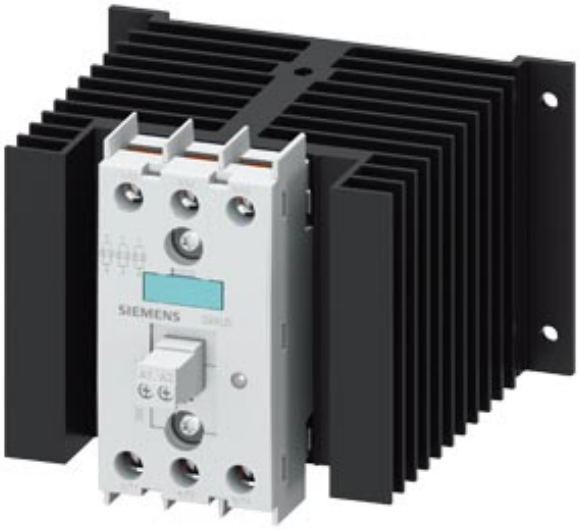
SIEMENS

Data sheet 3RF2440-1AC45

Solid-state contactor 3-phase 3RF2 AC 51 / 40 A / 40 °C 48-600 V / 4-30 V DC 3-phase controlled screw terminal Blocking voltage 1200 V



product brand name	SIRIUS
product designation	solid-state contactor
product type designation	3RF24
manufacturer's article number	
• _2 / of the accessories that can be ordered	3RF2900-0EA18
product designation	
• _2 / of the accessories that can be ordered	converter

General technical data

product function	zero-point switching
power loss [W] / for rated value of the current / at AC / in hot operating state	121 W
insulation voltage	
• rated value	600 V
degree of pollution	3
protection class IP	IP20
shock resistance / acc. to IEC 60068-2-27	15g / 11 ms
vibration resistance / acc. to IEC 60068-2-6	2g
reference code / acc. to DIN EN 81346-2	Q

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	48 ... 600 V
• at 60 Hz / rated value	48 ... 600 V
operating frequency / rated value	50 ... 60 Hz
relative symmetrical tolerance / of the operating frequency	10 %
operating range relative to the operating voltage / at AC	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V
operating current	
• at AC-51 / rated value	40 A
• acc. to UL 508 / rated value	30 A
operating 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	1 600 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 A²·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
switch-on delay time	1 ms; additionally max. one half-wave
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

mounting type	screw fixing
• side-by-side mounting	Yes
height	95 mm; 100.0 mm product version E01
width	119.5 mm; 157.5 mm product version E01
depth	129.9 mm; 121.0 mm product version E01

Connections/ Terminals

type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)
— finely stranded / with core end processing	2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²
• at AWG conductors / for main contacts	2x (14 ... 10)
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 conductors / for auxiliary and control contacts	1x (AWG 20 ... 12)
tightening torque	
• for main contacts / with screw-type terminals	2 ... 2.5 N·m
• for auxiliary and control contacts / with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
• for main contacts / with screw-type terminals	18 ... 22 lbf·in
• for auxiliary and control contacts / with screw-type terminals	7.5 ... 5.3 lbf·in
design of the thread / of the connection screw	
• for main contacts	M4
• of the auxiliary and control contacts	M3
wire stripping length / of the cable	
• for main contacts	7 mm
• for auxiliary and control contacts	7 mm

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	3NE1802-0
• of full range R fuse link for semiconductor protection / at cylindrical design	5SE1350; Maximum operating voltage 400 V!
• of back-up R fuse link for semiconductor protection / at NH design	3NE8017-1
• of back-up R fuse link for semiconductor protection / at cylindrical design 14 x 51 mm	3NC1450
• of back-up R fuse link for semiconductor protection / at cylindrical design 22 x 58 mm	3NC2280
manufacturer's article number / of the gG fuse / at NH design	
• 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	
CSA	UL		RCM	EG-Konf.	Miscellaneous

Test Certific-ates	other	
Type Test Certific-ates/Test Report	Confirmation	VDE

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=3RF2440-1AC45

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2440-1AC45

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF2440-1AC45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2440-1AC45&lang=en