680 V rated value • at 460/480 V rated value • at 460/480 V rated value • at 460 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 560 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value • at 600 V according to IEC 68947-4-1 rated value	Protective and monitoring functions	
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full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value • at 700 V rated value • at 110/120 V rated value • at 200 V rated value • at 200 V rated value • at 200 V rated value • at 200/208 V rated value • at 200/208 V rated value • at 200/208 V rated value • at 200/200 V rated value • at 460/480 V rated value • at 460/480 V rated value • at 460/480 V rated value • at 576/600 V rated value • at 576/600 V rated value Product function short circuit protection gestion of the short-circuit current (q) • at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value Installation/ mounting/ dimensions mounting position fastening method height 193.1 mm required spacing • for grounded parts • for live parts • f		
* at 480 V rated value	UL/CSA ratings	
• at 600 V rated value 4.55 A	full-load current (FLA) for 3-phase AC motor	
yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 Y rated value — at 230 V rated value — at 2200/208 V rated value — at 2200/208 V rated value — at 2200/208 V rated value — at 4200/208 V rated value — at 460/480 V rated value — at 475/600 V rated value — at 475/600 V rated value — at 575/600 V rated value — at 600/40 V rated value — at 600 V according to 1EC 60947-4-1 rated value • at 500 V according to 1EC 60947-4-1 rated value • at 500 V according to 1EC 60947-4-1 rated value • at 500 V according to 1EC 60947-4-1 rated value * at 500 V according to 1EC 60947-4-1 rated value • at 500 V according to 1EC 60947-4-1 rated value * at 600 V according to 1EC	 at 480 V rated value 	4.8 A
• for single-phase AC motor — at 110/120 V rated value — at 230 V rated value — of or 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 480/480 V rated value — at 575/600 V rated value Short-circuit protection product function short circuit protection design of the short-circuit trip conditional short-circuit trip at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value at 500 V according to IEC 60947-4-1 rated value 100 000 A Installation/ mounting/ dimensions mounting position at 500 V according to IEC 60947-4-1 rated value 45 mm depth 45 mm depth 45 mm for grounded parts - for groun		4.55 A
- at 110/120 V rated value	yielded mechanical performance [hp]	
• at 230 V rated value • for 3-phase AC motor — at 200/230 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 455/600 V rated value — at 575/600 V rated value 3 hp Short-circuit protection product function short circuit protection design of the short-circuit trip conditional short-circuit current (tq) • at 400 V according to IEC 60947-4-1 rated value 153 000 A • at 500 V according to IEC 60947-4-1 rated value 100 000 A Installation/ mounting/ dimensions mounting position fastening method Snap-mounted to DIN rail or screw-mounted with additional push-in lug height 45 mm depth 97.1 mm required spacing • for grounded parts — forwards — upwards — at the side — odwnwards • for live parts — forwards — to rive parts — forwards — ownwards • for live parts — forwards — upwards — downwards • for live parts — forwards — ownwards — to mm • for wards — ownwards — ownwards — the side — upwards — ownwards — to mm • for main contacts stranded — at the side — ownwards — to mm • for main contacts stranded • at AWG cables for main current circuit type of connectable conductor cross-section for main current circuit five for connectable conductor cross-section for main contacts inclusive stranded • at AWG cables for main contacts finely stranded with core are forcessing 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 6 mm² 1 10 mm² 2x (16 12), 2x (14 8)	 for single-phase AC motor 	
• for 3-phase AC motor	 — at 110/120 V rated value 	0.17 hp
- at 200/208 V rated value	— at 230 V rated value	0.5 hp
- at 220/230 V rated value	• for 3-phase AC motor	
- at 460/480 V rated value 3 hp - at 575/600 V rated value 3 hp Short-circuit protection product function short circuit protection 4 yes design of the short-circuit current (lq) • at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 53 000 A • vertical fastening method • Snap-mounted to DIN rail or screw-mounted with additional push-in lug height • 45 mm depth • 45 mm depth • 60 grounded parts • for grounded parts • for grounded parts • for grounded parts • for according to IEC 60947-4-1 rated value • at the side • grounded parts • for live parts • at the side • at the side • grounded conductor cross-sections • for main contacts stranded • at AWG cables for main contacts finely stranded with core end processing 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 10 mm² 1 10 mm² 2x (16 12), 2x (14 8)	 at 200/208 V rated value 	1 hp
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Short-circuit protection Product function short circuit protection Yes	 at 460/480 V rated value 	3 hp
design of the short-circuit trip magnetic conditional short-circuit trip magnetic conditional short-circuit current (Iq) • at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value Installation/ mounting/ dimensions mounting position fastening method Snap-mounted to DIN rail or screw-mounted with additional push-in lug height 193.1 mm width 45 mm depth required spacing • for grounded parts — forwards — backwards — backwards — at the side — downwards — of or live parts — for live parts — forwards — backwards — upwards — on mm • for live parts — forwards — backwards — upwards — at the side — downwards — backwards — pomm • for live parts — forwards — backwards — backwards — upwards — at the side — downwards — backwards — on mm • for live parts — forwards — on mm • for live parts — forwards — backwards — upwards — at the side — onections/ Torminals type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at ANVC cables for main contacts finely stranded with core end processing	— at 575/600 V rated value	3 hp
design of the short-circuit trip conditional short-circuit current (lq) • at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value Installation/ mounting/ dimensions mounting position fastening method fastening method height vertical fastening method height 193.1 mm frequired spacing • for grounded parts — forwards — backwards — upwards — at the side — downwards — for live parts — forwards — backwards — upwards — backwards — upwards — of or live parts — forwards — upwards — backwards — upwards — at the side — downwards — to mm • for live parts — forwards — upwards — at the side — upwards — upwards — at the side — upwards — at the side — upwards — upwards — upwards — at the side — of on mm Connections/ Terminals type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts finely stranded with core end processing	Short-circuit protection	
conditional short-circuit current (Ig) • at 400 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value • at 500 V according to IEC 60947-4-1 rated value Installation mounting/ dimensions mounting position fastening method height 193.1 mm width 45 mm depth 97.1 mm required spacing • for grounded parts — forwards — backwards — upwards — at the side — downwards • for live parts — forwards — backwards — upwards — backwards — omm • for live parts — forwards — upwards — backwards — upwards — at the side — downwards — to mm • for live parts — forwards — upwards — at the side — upwards — at the side — upwards — at the side — upwards — upwards — at the side — upwards — at the side — upwards — at the side — of ormain contacts for main contacts stranded • at AWG cables for main contacts finely stranded with core end processing	product function short circuit protection	Yes
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at 500 V according to IEC 60947-4-1 rated value Installation/ mounting/ dimensions mounting position fastening method height 193.1 mm width 45 mm depth 97.1 mm required spacing • for grounded parts — forwards — backwards — upwards — at the side — downwards • for live parts — forwards — backwards 0 mm • for live parts — forwards — upwards — a the side — downwards 0 mm • for live parts — forwards — backwards 0 mm • for live parts — forwards 0 mm • for live parts — backwards 0 mm — a the side — yowards 0 mm — a the side — backwards 0 mm — backwards 0 mm Connections/ Terminals type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts finely stranded with core end processing 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 6 mm²	conditional short-circuit current (Iq)	
mounting position fastening method height width depth required spacing of for grounded parts - backwards - upwards - downwards - for live parts - for wards - backwards - to main contacts stranded - at the side - downwards - upwards - to main contacts stranded - at WG cables for main contacts finely stranded with core end processing vertical vertical Snap-mounted to DIN rail or screw-mounted with additional push-in lug vertical Snap-mounted to DIN rail or screw-mounted with additional push-in lug vertical Snap-mounted to DIN rail or screw-mounted with additional push-in lug Backwards 10 mm 97.1 mm 10 mm 9 mm 10 mm 10 mm 9 mm 10 mm	 at 400 V according to IEC 60947-4-1 rated value 	153 000 A
mounting position vertical fastening method Snap-mounted to DIN rail or screw-mounted with additional push-in lug height 193.1 mm width 45 mm depth 97.1 mm required spacing • for grounded parts — forwards 10 mm — backwards 0 mm — upwards 30 mm — downwards 10 mm • for live parts 10 mm — backwards 0 mm — upwards 30 mm — downwards 10 mm — at the side 9 mm Connections/ Terminals type of electrical connection for main current circuit screw-type terminals type of connectable conductor cross-sections 1 10 mm², 2x (2.5 6 mm²) • at AWG cables for main contacts 2x (16 12), 2x (14 8) connectable conductor cross-section for main contacts finely stranded with core end processing 1 6 mm²	 at 500 V according to IEC 60947-4-1 rated value 	100 000 A
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- at the side - downwards • for live parts - forwards - backwards - upwards - downwards - downwards - downwards - at the side Connections/ Terminals type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts finely stranded with core end processing 9 mm 10 mm 9 mm 9 mm 10 mm 9 mm 10 mm 9 mm 2 x (2.5 6 mm²) 1 10 mm², 2x (2.5 6 mm²) 1 6 mm²		
 downwards for live parts forwards backwards upwards downwards at the side type of electrical connection for main current circuit type of connectable conductor cross-sections for main contacts stranded at AWG cables for main contacts finely stranded with core end processing for live parts 10 mm 9 mm mm 10 mm screw-type terminals screw-type terminals 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 		
 • for live parts — forwards — backwards — upwards — upwards — downwards — at the side — at the side — mm — of connections of main current circuit — type of electrical connection for main current circuit — type of connectable conductor cross-sections — for main contacts stranded — at AWG cables for main contacts — at AWG cables for main contacts finely stranded with core end processing — at AWG conductor cross-section for main contacts — for main contacts — at AWG cables for main contacts — at AWG conductor cross-section for main contacts — at AWG conductor cross-sect		
- forwards - backwards 0 mm - upwards 30 mm - downwards - at the side 9 mm Connections/ Terminals type of electrical connection for main current circuit screw-type terminals type of connectable conductor cross-sections • for main contacts stranded 1 10 mm², 2x (2.5 6 mm²) • at AWG cables for main contacts finely stranded with core end processing 1 6 mm²		10 mm
 — backwards — upwards — downwards — at the side 9 mm Connections/ Terminals type of electrical connection for main current circuit type of connectable conductor cross-sections ● for main contacts stranded ● at AWG cables for main contacts fornectable conductor cross-section for main contacts for main contacts for main conductor cross-section for main contacts finely stranded with core end processing 0 mm 2x (16 12), 2x (14 8) 1 6 mm² 1 6 mm² 	•	
 — upwards — downwards — at the side — 9 mm Connections/ Terminals type of electrical connection for main current circuit screw-type terminals type of connectable conductor cross-sections — for main contacts stranded — at AWG cables for main contacts connectable conductor cross-section for main contacts 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) connectable conductor cross-section for main contacts finely stranded with core end processing 		
 — downwards — at the side		
— at the side 9 mm Connections/ Terminals type of electrical connection for main current circuit screw-type terminals type of connectable conductor cross-sections ● for main contacts stranded 1 10 mm², 2x (2.5 6 mm²) ● at AWG cables for main contacts 2x (16 12), 2x (14 8) connectable conductor cross-section for main contacts finely stranded with core end processing		
type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts connectable conductor cross-section for main contacts 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 6 mm²		
type of electrical connection for main current circuit type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts connectable conductor cross-section for main contacts finely stranded with core end processing screw-type terminals 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 6 mm²		9 mm
type of connectable conductor cross-sections • for main contacts stranded • at AWG cables for main contacts connectable conductor cross-section for main contacts finely stranded with core end processing 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) 1 6 mm²		
 for main contacts stranded 1 10 mm², 2x (2.5 6 mm²) 2x (16 12), 2x (14 8) connectable conductor cross-section for main contacts finely stranded with core end processing 1 6 mm² 1 6 mm² 		screw-type terminals
• at AWG cables for main contacts connectable conductor cross-section for main contacts finely stranded with core end processing 2x (16 12), 2x (14 8) 1 6 mm²	5.	
connectable conductor cross-section for main contacts finely stranded with core end processing		
finely stranded with core end processing		
Safety related data	finely stranded with core end processing	1 6 mm²
	Safety related data	

B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures with high demand rate according to SN 31920	73 %
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front

Certificates/ approvals

General Product Approval

For use in hazardous locations Declaration of Conformity



Confirmation



EAC





Declaration of Conformity

Test Certificates

Marine / Shipping



Special Test Certificate

Type Test Certificates/Test Report







Marine / Shipping

other Railway









Confirmation V

Vibration and Shock

Further information

Information- and Download center (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA2120-1FA24-0AP6

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA2120-1FA24-0AP6

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

https://support.industry.siemens.com/cs/ww/en/ps/3RA2120-1FA24-0AP6

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

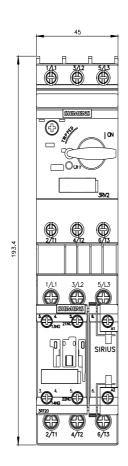
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA2120-1FA24-0AP6&lang=en

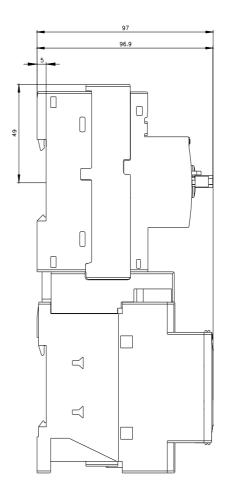
Characteristic: Tripping characteristics, I²t, Let-through current

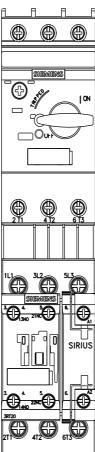
https://support.industry.siemens.com/cs/ww/en/ps/3RA2120-1FA24-0AP6/char

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

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA2120-1FA24-0AP6&objecttype=14&gridview=view1







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