# **SIEMENS**

**Data sheet** 3RF2255-2AB45



Semiconductor relay, 3-phase 3RF2 55 A / 40 °C 48-600 V / 4-30 V DC 2phase controlled Spring-type terminal Blocking voltage 1200 V

product brand name product designation design of the product 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

SIRIUS

solid-state relay

two-phase controlled

3RF22

3RF2900-0EA18

converter

### General technical data

### product function power loss [W] for rated value of the current

- at AC in hot operating state
- at AC in hot operating state per pole
- without load current share typical

### insulation voltage rated value

type of voltage of the control supply voltage surge voltage resistance of main circuit rated value

shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 60068-2-6 reference code according to IEC 81346-2

**Substance Prohibitance (Date)** 

zero-point switching

0.5 W

600 V

6 kV

15g / 11 ms

2g

07/01/2006

### Main circuit

number of poles for main current circuit number of NO 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

### operational current

• at AC-51 rated value

• according to UL 508 rated value

ampacity maximum

operational current minimum

rate of voltage rise at the thyristor for main contacts maximum permissible

blocking voltage at the thyristor for main contacts

151 W

151 W

DC

Q

3

2

0

number of NC contacts for main contacts

40 ... 660 V

10 %

48 ... 600 V 48 ... 600 V

50 ... 60 Hz

40 ... 660 V

20 A

20 A

55 A

500 mA

100 V/µs

1 200 V

maximum permissible reverse current of the thyristor derating temperature surge current resistance rated value 12 value maximum 1 1800 A*s  600 A  12 value maximum 1 1800 A*s  DC Control circuit Control  vyps of voltage of the control supply voltage control supply voltage  * aft DC inflict value for signal <-> recognition control current at minimum control supply voltage * aft DC inflict value for signal <-> recognition control current at minimum control supply voltage * aft DC inflict value for signal <-> recognition control current at minimum control supply voltage * aft DC control current at minimum control supply voltage * aft DC control current at minimum control supply voltage * aft DC control current at minimum control supply voltage * aft DC control current at minimum control supply voltage * aft DC control current at minimum control supply voltage * aft DC control control supply voltage * aft DC control		
derating temperature surge current resistance rated value 12 value maximum 1 800 A's 1800 A's	maximum permissible	40. 4
Surge current resistance rated value 12 Value maximum 1 800 A*s  Control circuit/ Control  Vipe of Voltage of the control supply voltage e at DC control supply voltage 1 at DC control supply voltage 2 at DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC control current at minimum control supply voltage a to DC 22 mA 30 mA 00 M-dalay time 1 ms; additionally max. one half-wave  Auxiliary circuit  number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contac	-	
1800 A/r s   Control circuit   Control supply voltage   control supply voltage   1		
Control circuit/ Control  Type of voltage of the control supply voltage  on at DC intal value for signal <0 detection  ontrol supply voltage  on at DC intal value for signal <0 detection  ontrol current at minimum control supply voltage  on at DC intal value for signal <0 detection  ontrol current at minimum control supply voltage  on at DC intal value for signal <0 detection  ontrol current at minimum control supply voltage  on at DC intal value for signal <0 detection  value of DC control current at minimum control supply voltage  on at DC intal value for signal <0 detection  value of DC control to read value  Ond-delay time  OFF-clay time  1 ms; additionally max, one half-wave  Auxiliary circuit  number of NC contacts for auxiliary contacts number of NC c	_	
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at DC control supply voltage  at DC initial value for signal <1> detection  at DC initial value for signal <1> detection  at DC at DC control current at minimum control supply voltage  at DC control current at DC rated value  ON-delay time  1 ms; additionally max. one half-wave  OPF-delay time  Auxiliary circuit  aumber of NC contacts for auxiliary contacts  number of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  0 material author of NC contacts for auxiliary contacts  1 screw fixing  4 screw fix		DC
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at DC full-scale value for signal 40- recognition control current at minimum control supply voltage     at DC control current at DC rated value  On-F-delay time  OF-delay time  OF-delay time  OF-delay time  OF-delay time  Ins; additionally max, one half-wave		4 V
control current at minimum control supply voltage at DC control current at DC rated value 30 mA		
at DC control current at DC rated value  ON-delay time OF-delay time OF-delay time OF-delay time OF-delay time  I ms; additionally max. one half-wave  Auxiliary circuit  number of NC contacts for auxiliary contacts number of CO contacts for auxiliary contacts side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque of or main contacts type of electrical connection to for main contacts to for main contacts to solid or stranded without core end processing elinely stranded with core end processing of a AWG cables for main contacts to solid or stranded without core end processing of a rawilay and control contacts to solid or stranded without core end processing of maximal fixing and control contacts to solid or stranded without core end processing to solid or stranded without core end processing of or main contacts to solid or stranded with core end processing to solid or stranded with core end proc		1 •
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OFF- delay time  Auxiliary circuit number of NC contacts for auxiliary contacts  fastening method  side-by-side mounting design of the thread of the screw for securing the equipment tightening torque (libf-in) of fixing screw maximum tightening torque (libf-in) of fixing screw maximum height width 45 mm depth 47 mm  Connections/ Terminals  type of electrical connection  of or main contacts  solid  solid or stranded with core end processing of finely stranded without core end		30 mA
OFF- delay time  Auxiliary circuit  number of NC contacts for auxiliary contacts  fastening method  side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque (Ibf-in) of fixing screw maximum height width 45 mm depth 47 mm  Connectors/ Torminals  type of electrical connection  • for main contacts  - solid — solid py stranded with core end processing • finely stranded without core end processing • finely stranded with core end processing • finely stranded with core end processing • finely stranded without core end processing • finely stranded without core end processing • finely stranded without core end processing • for auxiliary and control contacts  ANG number as coded connectable conductor cross-sections • for auxiliary and control contacts  ANG number as coded connectable conductor cross-sections • for main contacts  itiphtening torque • for main contacts  • for main contacts	ON-delay time	1 ms; additionally max. one half-wave
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number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CC contacts for auxiliary contacts number of CC contacts for auxiliary contacts    Installation/mounting/dimensions	Auxiliary circuit	
number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts  fastening method		0
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fastening method  • side-by-side mounting design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth 45 mm   **Connections/ Torminals**  **Uppe of electrical connection • for main current circuit • for auxiliary and control circuit **Uppe of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts  • solid or stranded • finely stranded with core end processing • finely stranded with		0
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tightening torque [lbf-in] of fixing screw maximum height width 45 mm 47 mm  Connections/ Terminals  type of electrical connection • for auxiliary and control circuit spring-loaded terminals spring-loaded terminals • for auxiliary and control circuit spring-loaded terminals • for an in contacts — solid 2x (0.5 2.5 mm²) — solid 2x (0.5 2.5 mm²) — finely stranded without core end processing 2x (0.5 2.5 mm²) • at AWG cables for main contacts  • solid or stranded • finely stranded without core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts tightening torque • for main contacts with screw-type terminals design of the thread of the connection screw • for main contacts  • for auxiliary and control contacts  • for main contact	• •	
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• for main contacts		
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- finely stranded without core end processing  • at AWG cables for main contacts  connectable conductor cross-section for main contacts  • solid or stranded • finely stranded with core end processing • finely stranded without core end processing • finely stranded without core end processing • finely stranded without core end processing • for auxiliary and control contacts  - solid - finely stranded with core end processing - finely stranded with core end processing - finely stranded without core end processing - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely stranded with core end processing - solid - finely strand		
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- solid - finely stranded with core end processing - finely stranded without core end processing - finely stranded without core end processing - at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque - for main contacts with screw-type terminals design of the thread of the connection screw - for main contacts  stripped length of the cable - for auxiliary and control contacts - for auxiliary and control contacts  Safety related data	•	
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section for main contacts  tightening torque  • for main contacts with screw-type terminals  design of the thread of the connection screw  • for main contacts  stripped length of the cable  • for main contacts  • for auxiliary and control contacts  Safety related data		
for main contacts with screw-type terminals  design of the thread of the connection screw     for main contacts     for main contacts     for main contacts     for main contacts     for auxiliary and control contacts  Safety related data  2 2.5 N·m  M4  10 mm  10 mm		IV 1T
for main contacts with screw-type terminals  design of the thread of the connection screw     for main contacts     for main contacts     for main contacts     for main contacts     for auxiliary and control contacts  Safety related data  2 2.5 N·m  M4  10 mm  10 mm	tightening torque	
<ul> <li>for main contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>Safety related data</li> </ul> M4 10 mm 10 mm Safety related data	<ul> <li>for main contacts with screw-type terminals</li> </ul>	2 2.5 N·m
stripped length of the cable  of for main contacts for auxiliary and control contacts  10 mm  10 mm  Safety related data	design of the thread of the connection screw	
<ul> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>Safety related data</li> </ul>	• for main contacts	M4
• for auxiliary and control contacts  10 mm  Safety related data	stripped length of the cable	
Safety related data		
	for auxiliary and control contacts	10 mm
protection class IP on the front according to IEC IP20		
	Safety related data	

60529		
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front	
Ambient conditions		
installation altitude at height above sea level maximum	1 000 m	
ambient temperature		
<ul> <li>during operation</li> </ul>	-25 +60 °C	
<ul> <li>during storage</li> </ul>	-55 +80 °C	
Electromagnetic compatibility		
conducted interference		
<ul> <li>due to burst according to IEC 61000-4-4</li> </ul>	2 kV / 5 kHz behavior criterion 2	
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV behavior criterion 2	
<ul> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV behavior criterion 2	
<ul> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	140 dBuV in the frequency range 0.15 80 MHz, behavior criterion 1	
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2	
conducted HF interference emissions according to CISPR11	Class A for industrial environment	
field-bound HF interference emission according 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
- of back-up R fuse link for semiconductor protection at NH design usable
- of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable

manufacturer's article number of the gG fuse at NH design usable

- up to 460 V
- up to 600 V

<u>3NE1803-0</u>; These fuses have a smaller rated current than the semiconductor relays

3NE8018-1

<u>3NC1450</u>; These fuses have a smaller rated current than the semiconductor relays

<u>3NC2250</u>; These fuses have a smaller rated current than the semiconductor relays

<u>3NA3807-6</u>; These fuses have a smaller rated current than the semiconductor relays

<u>3NA3805-6</u>; These fuses have a smaller rated current than the semiconductor relays

### Certificates/ approvals

## General Product Approval EMC Declaration of Conformity



Confirmation









**Declaration of Conformity** 

**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)

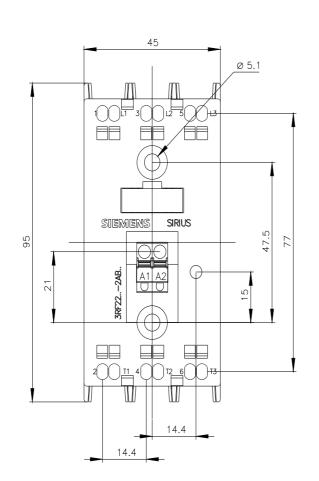
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2255-2AB45

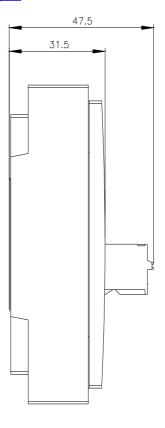
Cax online generator

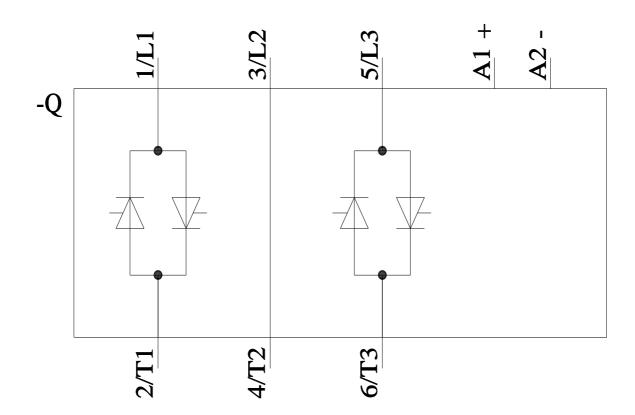
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2255-2AB45

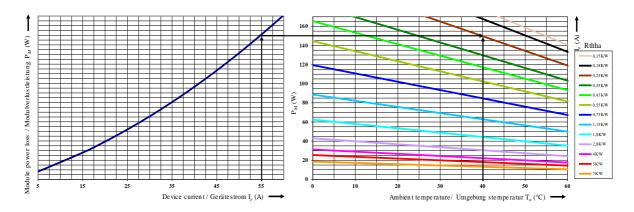
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RF2255-2AB45

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









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