SIEMENS

Data sheet 3RT2025-2KG40



power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 125 V DC with integrated varistor 3-pole, size S0, spring-type terminal suitable for PLC outputs not expandable with auxiliary switch

product brand name	SIRIUS
product designation	Coupling contactor
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
 function module for communication 	No
auxiliary switch	No
power loss [W] for rated value of the current	
 at AC in hot operating state 	1.8 W
 at AC in hot operating state per pole 	0.6 W
 without load current share typical 	4.5 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
 of main circuit rated value 	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 10 ms
mechanical service life (switching cycles)	
 of contactor typical 	10 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
 during operation 	-25 +60 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

Main circuit	
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 value	40 A
• at AC-1	
 up to 690 V at ambient temperature 40 °C rated value 	40 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	35 A
• at AC-3	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-3e	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-4 at 400 V rated value	15.5 A
• at AC-5a up to 690 V rated value	35.2 A
at AC-5b up to 400 V rated value	14.1 A
• at AC-6a	
up to 230 V for current peak value n=20 rated value	11.4 A
 up to 400 V for current peak value n=20 rated value 	11.4 A
 up to 500 V for current peak value n=20 rated value 	11.4 A
 up to 690 V for current peak value n=20 rated value at AC-6a 	11.3 A
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
 up to 500 V for current peak value n=30 rated value 	7.6 A
— up to 690 V for current peak value n=30 rated value	7.6 A
minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating	10 mm ²
cycles at AC-4	
• at 400 V rated value	7.7 A
• at 690 V rated value	7.7 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	35 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	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
	1A
— at 440 V rated value — at 600 V rated value	1 A 0.8 A
	0.0 A
 with 3 current paths in series at DC-1 	

— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 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	20 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
with 2 current paths in series at DC-3 at DC-5	0.0071
— at 24 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
	0.16 A
— at 600 V rated value	0.10 A
with 3 current paths in series at DC-3 at DC-5 at 24 V roted value.	25 A
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• at AC-2 at 400 V rated value	7.5 kW
• at AC-3	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	11 kW
• at AC-3e	
— at 230 V rated value	4 kW
— at 400 V rated value	4.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	11 kW
operating power for approx. 200000 operating cycles at AC-4	
at 400 V rated value	3.5 kW
at 690 V rated value	6 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	4.5 kVA
• up to 400 V for current peak value n=20 rated value	7.8 kVA
 up to 500 V for current peak value n=20 rated value 	9.9 kVA
• up to 690 V for current peak value n=20 rated value	13.6 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	3 kVA
• up to 400 V for current peak value n=30 rated value	5.2 kVA
• up to 500 V for current peak value n=30 rated value	6.6 kVA
• up to 690 V for current peak value n=30 rated value	9.1 kVA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 10 s switching at zero current maximum	180 A; Use minimum cross-section acc. to AC-1 rated value
limited to 30 s switching at zero current maximum	115 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	2.1., 2.50 mmman orași socion doc to 710 7 futou futu
at DC	1 500 1/h
operating frequency	1 000 1111
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	1 000 1/h
■ at AU-Z maximum	1 000 1/11

In AC-9 maximum	• at AC-3 maximum	1 000 1/h
ACA- imadmum 300 fth Control supuly voltage DC		
Control circuit/ Control Type of voitage of the control supply voitage or trated value • rated value • rate		
Type of voltage of the control supply voltage DC		300 1/11
Control supply voltage at DC		DC.
125 V 125		DC
operating angle factor control supply voltage rated value of magnet coil at DC • initial value • initial v		405.1/
value of magnet coil at DC		125 V
design of the surge suppressor with variator closing power of magnet coil at DC 4.5 W	-	0.7
Closing power of magnet coil at DC	• full-scale value	1.25
Closing power of magnet coil at DC		with varistor
Action A		4.5 W
e at DC		4.5 W
e at DC		
arcing time		52 270 ms
arcing time	opening delay	
Control version of the switch operating mechanism Standard A1 - A2		19 21 ms
Control version of the switch operating mechanism Standard A1 - A2	arcing time	10 10 ms
Auxiliary circuit number of NC contacts for auxiliary contacts 1		Standard A1 - A2
number of NC contacts for auxiliary contacts 1		
instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15		1
instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 690 V rated value • at 690 V rated value • at 48 V rated value • at 48 V rated value • at 100 V rated value • at 48 V rated value • at 100 V rated value • at 100 V rated value • at 220 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 100 V rated value • at 110 V rated value • at 110 V rated value • at 120 V rated value • at 200 V rated value • at 200 V rated value • at 600 V rated value • at 200 V rated value • at 600 V rated value • at 200 V rated value • at 480 V rated value • at 600 V rated value • at		
Operational current at AC-12 maximum 10 A		1
operational current at AC-15		40.4
		10 A
	•	10 A
• at 690 V rated value 10 A operational current at DC-12 • at 24 V rated value 6 A • at 48 V rated value 6 A • at 60 V rated value 3 A • at 125 V rated value 11 A • at 220 V rated value 1 A • at 220 V rated value 1 A • at 600 V rated value 10 A • at 48 V rated value 2 A • at 48 V rated value 2 A • at 48 V rated value 2 A • at 60 V rated value 1 A • at 600 V rated value 2 A • at 60 V rated value 1 A • at 125 V rated value 1 A • at 125 V rated value 1 A • at 125 V rated value 1 A • at 120 V rated value 1 A • at 120 V rated value 1 A • at 220 V rated value 1 A • at 600 V rated value		
Operational current at DC-12		
		I A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 1220 V rated value 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 60 V rated value at 10 A at 10 V rated value at 10 A at 10 V rated value at 20 V rated value at 30 V rated value at 600 V rated value at 48 V rated value at 48 V rated value at 48 0 V rated value at 600 V rated value at 200 V rated value at 5 hp 	•	40.4
 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 1 A at 600 V rated value 0.15 A Operational current at DC-13 at 24 V rated value at 24 V rated value at 48 V rated value at 600 V rated value 2 A at 110 V rated value 1 A at 125 V rated value 0.9 A at 220 V rated value 0.9 A at 200 V rated value 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value at 7 A ylelded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value at 230 V rated value at 7 A ylelded mechanical performance [hp] for single-phase AC motor at 230 V rated value at 200/208 V rated value at 200/208 V rated value by a hp at 200/208 V rated value at 4 p at 200/230 V rated value by a hp at 220/230 V rated value by a hp 		
 at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value 1 A at 220 V rated value 0.15 A 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 125 V rated value at 120 V rated value at 220 V rated value at 200 V rated value at 600 V rated value at 480 V rated value at 200 V rated value at 200/208 V rated value at 200/208 V rated value bt p 		
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 8 V rated value at 60 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 200 V rated value at 3 A at 600 V rated value at 7 A UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value at 7 A yielded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor for 3-phase AC motor<!--</td--><td></td><td></td>		
 at 220 V rated value at 600 V rated value 0.15 A operational current at DC-13 at 24 V rated value at 48 V rated value at 600 V rated value at 600 V rated value at 110 V rated value at 125 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 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value for 3-phase AC motor 		
• at 600 V rated value 0.15 A operational current at DC-13 • at 24 V rated value 10 A • at 48 V rated value 2 A • at 60 V rated value 2 A • at 110 V rated value 1 A • at 125 V rated value 0.9 A • at 220 V rated value 0.3 A • at 600 V rated value 0.1 A contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value 17 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 3 hp • for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp		
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 125 V rated value at 220 V rated value at 600 V rated value at 480 V rated value at 600 V rated value at 7 A yielded mechanical performance [hp] for single-phase AC motor at 10/120 V rated value at 230 V rated value at 200/208 V rated value at 200/208 V rated value at 200/208 V rated value bp 		0.15 A
 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 600 V rated value at 480 V rated value at 480 V rated value at 600 V rated value at 600 V rated value at 1480 V rated value at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 200/230 V rated value bp 	•	40.4
 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 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value at 200/208 V rated value at 200/208 V rated value bp at 220/230 V rated value at pp bp 		
 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 auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 220/230 V rated value bp 		
 at 125 V rated value at 220 V rated value at 600 V rated value 0.1 A Contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value shp for 3-phase AC motor at 200/208 V rated value 3 hp at 220/230 V rated value 5 hp 		
 at 220 V rated value at 600 V rated value 0.1 A contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value at 200/208 V rated value 3 hp at 200/208 V rated value at 220/230 V rated value 5 hp 		
 at 600 V rated value 0.1 A contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 17 A yielded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value 3 hp at 200/208 V rated value 5 hp 		
contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value 17 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value 3 hp • at 220/230 V rated value 5 hp		
UL/CSA ratings full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value 17 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp		
full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value 17 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 5 for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp		Flaulty Switching per 100 million (17 V, 1 mA)
 at 480 V rated value at 600 V rated value 17 A yielded mechanical performance [hp] for single-phase AC motor — at 110/120 V rated value at 230 V rated value for 3-phase AC motor — at 200/208 V rated value 3 hp at 220/230 V rated value 5 hp 		
 at 600 V rated value yielded mechanical performance [hp] for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp 		44.0
yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 3 hp • for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp		
 for single-phase AC motor — at 110/120 V rated value 1 hp — at 230 V rated value 3 hp for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp 		1/ A
 — at 110/120 V rated value — at 230 V rated value ● for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value 5 hp 		
 — at 230 V rated value ● for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value 5 hp 		Alle
◆ for 3-phase AC motor — at 200/208 V rated value 3 hp — at 220/230 V rated value 5 hp		·
- at 200/208 V rated value 3 hp - at 220/230 V rated value 5 hp		3 np
— at 220/230 V rated value 5 hp	•	
·		·
— at 460/480 V rated value 10 hp		·
	— at 460/480 V rated value	10 hp

A E7E/CCO V t- 1 t	4F ha
— at 575/600 V rated value	15 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: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
 — with type of assignment 2 required 	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
for short-circuit protection of the auxiliary switch required.	gG: 10 A (500 V, 1 kA)
required Installation/ mounting/ dimensions	
3	1/4000
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 standard mounting rail according to DIN EN 60715
side-by-side mounting	Yes
height	102 mm
width	45 mm
depth	107 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	spring-loaded terminals
 for auxiliary and control circuit 	spring-loaded terminals
 at contactor for auxiliary contacts 	Spring-type terminals
of magnet coil	Spring-type terminals
type of connectable conductor cross-sections	
for main contacts	
— solid	2x (1 10 mm²)
— solid or stranded	2x (1 10 mm²)
 finely stranded with core end processing 	2x (1 6 mm²)
— finely stranded without core end processing	2x (1 6 mm²)
at AWG cables for main contacts	2x (18 8)
connectable conductor cross-section for main contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
 finely stranded with core end processing 	1 6 mm²
finely stranded without core end processing	1 6 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 1.5 mm²
finely stranded without core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	

 finely stranded with core end processing 	2x (0.5 1.5 mm²)
 finely stranded without core end processing 	2x (0.5 2.5 mm²)
 at AWG cables for auxiliary contacts 	2x (20 14)
AWG number as coded connectable conductor cross section	
 for main contacts 	18 8
 for auxiliary contacts 	20 14
Safety related data	
product function	
 mirror contact according to IEC 60947-4-1 	Yes
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
 with high demand rate according to SN 31920 	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 y
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
suitability for use	
 safety-related switching OFF 	Yes

Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>



Functional
EMC Safety/Safety of Declaration of Conformity Test Certificates
Machinery



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













Marine / Shipping other Dangerous Good



Confirmation



Transport Information

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=3RT2025-2KG40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-2KG40

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

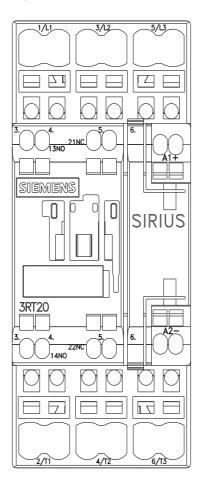
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-2KG40

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-2KG40&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-2KG40/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-2KG40&objecttype=14&gridview=view1



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