SIEMENS

Data sheet

3RT2038-1AK60



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 110 V AC, 50 Hz / 120 V, 60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2 $\,$

product brand name SIRUS product designation Power contactor general technical data 3RT2 General technical data S2 product textension No • function module for communication No • auxilary switch Yes power loss fW for rated value of the current - • at AC in hot operating state 17.1 W • at AC in hot operating state per pole 5.7 W • without load current share typical 18.5 W insulation voltage 690 V • of auxiliary dircut with degree of pollution 3 rated value 690 V • of auxiliary dircut with degree of pollution 3 rated value 690 V • of auxiliary dircut with degree of pollution 3 rated value 690 V • of auxiliary circui trated value 6 k/V • of auxiliary circui trated value 6 k/V • of auxiliary dircui trated value 6 k/V • of auxiliary dircui trated value 6 k/V • of auxiliary dircut it ated value 6 k/V • of auxiliary dircut it ated value 6 k/V • of contactor typical 18.5g / 5 ms, 11.6g / 1	6/13	
product type designation 3RT2 Conneral technical data	product brand name	SIRIUS
Ceneral technical data S2 product extension S2 product extension No • auxiliary switch Yes power loss [W] for rated value of the current Yes • at AC in hot operating state 17.1 W • at AC in hot operating state per pole 5.7 W • without load current share typical 18.5 W Insulation voltage 690 V • of main circuit with degree of pollution 3 rated value 690 V • of main circuit rated value 680 V • of auxiliary circuit with degree of pollution 3 rated value 690 V • of main circuit rated value 6 kV • of auxiliary circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • at AC 11.8 g / 5 ms, 7.4 g / 10 ms shock resistance with sine pulse 10 000 000 • at AC 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 • of the contactor with added auxiliary	product designation	Power contactor
size of contactor S2 product extension No • auxilary switch Yes power loss [W] for rated value of the current 17.1 W • at AC in hot operating state 17.1 W • at AC in hot operating state per pole 5.7 W • without load current share typical 18.5 W insulation voltage 690 V • of auxilary circuit with degree of pollution 3 rated value 690 V • of auxilary circuit rated value 64 V • of auxilary circuit rated value 10.00 V • of auxilary circuit rated value 57 Sms, 7.4g / 10 ms shock resistance with sine pulse 10.8g / 5 ms, 7.4g / 10 ms	product type designation	3RT2
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power loss [W] for rated value of the current at AC in hot operating state 17.1 W at AC in hot operating state per pole 57 W without load current share typical 18.5 W insulation voltage of main circuit with degree of pollution 3 rated value 690 V surge voltage resistance of main circuit rated value 690 V of main circuit rated value 64V of main circuit rated value 64V of main circuit rated value 64V of auxiliary circuit rated value 64V of main context secording to EN 60947-1 shock resistance at rectangular impulse at AC at AC 11.8g / 5 ms, 7.4g / 10 ms shock resistance with sine pulse at AC 10.000 000 of contactor typical 10 000 000 of contactor with added electronically optimized auxiliary switch block typical 10 000 000 reference code according to EN 2846-2 Q Substance Prohibitance (Date) 10/01/2014 Ambient conditions <t< th=""><th> function module for communication </th><th>No</th></t<>	 function module for communication 	No
• at AC in hot operating state 17.1 W • at AC in hot operating state per pole 5.7 W • without load current share typical 18.5 W insulation voltage 690 V • of main circuit with degree of pollution 3 rated value 690 V • of main circuit with degree of pollution 3 rated value 690 V surge voltage resistance 6 kV • of auxiliary circuit rated value 6 kV • at AC 11.8 g / 5 ms, 7.4 g / 10 ms shock resistance with sine pulse 10 000 000 • at AC 18.5 g / 5 ms, 11.6 g / 10 ms mechanical service life (operating cycles) 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 • of the contactor with added auxiliary switch block typical 10 0000 000 • of the conta	 auxiliary switch 	Yes
• at AC in hot operating state per pole 5.7 W • without load current share typical 18.5 W insulation voltage 690 V • of main circuit with degree of pollution 3 rated value 690 V surge voltage resistance 690 V • of main circuit rated value 6 kV • of main circuit rated value 6 kV • of auxiliary circuit rated value 6 kV maximum permissible voltage for protective separation between coll and main contacts according to EN 60947-1 400 V shock resistance at rectangular impulse 11.8g / 5 ms, 7.4g / 10 ms • at AC 11.8g / 5 ms, 7.4g / 10 ms mechanical service life (operating cycles) 0 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 • of the contactor with added auxiliary switch block typical 10 000 000 reference code according to IECe 81346-2 Q Substance Prohibitance (Date)	power loss [W] for rated value of the current	
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Substance Prohibitance (Date) 10/01/2014 Ambient conditions	 of the contactor with added auxiliary switch block typical 	10 000 000
Ambient conditions installation altitude at height above sea level maximum 2 000 m ambient temperature -25 +60 °C • during storage -55 +80 °C relative humidity minimum 10 %	reference code according to IEC 81346-2	Q
installation altitude at height above sea level maximum 2 000 m ambient temperature -25 +60 °C • during operation -25 +60 °C • during storage -55 +80 °C relative humidity minimum 10 %	Substance Prohibitance (Date)	10/01/2014
ambient temperature • during operation • during storage -25 +60 °C • during storage relative humidity minimum 10 %	Ambient conditions	
• during operation -25 +60 °C • during storage -55 +80 °C relative humidity minimum 10 %	installation altitude at height above sea level maximum	2 000 m
• during storage -55 +80 °C relative humidity minimum 10 %	ambient temperature	
relative humidity minimum 10 %	during operation	-25 +60 °C
	during storage	-55 +80 °C
	· · · · · · · · · · · · · · · · · · ·	10 %
relative humidity at 55 °C according to IEC 60068-2-30 95 %	relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	Main circuit	
number of poles for main current circuit 3	number of poles for main current circuit	3

number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
 at AC-3e rated value maximum 	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated	90 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	90 A
— up to 690 V at ambient temperature 60 °C rated	80 A
value	
• at AC-3	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-3e	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
at AC-4 at 400 V rated value	55 A
at AC-5a up to 690 V rated value	79.2 A
 at AC-5b up to 400 V rated value at AC-6a 	66.4 A
	70 A
— up to 230 V for current peak value n=20 rated value	
 — up to 400 V for current peak value n=20 rated value — up to 500 V for current peak value n=20 rated value 	70 A 70 A
— up to 500 V for current peak value n=20 rated value	58 A
• at AC-6a	50 A
 up to 230 V for current peak value n=30 rated value 	46.7 A
— up to 200 V for current peak value n=30 rated value	46.7 A
— up to 500 V for current peak value n=30 rated value	46.7 A
— up to 690 V for current peak value n=30 rated value	46.7 A
minimum cross-section in main circuit at maximum AC-1 rated	35 mm ²
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	30 A
at 690 V rated value	24 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	

— at 24 V rated value	35 A
— at 60 V rated value	6 A
— at 220 V rated value	1 A
— at 440 V rated value	0.1 A
— at 600 V rated value	0.06 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	25 A
— at 220 V rated value	5 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	25 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.35 A
operating power	
at AC-2 at 400 V rated value	37 kW
• at AC-3	
- at 230 V rated value	22 kW
— at 200 V rated value	37 kW
	37 KW
- at 500 V rated value	
— at 690 V rated value	45 kW
• at AC-3e	
- at 230 V rated value	22 kW
— at 400 V rated value	37 kW
— at 500 V rated value	37 kW
— at 690 V rated value	45 kW
operating power for approx. 200000 operating cycles at AC- 4	
 at 400 V rated value 	15.8 kW
at 690 V rated value	21.8 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	27.8 kVA
• up to 400 V for current peak value n=20 rated value	48.4 kVA
• up to 500 V for current peak value n=20 rated value	60.6 kVA
	69.3 kVA
up to 690 V for current peak value n=20 rated value	00.0 KVA
operating apparent power at AC-6a	18.6 kV/A
up to 230 V for current peak value n=30 rated value	18.6 kVA
• up to 400 V for current peak value n=30 rated value	32.3 kVA
up to 500 V for current peak value n=30 rated value	40.4 kVA
up to 690 V for current peak value n=30 rated value	55.8 kVA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	1 298 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	898 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	640 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	414 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	333 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	5 000 1/h
operating frequency	
at AC-1 maximum	700 1/h
	350 1/h
• at AC-2 maximum	
• at AC-3 maximum	500 1/h
at AC-3e maximum	500 1/h
at AC-4 maximum	150 1/h
Control circuit/ Control	

type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	110 V
• at 60 Hz rated value	120 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	212 VA
● at 60 Hz	188 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.69
• at 60 Hz	0.65
apparent holding power of magnet coil at AC	
• at 50 Hz	18.5 VA
• at 60 Hz	16.5 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.36
• at 60 Hz	0.39
closing delay	
• at AC	10 80 ms
opening delay	
• at AC	10 18 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous	1
contact number of NO contacts for auxiliary contacts instantaneous	1
contact	
operational current at AC-12 maximum	10 A
operational current at AC-15	10.4
at 230 V rated value	10 A
at 400 V rated value	3 A
at 500 V rated value	2 A
at 690 V rated value	1 A
operational current at DC-12	10.4
• at 24 V rated value	10 A
at 48 V rated value	6 A
• at 60 V rated value	6 A
• at 110 V rated value	3 A
at 125 V rated value	2 A
• at 220 V rated value	1 A
at 220 V rated valueat 600 V rated value	
at 220 V rated value at 600 V rated value operational current at DC-13	1 A 0.15 A
at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value	1 A 0.15 A 10 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value 	1 A 0.15 A 10 A 2 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value 	1 A 0.15 A 10 A 2 A 2 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 60 V rated value at 110 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 110 V rated value at 125 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rate	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 65 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 480 V rated value at 480 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 65 A
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value total current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value 	1 A 0.15 A 10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 65 A

— at 230 V rated value	15 hp
• for 3-phase AC motor	
— at 200/208 V rated value	20 hp
— at 220/230 V rated value	25 hp
— at 460/480 V rated value	50 hp
— at 575/600 V rated value	60 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
 for short-circuit protection of the main circuit 	
— with type of coordination 1 required	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
 — with type of assignment 2 required 	gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
side-by-side mounting	Yes
height	114 mm
width	55 mm
depth	130 mm
required spacing	
 with side-by-side mounting 	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
 for grounded parts 	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
 for auxiliary and control circuit 	screw-type terminals
 at contactor for auxiliary contacts 	Screw-type terminals
 of magnet coil 	Screw-type terminals
type of connectable conductor cross-sections for main contacts	
solid or stranded	2x (1 35 mm²), 1x (1 50 mm²)
 finely stranded with core end processing 	2x (1 25 mm ²), 1x (1 35 mm ²)
connectable conductor cross-section for main contacts	
 finely stranded with core end processing 	1 35 mm²
connectable conductor cross-section for auxiliary contacts	
solid or stranded	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 2.5 mm ²
type of connectable conductor cross-sections	
for auxiliary contacts	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
— finely stranded with core end processing	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)
AWG number as coded connectable conductor cross section	
for main contacts	18 1
for auxiliary contacts	20 14
- TOT AUXILIARY COTTACTS	

product function						
mirror contact according to IEC 60947-4-1		`	Yes			
 positively driven 	operation according to IE	C 60947-5-1	No			
310 value with high der	mand rate according to SN	31920	1 000 000			
proportion of dangero	ous failures					
 with low demand 	I rate according to SN 319	20 4	40 %			
 with high deman 	d rate according to SN 31	920 7	73 %			
ailure rate [FIT] with lo	w demand rate according	to SN 31920	100 FIT			
F1 value for proof test i \$1508	nterval or service life acco	rding to IEC 2	20 a			
protection class IP on the front according to IEC 60529		EC 60529	IP20			
ouch protection on th	he front according to IEC	60529 f	finger-safe, for vertical contact	from the front		
uitability for use						
 safety-related sw 	/itching OFF	`	Yes			
rtificates/ approvals						
General Product App	roval					
(SP) Em		<u>Confirmation</u>		KC	EHC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Co	onformity	Test Certificates		
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	UK CA	CE EG-Konf.	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific</u> ates/Test Repor	
Marine / Shipping						
Marine / Shipping	BUREAU VERITAS		Lloydis Register us	PRS	RINA	
ABS	BUREAU VERITAS		Lis	PRS Dangerous Good	Environment	
	Other Confirmation	<u>Confirmation</u>				

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RT2038-1AK60

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-1AK60

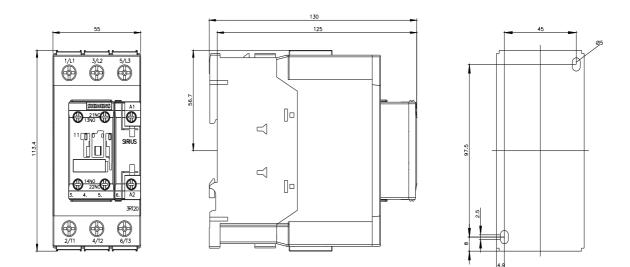
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AK60

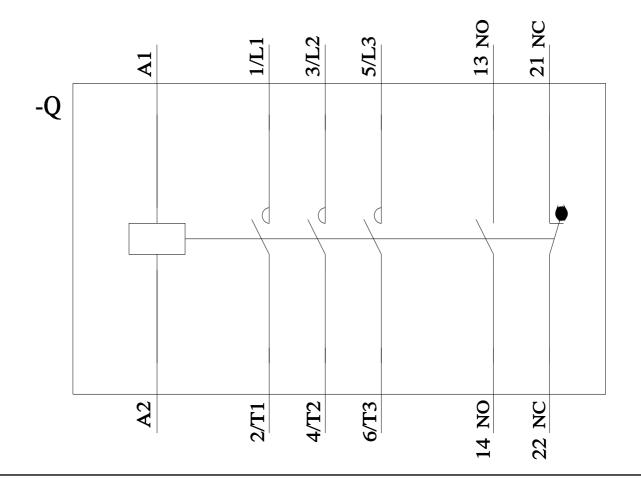
```
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-1AK60&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AK60/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-1AK60&objecttype=14&gridview=view1





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2/10/2023 🖸