

# SIRIUS Solid-State Switching Devices

High reliability at high switching frequencies



- Wear-free and noise-free switching even in areas sensitive to noise (offices, hospitals)
- Two widths: 22.5 mm and 45 mm
- Various connection options:  
Screw-type, spring-loaded and ring cable lug connection
- Extended functionality thanks to plug-in function modules
- Broad range of control voltages
- Applications:
  - Electrical heating control
  - Control of valves and motors in conveyor systems
  - Reversing applications

## SIRIUS

Answers for industry.

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# Strong Partners for Industry and Trade

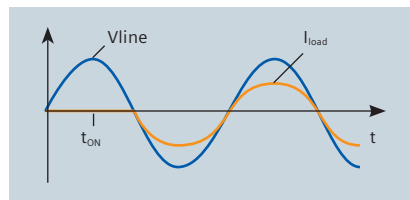
## Switching of resistive loads

3RF21 solid-state relays, single-phase, 22.5 mm, screw terminal, zero-point switching – control voltage 24 V DC



$I_{max}$ (A)*	Operational voltage $U_e$ (V)	
	24 – 230	230 – 600
20	3RF2120-1AA02	3RF2120-1AA45
30	3RF2130-1AA02	3RF2130-1AA45
50	3RF2150-1AA02	3RF2150-1AA45
70	3RF2170-1AA02	3RF2170-1AA45
90	3RF2190-1AA02	3RF2190-1AA45

\*  $I_{max}$  indicates the performance of the solid-state relay. The actual permitted rated operational current  $I_e$  can be smaller depending on the connection system or cooling conditions.



**Zero-point switching:**  
Switching of resistive loads, e.g. heating circuits

3RF23 solid-state contactors, single-phase, zero-point switching – control voltage 24 V DC



$I_{max}$ (A)*	Operational voltage $U_e$ (V)	
	24 – 230	230 – 600
10,5	3RF2310-1AA02	3RF2310-1AA45
20	3RF2320-1AA02	3RF2320-1AA45
30	3RF2330-1AA02	3RF2330-1AA45
40	3RF2340-1AA02	3RF2340-1AA45
50	3RF2350-1AA02	3RF2350-1AA45
70	3RF2370-3AA02**	3RF2370-3AA45**
88	3RF2390-3AA02**	3RF2390-3AA45**

\*\* Ring cable lug terminal

3RF24 solid-state contactors, 3-phase, screw terminal, zero-point switching – control voltage 24 V DC

$I_{max}$ (A)*	Operational voltage
	48 – 600V
10,5	3RF2410-1A□45
20	3RF2420-1A□45
30	3RF2430-1A□45
40	3RF2440-1A□45
50	3RF2450-1A□45

2-phase controlled  
3-phase controlled

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B  
C

### Function modules

Function modules are used to expand the functions of the solid-state switching devices; the electrical and mechanical connection is established by simple snap-on modules.

#### Converter

By using an analog control voltage of 0-10V, the converter can regulate the output signals. These modules are used to convert analog control signals into a pulse-width-modulated digital signal. This allows connected solid-state switching devices to regulate the output of a load as a percentage.

#### Application:

For example, standard connection to temperature controllers.

#### Power controller

The power controller operates in a similar way to the converter, but it additionally keeps the power at the load constant.

#### Application:

- Power controller with proportional-action control for keeping the power constant in the event of fluctuations in voltage or resistance.
- The inrush current is limited by means of phase control with an adjustable voltage ramp. The inrush current limitation is particularly appropriate in the case of loads such as lamps which have an inrush current.
- Detects thyristor faults, load failure and power failure.

#### Load monitoring

The load monitoring function module constantly monitors the current of a connected load circuit. The value is continuously compared with the stored reference value.

**Basic version:** Monitoring of 6 loads per switching device.

#### Extended version:

Monitoring of 12 loads per switching device.

#### Additional functionality:

Detection of thyristor faults, power failure, error indication.

3RF29 function modules

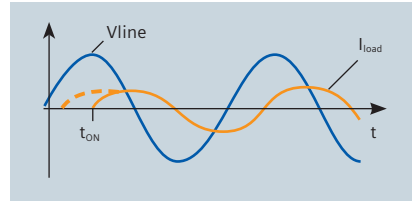


	Type current $I_e$ (A)	Control voltage (V)	Operational voltage $U_e$ (V)	
			110 – 230	400 – 600
Converter	–	AC/DC 24	3RF2900-OEA18	
Load monitoring Basic	20	DC 24	3RF2920-OFA08	
Load monitoring Extended	20	AC/DC 24	3RF2920-OGA13	3RF2920-OGA16
		50	3RF2950-OGA13	3RF2950-OGA16
		90	3RF2990-OGA13	3RF2990-OGA16
Power controller	20	AC/DC 24	3RF2920-OHA13	3RF2920-OHA16
		50	3RF2950-OHA13	3RF2950-OHA16
		90	3RF2990-OHA13	3RF2990-OHA16

# Motor Switching


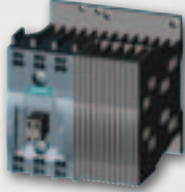
The solid-state contactors for switching motors are designed for the frequent switching on and off of three-phase motors up to 7.5 kW as well as for reversing up to 3.0 kW. The devices are fully insulated and can be mounted directly onto motor starter protectors, overload relays and SIRIUS current monitoring relays.

- Insulated enclosure with integrated heat sink
- IP20 degree of protection
- Variety of connection systems
- Instantaneous switching, particularly suitable for inductive loads



**Instantaneous switching:**  
Switching of inductive loads, e.g. motors

## 3RF34 solid-state contactors, 3-phase, instantaneous switching, 2-phase controlled

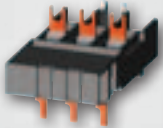

	
Operational voltage 48-480 V	Operational voltage 48-600 V, blocking voltage 1600 V
3RF3405-□BB□4	3RF3405-□BB□6
3RF3410-□BB□4	3RF3410-□BB□6
3RF3412-□BB□4	3RF3412-□BB□6
3RF3416-□BB□4	3RF3416-□BB□6

Screw terminal  
Spring-loaded terminal  
Control voltage 24 V DC  
Control voltage 110...230 V AC

↑ 1  
↑ 2

↑ 1  
↑ 2

## Accessories

	Link module between solid-state (reversing) contactor and motor starter protector, for screw-type connection system (3RV2, size S00/S0)	3RA2921-1BA00
	Connection adapter solid-state (reversing) contactor and 3RB3 overload relay or 3RR2 current monitoring relay, for screw-type connection system	3RF3900-0QA88

## 3RF34 solid-state reversing contactors, 3-phase, instantaneous switching, 2-phase controlled


Operational voltage 48-480 V
3RF3403-1BD□4
3RF3405-1BD□4
3RF3410-1BD□4

Control voltage 24 V DC  
Control voltage 110...230 V AC

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