SIEMENS

Data sheet 3RF2450-1AC45



Solid-state contactor 3-phase 3RF2 AC 51 / 50 A / 40 $^{\circ}$ C 48-600 V / 4-30 V DC 3-phase controlled screw terminal Blocking voltage 1200 V

product designation design of the product product type designation annufacturer's article number • _2 of the accessories that can be ordered product designation • _2 of the accessories that can be ordered product designation • _2 of the accessories that can be ordered converter General technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution type of voltage of the control supply voltage surge voltage resistance acc. to IEC 60068-2-07 shock resistance acc. to IEC 60068-2-02 substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value • at 60 Hz rated value • at 60 Hz • at 50 Hz • at 60 Hz	product brand name	SIRIUS
product type designation manufacturer's article number • 2 of the accessories that can be ordered product designation • 2 of the accessories that can be ordered converter General technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole • per pole • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 tipication resistance acc. to IEC 60068-2-6 greference code acc. to IEC 60088-2-6 greference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of NO contacts for main contacts number of NO contacts for main contacts operating voltage at AC • at 50 Hz rated value value	product designation	solid-state contactor
manufacturer's article number • 2 of the accessories that can be ordered product designation • 2 of the accessories that can be ordered converter General technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution stype of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-2 Substance Prohibitance (Date) Main circuit number of NO contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz	design of the product	three-phase controlled
• _2 of the accessories that can be ordered product designation • _2 of the accessories that can be ordered converter Ceneral technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 6 kV shock resistance acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 60068-2-6 2g Substance Prohibitance (Date) 0 1.07.2006 00:00:00 Main circuit number of NC contacts for main contacts number of NC contacts for main contacts 1 anumber of NC contacts for main contacts 1 operating voltage at AC • at 50 Hz rated value • at 60 Hz	product type designation	3RF24
product designation • _2 of the accessories that can be ordered General technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value \$\frac{600 \text{ V}}{600 \text{ V}}\$ \$\frac{150}{3} \text{ 11 ms}\$ \$\frac{150}{3} \text{ 12 ms}\$ \$\frac{100}{3} \text{ 10 ms}\$ \$\frac{150}{3} \text{ 12 ms}\$ \$\frac{100}{3} \text{ 10 ms}\$ \$\frac{100}{3} 10	manufacturer's article number	
• _2 of the accessories that can be ordered General technical data product function power loss [W] for rated value of the current at AC in hot operating state • per pole • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 600 ∨ degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 6 kV shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 6346-2 Q Substance Prohibitance (Date) 01.07.2006 00:00:00 Main circuit number of poles for main current circuit 3 number of NC contacts for main contacts 3 number of NC contacts for main contacts 0 operating voltage at AC • at 50 Hz rated value 48 600 ∨ • at 60 Hz rated value operating range relative to the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	 _2 of the accessories that can be ordered 	3RF2900-0EA18
product function power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 6 6 kV shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) 01.07.2006 00:00:00 Main circuit number of poles for main current circuit number of NC contacts for main contacts number of NC contacts for main contacts 0 operating voltage at AC • at 50 Hz rated value 48 600 V e at 60 Hz rated value operating range relative to the operating frequency operating range relative to the operating voltage at AC • at 60 Hz	product designation	
product function power loss [W] for rated value of the current at AC in hot operating state • per pole • per pole 53.33 W power loss [W] for rated value of the current without load current share typical insulation voltage rated value 600 V degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 6 kV shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) 01.07.2006 00:00:00 Main circuit number of poles for main current circuit a number of NO contacts for main contacts 3 number of NC contacts for main contacts 0 operating voltage at AC • at 50 Hz rated value 48 600 V • at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	 _2 of the accessories that can be ordered 	converter
power loss [W] for rated value of the current at AC in hot operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 tybration resistance acc. to IEC 60068-2-6 guesterence code acc. to IEC 80068-2-6 2g Substance Prohibitance (Date) Main circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value e at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	General technical data	
operating state • per pole power loss [W] for rated value of the current without load current share typical insulation voltage rated value degree of pollution type of voltage of the control supply voltage preference code acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-6 greference code acc. to IEC 81346-2 Questiance Prohibitance (Date) Main circuit number of poles for main current circuit number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	product function	zero-point switching
power loss [W] for rated value of the current without load current share typical insulation voltage rated value 600 V degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value 6 kV shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of poles for main current circuit 3 number of NO contacts for main contacts 3 number of NC contacts for main contacts 0 operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value • at 50 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz • at 60 Hz • at 60 Hz operational current operational current one of NC • at 60 V • at 60 V • at 60 Hz • at 60 Hz • at 60 Hz operational current operational current one of NC • at 60 V • at 60 V • at 60 V		160 W
insulation voltage rated value degree of pollution 3 type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 60 Hz • at 60 Hz • at 60 Hz operational current operational current operational current operational current operational current	• per pole	53.33 W
degree of pollution type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 tibration resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Qusubstance Prohibitance (Date) Main circuit number of poles for main current circuit number of NC contacts for main contacts operating voltage at AC at 50 Hz rated value elative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC at 50 Hz elatio Hz operating range relative to the operating voltage at AC at 60 Hz elatio Hz operational current		0.9 W
type of voltage of the control supply voltage surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 15g / 11 ms vibration resistance acc. to IEC 60068-2-6 2g reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) 01.07.2006 00:00:00 Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	insulation voltage rated value	600 V
surge voltage resistance of main circuit rated value shock resistance acc. to IEC 60068-2-27 vibration resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz operational current	degree of pollution	3
shock resistance acc. to IEC 60068-2-27 shock resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz operational current	type of voltage of the control supply voltage	DC
vibration resistance acc. to IEC 60068-2-6 reference code acc. to IEC 81346-2 Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	surge voltage resistance of main circuit rated value	6 kV
reference code acc. to IEC 81346-2 Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz • at 60 Hz operational current	shock resistance acc. to IEC 60068-2-27	15g / 11 ms
Substance Prohibitance (Date) Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	vibration resistance acc. to IEC 60068-2-6	2g
Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz 40 660 V operational current	reference code acc. to IEC 81346-2	Q
number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 50 Hz • at 60 Hz operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz	Substance Prohibitance (Date)	01.07.2006 00:00:00
number of NO contacts for main contacts number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 50 Hz • at 60 Hz operational current	Main circuit	
number of NC contacts for main contacts operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value telative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz 48 600 V 50 60 Hz 10 % frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz 40 660 V operational current	number of poles for main current circuit	3
operating voltage at AC • at 50 Hz rated value • at 60 Hz rated value operating frequency rated value telative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current 48 600 V 50 60 Hz 10 %	number of NO contacts for main contacts	3
 at 50 Hz rated value at 60 Hz rated value 48 600 V operating frequency rated value 50 60 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC at 50 Hz at 60 Hz at 60 Hz operational current 40 660 V operational current 	number of NC contacts for main contacts	0
 at 60 Hz rated value operating frequency rated value 50 60 Hz relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC at 50 Hz at 60 Hz at 60 Hz operational current 	operating voltage at AC	
operating frequency rated value relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	 at 50 Hz rated value 	48 600 V
relative symmetrical tolerance of the operating frequency operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current	at 60 Hz rated value	48 600 V
operating range relative to the operating voltage at AC • at 50 Hz • at 60 Hz operational current 40 660 V 40 660 V	operating frequency rated value	50 60 Hz
● at 50 Hz	· · · · · · · · · · · · · · · · · · ·	10 %
• at 60 Hz 40 660 V operational current	operating range relative to the operating voltage at AC	
operational current	● at 50 Hz	40 660 V
	● at 60 Hz	40 660 V
• at AC-51 rated value 50 A	operational current	
	 at AC-51 rated value 	50 A

1.40.54	00.4		
• at AC-51 acc. to IEC 60947-4-3	38 A		
acc. to UL 508 rated value	38 A		
operational current minimum	500 mA		
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/μs		
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V		
reverse current of the thyristor	10 mA		
derating temperature	40 °C		
surge current resistance rated value	1 150 A		
I2t value maximum	6 600 A ² ·s		
Control circuit/ Control			
type of voltage of the control supply voltage	DC		
control supply voltage 1			
 at DC rated value 	30 V		
• at DC	4 30 V		
control supply voltage			
 at DC initial value for signal <1> detection 	4 V		
at DC full-scale value for signal<0> recognition	1 V		
symmetrical line frequency tolerance	5 Hz		
control current at minimum control supply voltage			
• at DC	22 mA		
control current at DC rated value	30 mA		
ON-delay time	1 ms; additionally max. one half-wave		
Auxiliary circuit			
number of NC contacts for auxiliary contacts	0		
number of NO contacts for auxiliary contacts	0		
number of CO contacts for auxiliary contacts	0		
Installation/ mounting/ dimensions			
fastening method	screw fixing		
side-by-side mounting	Yes		
height	150 mm		
width	119.5 mm		
depth	130 mm		
Connections/ Terminals			
type of electrical connection			
for main current circuit	screw-type terminals		
for auxiliary and control circuit	screw-type terminals		
type of connectable conductor cross-sections			
• for main contacts	0 (4 5 0 5 3) 0 (0 5 0 3)		
— solid	2x (1.5 2.5 mm²), 2x (2.5 6 mm²)		
 finely stranded with core end processing at AWG cables for main contacts 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²		
at AVVG cables for main contacts connectable conductor cross-section for main	2x (14 10)		
contacts			
solid or stranded	1.5 6 mm²		
 finely stranded with core end processing 	1 10 mm²		
type of connectable conductor cross-sections			
 for auxiliary and control contacts 			
— solid	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)		
 finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)		
 finely stranded without core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)		
at AWG cables for auxiliary and control contacts	1x (AWG 20 12)		
AWG number as coded connectable conductor cross section for main contacts	14 10		
tightening torque			
for main contacts with screw-type terminals	2 2.5 N·m		
for auxiliary and control contacts with screw-type	0.5 0.6 N·m		
terminals	0.0 0.0 IT III		

tightening torque [lbf·in]			
for main contacts with screw-type terminals	18 22 lbf·in		
for auxiliary and control contacts with screw-type	7.5 5.3 lbf·in		
terminals	7.5 5.3 IDT·IN		
design of the thread of the connection screw			
• for main contacts	M4		
 of the auxiliary and control contacts 	M3		
stripped length of the cable			
 for main contacts 	7 mm		
 for auxiliary and control contacts 	7 mm		
Safety related data			
protection class IP on the front acc. to IEC 60529	IP20		
touch protection on the front acc. to IEC 60529	finger-safe, for vertical conta	act from the front	
Ambient conditions			
installation altitude at height above sea level maximum	1 000 m		
ambient temperature			
 during operation 	-25 +60 °C		
 during storage 	-55 +80 °C		
Electromagnetic compatibility			
conducted interference			
due to burst acc. to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2		
 due to conductor-earth surge acc. to IEC 61000-4-5 	2 kV behavior criterion 2		
 due to conductor-conductor surge acc. to IEC 61000-4-5 	1 kV behavior criterion 2		
 due to high-frequency radiation acc. to IEC 61000- 4-6 	140 dBuV in the frequency range 0.15 80 MHz, behavior criterion 1		
electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2		
conducted HF interference emissions acc. to CISPR11	Class A for industrial environment		
field-bound HF interference emission acc. to CISPR11	Class A for industrial environment		
Short-circuit protection, design of the fuse link			
manufacturer's article number			
 of full range R fuse link for semiconductor protection at NH design usable 	3NE1817-0		
 of full range R fuse link for semiconductor protection at cylindrical design usable 	5SE1350; Maximum operating voltage 400 V!		
 of back-up R fuse link for semiconductor protection at NH design usable 	<u>3NE8018-1</u>		
 of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	<u>3NC1450</u>		
 of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable 	3NC2280		
manufacturer's article number of the gG fuse at NH design usable			
• up to 460 V	3NA3812; These fuses have a smaller rated current than the semiconductor relays		
Certificates/ approvals			
General Product Approval	EMC	Declaration of Conformity	

General Product Approval EMC Declaration of Conformity











Miscellaneous

Test Certificates

other

Type Test Certificates/Test Report

Confirmation

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=3RF2450-1AC45

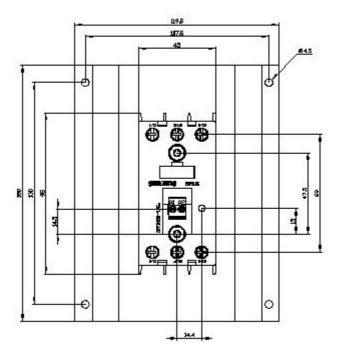
Cax online generator

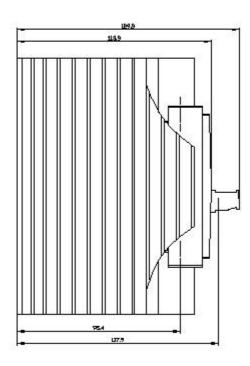
 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RF2450-1AC45}$

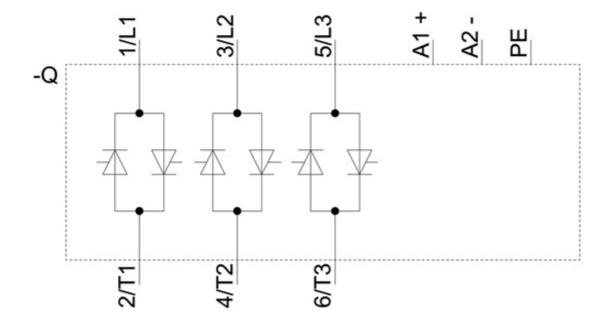
 $Service \& Support \ (Manuals, \ Certificates, \ Characteristics, \ FAQs, ...)$

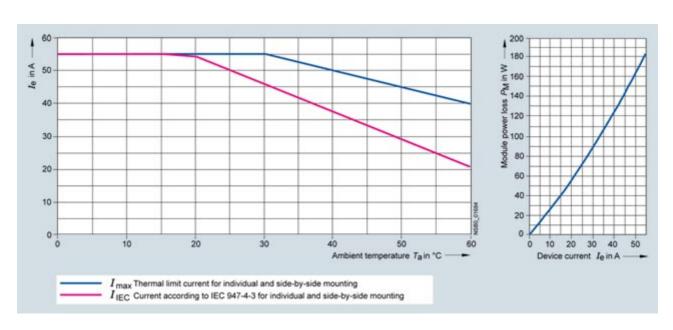
https://support.industry.siemens.com/cs/ww/en/ps/3RF2450-1AC45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2450-1AC45&lang=en









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