SIEMENS

Data sheet 3RT5046-1AN20



Contactor AC 220 V 50/60 HZ AC3 45 kW 400 V 3-pole, size S3, screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT5
General technical data	
size of contactor	S3
product extension auxiliary switch	Yes
power loss [W] for rated value of the current	
● at AC in hot operating state per pole	10.8 W
● without load current share typical	7.83 W
type of calculation of power loss current-dependent	quadratic
insulation voltage rated value	1 000 V
degree of pollution	3
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
● at AC	6.8 g / 5 ms, 4 g / 10 ms
shock resistance with sine pulse	
● at AC	10.6 g / 5 ms, 6.2 g / 10 ms
mechanical service life (operating cycles)	
● of contactor typical	10 000 000
● of the contactor with added auxiliary switch block typical	10 000 000
Substance Prohibitance (day/month/year)	03/01/2017
Net Weight	1.84 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
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-3 rated value maximum	1 000 V
● at AC-3e rated value maximum	1 000 V
operational current	
● at AC-1 up to 690 V	
— at ambient temperature 40 °C rated value	120 A

Subject to change without notice
© Copyright Siemens

— at ambient temperature 60 °C rated value	100 A
● at AC-3	
— at 400 V rated value	95 A
— at 690 V rated value	58 A
● at AC-3e	
— at 400 V rated value	95 A
— at 690 V rated value	58 A
— at 1000 V rated value	30 A
connectable conductor cross-section in main circuit at AC-1	
● at 60 °C minimum permissible	35 mm²
● at 40 °C minimum permissible	50 mm²
operational current for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	42 A
● at 690 V rated value	27 A
operating power	
● at AC-1	
— at 230 V at 60 °C rated value	38 kW
— at 400 V at 60 °C rated value	66 kW
— at 690 V at 60 °C rated value	114 kW
● at AC-3	
— at 230 V rated value	22 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	55 kW
● at AC-3e	
— at 230 V rated value	22 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	55 kW
— at 1000 V rated value	37 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	22 kW
● at 690 V rated value	25.4 kW
short-time withstand current in cold operating state up to 40 °C limited to 10 s switching at zero current maximum	760 A
no-load switching frequency	
● at AC	5 000 1/h
operating frequency	
● at AC-1 maximum	900 1/h
● at AC-3 maximum	850 1/h
● at AC-3e maximum	850 1/h
● at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
● at 50 Hz rated value	220 V
● at 60 Hz rated value	220 V
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.85 ... 1.1
apparent pick-up power of magnet coil at AC	
● at 50 Hz	298 V·A
● at 60 Hz	298 V·A
inductive power factor with closing power of the coil	
● at 50 Hz	0.7
● at 60 Hz	0.7

Subject to change without notice
© Copyright Siemens

apparent holding power of magnet coil at AC	
● at 50 Hz	27 V·A
● at 60 Hz	27 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.29
● at 60 Hz	0.29
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	0
number of NO contacts for auxiliary contacts instantaneous contact	0
operational current at AC-12 maximum	10 A
operational current at AC-15	
● at 230 V rated value	6 A
● at 400 V rated value	3 A
operational current at DC-12	
● at 110 V rated value	3 A
● at 220 V rated value	1 A
operational current at DC-13	
● at 24 V rated value	6 A
● at 110 V rated value	1 A
● at 220 V rated value	0.3 A
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
yielded mechanical performance [hp] for 3-phase AC motor at 460/480 V rated value	75 hp
Short-circuit protection	
design of the fuse link	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	fuse gL/gG: 250 A
— with type of coordination 2 required	fuse gL/gG: 160 A
● for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
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 side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm and 75 mm DIN rail
height	146 mm
width	70 mm
depth	139 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	
● solid or stranded	2x (2.5 ... 16 mm²)
● finely stranded with core end processing	2x (2.5 ... 35 mm²)
● finely stranded without core end processing	2x (10 ... 35 mm²)
type of connectable conductor cross-sections	
● for auxiliary contacts	
— 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), 1x 12
Safety related data	
product function mirror contact according to IEC 60947-4-1	Yes
Electrical Safety	
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
Approvals Certificates	
General Product Approval	**EMV**

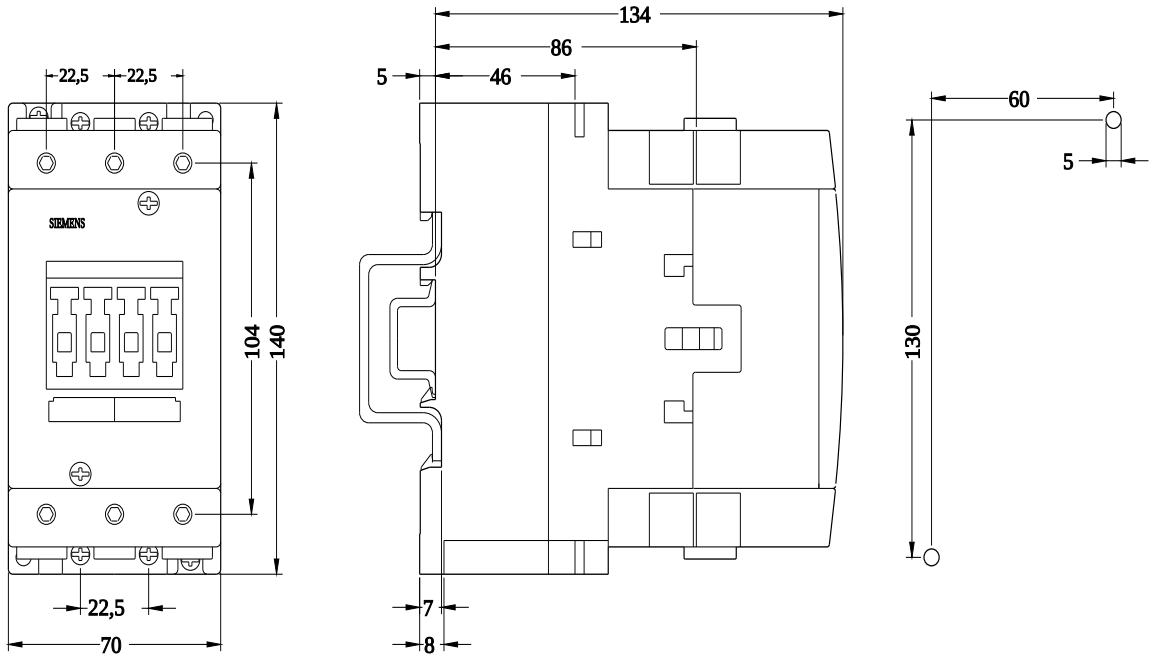
© Copyright Siemens

Confirmation

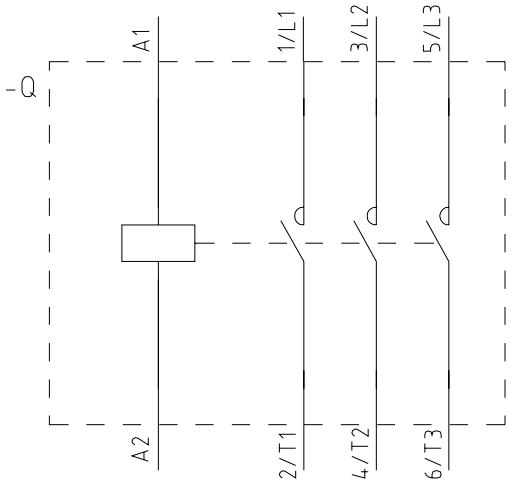
Maritime application		other		Environment
	CCS (China Classification Society)	Confirmation	Confirmation	Environmental Confirmations

Further information

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/products?pnid=16027&lc=en-CN



Subject to change without notice
© Copyright Siemens



last modified: 4/4/2026

Subject to change without notice
© Copyright Siemens