FRS100

Multiburner Control Flame Relay

The FRS100 is a flame safeguard control with a self-checking circuit to ensure safe start-up operation. If abnormal conditions exist, ignition start is prevented or system safety is secured by the shutdown of combustion if the main flame fails during operation.

This compact controller is used with a flame rod or a Minipeeper Ultraviolet Flame Detector for batch operation of combustion equipment, and can be mounted on a DIN-specification rail.
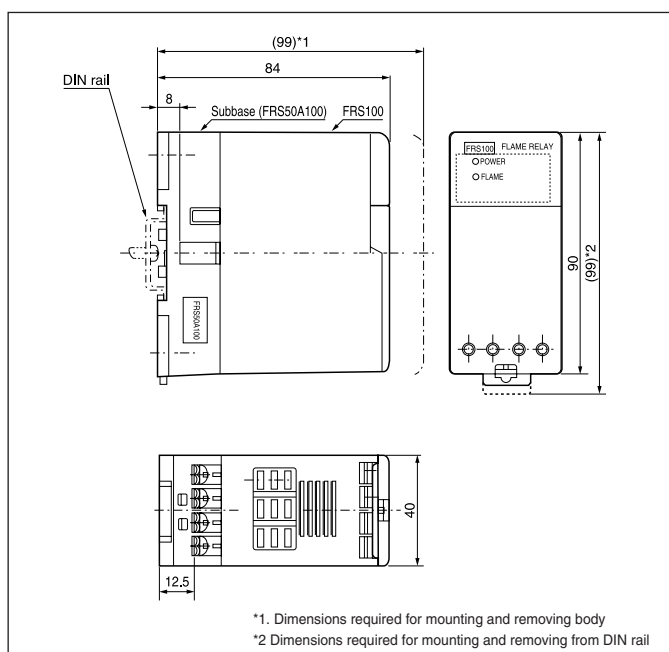
Specifications

Applications	Batch operation of oil-fired, gas-fired and oil-gas combination combustion equipment					
Flame detector to be used	FRS100B Series	Flame rod: C7007A, C7008A (wiring distance: 30m min, high frequency coaxial cable: 5C2V or 7C2V)				
		Ultraviolet flame detector: C7012A, C (wiring distance: 50m max. high frequency coaxial cable: 5C2V or 7C2V)				
	FRS100C Series	Minipeeper Ultraviolet Flame Detector: C7035A, C7027A (wiring distance: 200m max. Class IV 2 mm^2 600Vac vinyl chloride insulated cable)				
Model No.	Standard model		Standard model		High-sensitivity model	
	FRS100B100 FRS100B200	FRS100B104 FRS100B204	FRS100C100 FRS100C200	FRS100C104 FRS100C204	FRS100C150 FRS100C250	FRS100C154 FRS100C254
Power consumption	3W max.		7W max.		7W max.	
Flame response	3±1s (at 2V flame voltage)	2s max. (at 2V flame voltage)	3±1s (at 4.2V flame voltage)	2s max. (at 4.2V flame voltage)	3±1s (at 3.5V flame voltage)	2s max. (at 3.5V flame voltage)
Contact rating	250VA (terminals 3-4, 3-8)					
Flame sensitivity	Ignition detection level: flame voltage 1V max. Flame-out detection level: FRS100B Series (flame voltage 0.2V min.) FRS100C Series (flame voltage 0.4V min.)					
Flame signal output	0 to 5Vdc, wiring distance 5m max. (use a shielded cable), output terminals: A (-) and B (+) on body. Input impedance of externally connected equipment: 100KΩ min.					
Ambient temperature	-20 to +60°C (only 1 unit mounted), -20 to +45°C (gang-mounted, 2 units or more)					
Ambient humidity	90% RH, 40°C (no condensation allowed)					
Life	100,000 operations (at room temperature/humidity and rated voltage)					
Body color	Gray					
Mounting	Mounted on DIN rail or screw mounted					
Mass	FRS100B, C: approx. 270g, mounting subbase FRS50A: approx. 70g					

Selection Guide

Model No.		Description
Standard model	FRS100B100	100Vac, 50/60Hz
	FRS100B200	200Vac, 50/60Hz
	FRS100B104	100Vac, 50/60Hz
	FRS100B204	200Vac, 50/60Hz
Standard model	FRS100C100	100Vac, 50/60Hz
	FRS100C200	200Vac, 50/60Hz
	FRS100C104	100Vac, 50/60Hz
	FRS100C204	200Vac, 50/60Hz
High sensitivity model	FRS100C150	100Vac, 50/60Hz
	FRS100C250	200Vac, 50/60Hz
	FRS100C154	100Vac, 50/60Hz
	FRS100C254	200Vac, 50/60Hz

Accessories (sold separately)

Model No.	Description
FRS50A100	Mounting subbase
FRS60A100	Flame meter
123514B	Flame simulator for C7035A/C7027A
123514A, 121708	Flame simulator for flame rod, C7012A, C
83968019-001	Lighting surge absorber

Dimensions (Unit: mm)

*1. Dimensions required for mounting and removing body
*2 Dimensions required for mounting and removing from DIN rail

FRS60 Flame meter

The FRS60 is an optional cassette, mountable on the front of the FRS100 Flame Relay, enabling continuous monitoring of flame voltage. An external voltmeter is not required for adjustment or at start-up operation. Maintenance and checking during operation is easily carried out.

● Specifications

Model No.	FRS60A100	
Indication method	LED	
Indication	Flame voltage (V)	LED indication
	4.5 or higher	LED 5 ON (red)
	3.5 to 4.5	LED 4 ON (green)
	2.5 to 3.5	LED 3 ON (green)
	1.5 to 2.5	LED 2 ON (green)
	1.0 to 1.5	LED 1 ON (red)
	0 to 1.0 (Ignition detection level)	All LEDs OFF
Mounting	Direct mounting to FRS100	
Power	Power supplied from FRS100	
Mass	Approx. 40g	

● Dimensions (Unit:mm)