SIEMENS

Data sheet

3RT2027-1BB40-0CC0



power contactor, AC-3e/AC-3, 32 A, 15 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0, communication-capable

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
product extension	
 function module for communication 	Yes
auxiliary switch	Yes
power loss [W] for rated value of the current	
 at AC in hot operating state 	6.3 W
 at AC in hot operating state per pole 	2.3 W
 without load current share typical 	5.9 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 protective separation 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 (operating 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	50 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated	42 A
value	
● at AC-3	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
at AC-4 at 400 V rated value	22 A
• at AC-5a up to 690 V rated value	44 A
 at AC-5b up to 400 V rated value at AC-6a 	26.5 A
	30.8 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 	30.8 A 27 A
— up to 500 V for current peak value n=20 rated value	21 A 21 A
• at AC-6a	21A
 up to 230 V for current peak value n=30 rated value 	20.5 A
— up to 200 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	18 A
— up to 690 V for current peak value n=30 rated value	18 A
minimum cross-section in main circuit at maximum AC-1 rated	10 mm ²
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	12 A
at 690 V rated value	12 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	35 A
— at 60 V rated value	20 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 60 V rated value	35 A
— at 110 V rated value	35 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	35 A
— at 60 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 82 V ratid value 20 Å - at 101 V ratid value 25 Å - at 201 V ratid value 0.00 Å - at 440 V ratid value 0.00 Å - at 410 V ratid value 0.00 Å - at 100 V ratid value 0.00 Å - at 100 V ratid value 0.00 Å - at 200 V ratid value 10.00 Å - at 200 V ratid value 10.00 Å - at 200 V ratid value 10.00 Å - at 200 V ratid value		
	— at 24 V rated value	20 A
- of 220 Vraide value 1 A - of 440 Vraide value 0.65 A - of 100 Vraide value 35 A - of 101 Vraide value 35 A - of 102 Vraide value 35 A - of 110 Vraide value 36 A - of 22 Vraide value 36 A - of 23 Orlitide value 7.5 kW - of 23 Orlitide value 105 kW - of 23 Orlitide value 105 kW - of 23 Orlitide value 105 kW <td>— at 60 V rated value</td> <td>5 A</td>	— at 60 V rated value	5 A
	— at 110 V rated value	2.5 A
	— at 220 V rated value	1 A
 with 2 current path is series at DC-3 at DC-5 at 24 V rated value 35 A at 60 V rated value 36 A at 10 V rated value 37 A at 40 V rated value 38 A at 40 V rated value 39 A at 40 V rated value 27 A at 40 V rated value 28 A at 10 V rated value 28 A at 40 V rated value 35 KW at 40 V rated value 36 KW at 40 V rated value 37 KW at 40 V rated value 38 KW at 40 V rated value<td>— at 440 V rated value</td><td>0.09 A</td>	— 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 	
	— at 24 V rated value	35 A
	— at 60 V rated value	35 A
- al 440 V rated value 0.27 A - al 600 V rated value 0.16 A - al 24 V rated value 35 A - al 24 V rated value 35 A - al 110 V rated value 35 A - al 120 V rated value 0.6 A - al 420 V rated value 0.6 A - al 400 V rated value 0.5 K - al 400 V rated value 15 KW - al 400 V rated value 15 KW - al 400 V rated value 15 KW - al 600 V rated value 10 KW -	— at 110 V rated value	15 A
→ at 600 V rated value 0.16 A → with 3 current path in series at DC-3 tDC-5 35 A → at 60 V rated value 35 A → at 60 V rated value 35 A → at 60 V rated value 35 A → at 20 V rated value 0.6 A → at 60 V rated value 15 KW → at 60 V rated value 16 KW → at 60 V rated value 10 KW → at 60 V rated value 12 KWA → at	— at 220 V rated value	3 A
• with 3 current paths in series at DC-3 at DC-5SA- at 24 V rated value35 A- at 26 V rated value35 A- at 110 V rated value36 A- at 220 V rated value0.6 A- at 230 V rated value0.6 A- at 230 V rated value0.6 A- at 230 V rated value15 kW- at 600 V rated value12 kWA- at 600 V rated value12 kWA- at 600 V rated value12 kWA- at 600 V rated value20 rated value- at 600 V rated value21 sWA- up to 600 V for current pack value n=20 rated value23 kWA- up to 500 V for current pack value n=20 rated value23 kWA- up to 500 V for current pack value n=30 rated value23 kWA- up to 500 V for current pack value n=30 rated value23 kWA- up to 500 V for current pack value n=30 rated value21 kWA- up to 500 V for current pack value n=30 rated value21 kWA- up to 500 V for current pack value n=30 rated value12 kWA<	— at 440 V rated value	0.27 A
• with 3 current paths in series at DC-3 at DC-5SA- at 24 V rated value35 A- at 26 V rated value35 A- at 110 V rated value36 A- at 220 V rated value0.6 A- at 230 V rated value0.6 A- at 230 V rated value0.6 A- at 230 V rated value15 kW- at 600 V rated value12 kWA- at 600 V rated value12 kWA- at 600 V rated value12 kWA- at 600 V rated value20 rated value- at 600 V rated value21 sWA- up to 600 V for current pack value n=20 rated value23 kWA- up to 500 V for current pack value n=20 rated value23 kWA- up to 500 V for current pack value n=30 rated value23 kWA- up to 500 V for current pack value n=30 rated value23 kWA- up to 500 V for current pack value n=30 rated value21 kWA- up to 500 V for current pack value n=30 rated value21 kWA- up to 500 V for current pack value n=30 rated value12 kWA<	— at 600 V rated value	0.16 A
	 with 3 current paths in series at DC-3 at DC-5 	
	-	35 A
operating power at AC-3 at 200 Vrated value at 400 Vrated value bt W at 500 Vrated value bt W at AC-3e at AC-3e at 200 Vrated value bt W at AC-3e at AC-3e at 00 Vrated value bt W at AC-3e at AC-3e at AC-3e at AC-3e at AC-3e at 00 Vrated value bt W at 600 Vrated value bt W at 600 Vrated value bt W at 600 Vrated value bt W at 600 Vrated value bt W bt 000 V for current peak value n=20 rated value bt 000 V for current peak value n=20 rated value bt 000 V for current peak value n=20 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for current peak value n=30 rated value bt 000 V for curre		
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• up to 400 V for current peak value n=30 rated value14.2 kVA• up to 500 V for current peak value n=30 rated value15.5 kVA• up to 690 V for current peak value n=30 rated value21.5 kVAshort-time withstand current in cold operating state up to 40 °C499 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum499 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum260 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated value• at DC1 500 1/h• at DC1 500 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h		0.411/4
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• up to 690 V for current peak value n=30 rated value21.5 kVAshort-time withstand current in cold operating state up to 40 °C499 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum499 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum341 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum260 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• at DC1 500 1/h• at DC1 500 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h		
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40 °C• limited to 1 s switching at zero current maximum499 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s switching at zero current maximum341 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum260 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching frequency1 500 1/h• at DC1 500 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h		21.5 kVA
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• limited to 5 s switching at zero current maximum341 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum260 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum199 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated value• at DC1 500 1/h• at DC1 500 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h		400 At Lee minimum cross section and to AC 4 roted value
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• limited to 60 s switching at zero current maximum162 A; Use minimum cross-section acc. to AC-1 rated valueno-load switching frequency1 500 1/h• at DC1 500 1/h• operating frequency1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h	-	
no-load switching frequency• at DC1 500 1/hoperating frequency	-	
• at DC 1 500 1/h operating frequency - • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3e maximum 750 1/h • at AC-4 maximum 250 1/h		16∠ A; Use minimum cross-section acc. to AC-1 rated value
operating frequency1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3e maximum750 1/h• at AC-4 maximum250 1/h		4 500 4 //
• at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3e maximum 750 1/h • at AC-4 maximum 250 1/h		1 500 1/h
• at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3e maximum 750 1/h • at AC-4 maximum 250 1/h	operating frequency	
• at AC-3 maximum 750 1/h • at AC-3e maximum 750 1/h • at AC-4 maximum 250 1/h		1,000,1/b
• at AC-3e maximum 750 1/h • at AC-4 maximum 250 1/h		
• at AC-4 maximum 250 1/h	• at AC-2 maximum	750 1/h
	 at AC-2 maximum at AC-3 maximum	750 1/h 750 1/h
Control circuit/ Control	 at AC-2 maximum at AC-3 maximum at AC-3e maximum 	750 1/h 750 1/h 750 1/h
	 at AC-2 maximum at AC-3 maximum at AC-3e maximum at AC-4 maximum 	750 1/h 750 1/h 750 1/h

type of voltage of the control supply voltage	DC
control supply voltage at DC	
rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
initial value	0.8
full-scale value	1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay	
• at DC	50 170 ms
opening delay	
• at DC	15 18 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2, optionally via function module
Auxiliary circuit	4
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
• 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	
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	1A
at 600 V rated value operational current at DC-13	0.15 A
at 24 V rated value	10 A
at 48 V rated value	2 A
• at 60 V rated value	2 A
at 100 V rated value	1A
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	27 A
at 600 V rated value	27 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	20 hp
— at 575/600 V rated value	25 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: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
· · · ·	

- with type of assignment 2 required

• for short-circuit protection of the auxiliary switch required

gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA) 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	85 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	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	2x (1 2.5 mm²), 2x (2.5 10 mm²)		
 solid or stranded 	2x (1 2.5 mm²), 2x (2.5 10 mm²)		
 finely stranded with core end processing 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²		
connectable conductor cross-section for main contacts			
• solid	1 10 mm²		
stranded	1 10 mm ²		
 finely stranded with core end processing 	1 10 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 mm²		
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 mm²), 2x (0.75 2.5 mm²)		
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)		
AWG number as coded connectable conductor cross section			
for main contacts	16 8		
 for auxiliary contacts 	20 14		
Safety related data			
product function			
• mirror contact according to IEC 60947-4-1	Yes		
suitability for use safety-related switching OFF	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		

protection class IP o	n the front according to I	EC 60529 IP2	0		
protection class IP on the front according to IEC 60529				from the front	
touch protection on the front according to IEC 60529 Certificates/ approvals		111g	finger-safe, for vertical contact from the front		
General Product Ap	provai				
SP.	<u>Confirmation</u>			KC	EHC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Confe	ormity	Test Certificates	
RCM	Type Examination Cer- tificate	UK CA	CE EG-Konf.	Type Test Certific- ates/Test Report	<u>Special Test Certific</u> ate
Test Certificates	Marine / Shipping				
<u>Miscellaneous</u>	ABS	BUREAU VERITAS		Lloyd's Register uis	RINA
Marine / Shipping	other		Railway	Dangerous Good	Environment
KMRS RAME	<u>Confirmation</u>		Vibration and Shock	Transport Information	Environmental Cor firmations
rther information					

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=3RT2027-1BB40-0CC0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-1BB40-0CC0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1BB40-0CC0

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

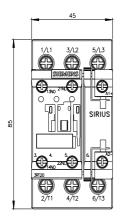
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1BB40-0CC0&lang=en

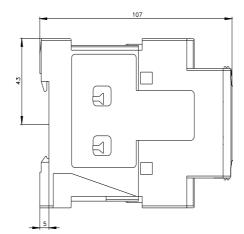
Characteristic: Tripping characteristics, I²t, Let-through current

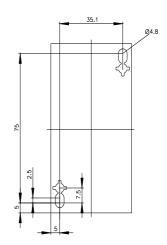
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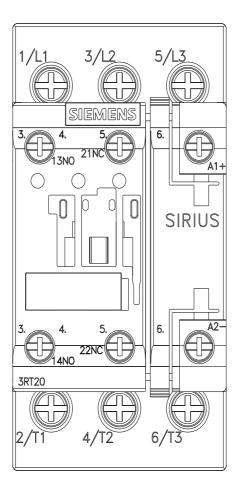
Further characteristics (e.g. electrical endurance, switching frequency)

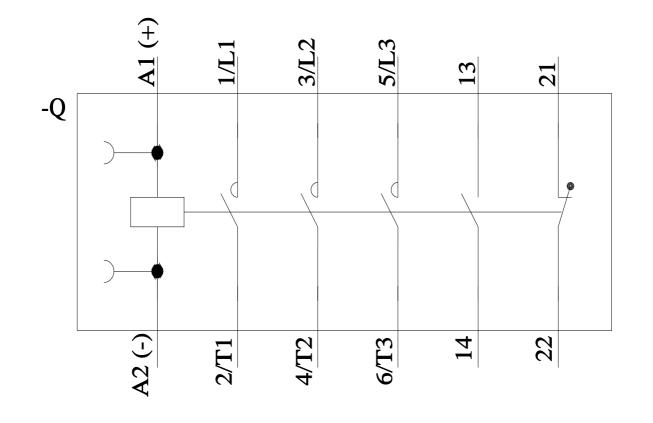
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1BB40-0CC0&objecttype=14&gridview=view1











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