



power contactor AC-1 400 A / 690 V / 40 °C 3-pole, U_c: 96-127 V AC(50-60 Hz) / DC F-PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Contacteur
product type designation	3RT14
General technical data	
size of contactor	S10
product extension	
• function module for communication	No
• auxiliary switch	Yes
power loss [W] for rated value of the current	
• at AC in hot operating state	105.6 W
• at AC in hot operating state per pole	35.2 W
• without load current share typical	3.4 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	500 V
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
shock resistance at rectangular impulse	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 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)	03/01/2017
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Perfluorobutane sulfonic acid (PFBS) and its salts - -
Weight	6.624 kg
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
number of NC contacts for main contacts	0
type of voltage for main current circuit	AC
operational current	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	400 A
— up to 690 V at ambient temperature 55 °C rated value	380 A
— up to 690 V at ambient temperature 60 °C rated value	380 A
• at AC-3	
— at 400 V rated value	138 A
— at 690 V rated value	138 A
minimum cross-section in main circuit at maximum AC-1 rated value	240 mm²
no-load switching frequency	
• at AC	1 000 1/h
• at DC	1 000 1/h
operating frequency at AC-1 maximum	200 1/h
Control circuit/ Control	
type of voltage	AC/DC
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
• at 50 Hz rated value	96 ... 127 V
• at 60 Hz rated value	96 ... 127 V
control supply voltage at DC rated value	96 ... 127 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.8
• full-scale value	1.1
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
type of PLC-control input according to IEC 60947-1	Type 1
consumed current at PLC-control input according to IEC 60947-1 maximum	30 mA
design of the surge suppressor	with varistor
apparent pick-up power	
• at minimum rated control supply voltage at AC	
— at 50 Hz	400 VA
— at 60 Hz	400 VA
• at maximum rated control supply voltage at AC	
— at 60 Hz	530 VA
— at 50 Hz	530 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	530 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
apparent holding power	
• at minimum rated control supply voltage at DC	2.8 VA
• at maximum rated control supply voltage at DC	3.4 VA
apparent holding power	
• at minimum rated control supply voltage at AC	
— at 50 Hz	5.5 VA
— at 60 Hz	5.5 VA

<ul style="list-style-type: none"> • at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz 	8.5 VA 8.5 VA
apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	5 VA
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.5
closing power of magnet coil at DC	580 W
holding power of magnet coil at DC	3.4 W
closing delay	
<ul style="list-style-type: none"> • at AC • at DC 	60 ... 75 ms 60 ... 75 ms
opening delay	
<ul style="list-style-type: none"> • at AC • at DC 	115 ... 130 ms 115 ... 130 ms
arcing time	10 ... 15 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
design of the auxiliary switch	lateral, permanently connected
number of NC contacts for auxiliary contacts	2
<ul style="list-style-type: none"> • attachable • instantaneous contact 	4 2
number of NO contacts for auxiliary contacts	2
<ul style="list-style-type: none"> • attachable • instantaneous contact 	4 2
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul style="list-style-type: none"> • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value 	6 A 3 A 2 A 1 A
operational current at DC-13	
<ul style="list-style-type: none"> • 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 	10 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
design of the miniature circuit breaker for short-circuit protection of the auxiliary switch required	gG: 10 A (230 V, 400 A)
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
Short-circuit protection	
product function short circuit protection	No
design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required 	gG: 500 A (690 V, 100 kA) gR: 500 A (690 V, 100 kA) gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method side-by-side mounting	Yes
fastening method	screw fixing
height	210 mm
width	145 mm
depth	202 mm
required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards 	20 mm 10 mm

— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— forwards	20 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
• for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm

Connections/ Terminals

type of electrical connection	
• for main current circuit	Connection bar
• for auxiliary and control circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
connectable conductor cross-section for main contacts	
• solid or stranded	70 ... 240 mm ²
• stranded	70 ... 240 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded	0.5 ... 4 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²)
— solid or stranded	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²)
— 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), 1x 12

Safety related data

product function	
• mirror contact according to IEC 60947-4-1	Yes
• positively driven operation according to IEC 60947-5-1	No
• suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
safe state	off
stop category according to IEC 60204-1	0
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
IEC 62061	
Safety Integrity Level (SIL) according to IEC 62061	SIL 2
PFHD with high demand rate according to IEC 62061	4.5E-7 1/h
ISO 13849	
performance level (PL) according to ISO 13849-1	PL c
category according to ISO 13849-1	2
device type according to ISO 13849-1	1
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
Safety Integrity Level (SIL) according to IEC 61508	2
safety device type according to IEC 61508-2	Type B
PFHD with high demand rate according to IEC 61508	4.5E-7 1/h
PFDavg with low demand rate according to IEC 61508	0.007

Safe failure fraction (SFF)	93 %
hardware fault tolerance according to IEC 61508	0
T1 value of service life according to IEC 61508	20 a
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
Approvals Certificates	
General Product Approval	



[Confirmation](#)



EMV	Functional Safety	Test Certificates	other		
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[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Miscellaneous](#)

Railway	Environment
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[Special Test Certificate](#)

[Environmental Conformations](#)

Further 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=3RT1466-6SF36-3PA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1466-6SF36-3PA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1466-6SF36-3PA0>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1466-6SF36-3PA0&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1466-6SF36-3PA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1466-6SF36-3PA0&objecttype=14&gridview=view1>

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