



SP. No.

# Yamatake Corporation

## 製品仕様書 SPECIFICATIONS

### 2.2 Composition

#### (1) Flame Detector and Signal Cable

Flame Detector		Signal Cable	
Name	Model No.	Cable specification (RF coaxial cable)	Allowable Length
Flame Rod	C7007A C7008A	5C2V, 7C2V (JIS) RG-11/U (JAN)	30m max.
Ultravision	C7012A C7012C	5C2V, 7C2V (JIS) RG-11/U (JAN)	50m max.

#### (2) Auxiliary Devices and Parts (to be ordered separately)

Name	Model No.
Subbase	FRS50A100
Optional cassette	Flame meter FRS60, etc.
Surge absorber for lightning protection	83968019-001

### 3. Specifications:

#### 3.1 General Specifications

- (1) Dimension H99 x W99 x D41
- (2) Weight (Mass) Approx. 270g
- (3) Case Material Polycarbonate
- (4) Life 10 years or 100,000 cycles
- (5) Mounting Use subbase
- (6) Standard Mounting Orientation Vertical indication panel

作成 DR. I.Harada		尺度 SCALE	記入のない公差 TOL. UNLESS NOTED
検図 CHK. Shingyoji	形番 MODEL	FRS100B	
認可 APPD K.Harada	名称 NAME	Multi Burner Control Flame Relay	
日付 DATE 12-16-98	図番 NO.	AD12740E	改番 REV. 00 / 8

改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.
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### 3.2 Electrical Specifications

#### (1) Rated Voltage and Frequency

Model No.	Rated Voltage	Frequency
FRS100B100	AC100V	50/60Hz
FRS100B200	AC200V	
FRS100B104	AC100V	
FRS100B204	AC200V	
FRS100B204	AC200V	

- (2) Allowable Voltage                      85 to 110% of rated voltage
- (3) Power Consumption                    3W max.
- (4) Dielectric Strength                    AC1500V, 50/60Hz, 1 min.  
AC1800V, 50/60Hz, 1s  
  
(Between primary (Terminal 1, 2, 3, 4, 7 and 8) and secondary terminals (Terminal 5, A and B)  
Between primary terminals and earth terminal 6)
- (5) Insulation Resistance                50MΩ min. DC500V megger  
  
(Between primary (Terminal 1, 2, 3, 4, 7 and 8) and secondary terminals (Terminal 5, A and B)  
Between primary terminals and earth terminal 6)
- (6) Thunder Lightning Surge            10kV, 1.2/50μs (JEC-187, surge impedance 75Ω min.)  
Connect surge absorber between hot side of power terminal  
and earth.

Recommended Surge Absorber; Spec. No. 10013 (83968019-001)

### 3.3 Terminal Ratings

	Terminal No.	Circuit	Ratings
Subbase	1 (R)	Power source	Rated voltage
	2 (S)		
	3	Contact output common	~
	4	Flame output (1K, 2K)	250VA
	5 (F)	Flame detector F lead	~
	6 (G)	Flame detector G lead and earth	Class 3
	7	Start/stop input	Rated voltage
	8	Start check output (1K)	250VA
Relay	A *	Flame voltage measuring terminal (-)	Voltage range: DC0 to 5V*
	B *	Flame voltage measuring terminal (+)	

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認可 APPD K.Harada	名称 NAME	<b>Multi Burner Control Flame Relay</b>	
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4. Operation:

(1) Normal

**【INPUT】**

Start (①-⑦)

Flame Signal F-G(⑤-⑥)

**【OUTPUT】**

1K Output (③-⑧)

2K Output (③-④)

**【DISPLAY】**

Power LED

Flame LED

Start Check LED

←→ Flame Response

(2) Operation at False Flame

**【INPUT】**

Start (①-⑦)

Flame Signal F-G(⑤-⑥)

**【OUTPUT】**

1K Output (③-⑧)

2K Output (③-④)

**【DISPLAY】**

Power LED

Flame LED

Start Check LED

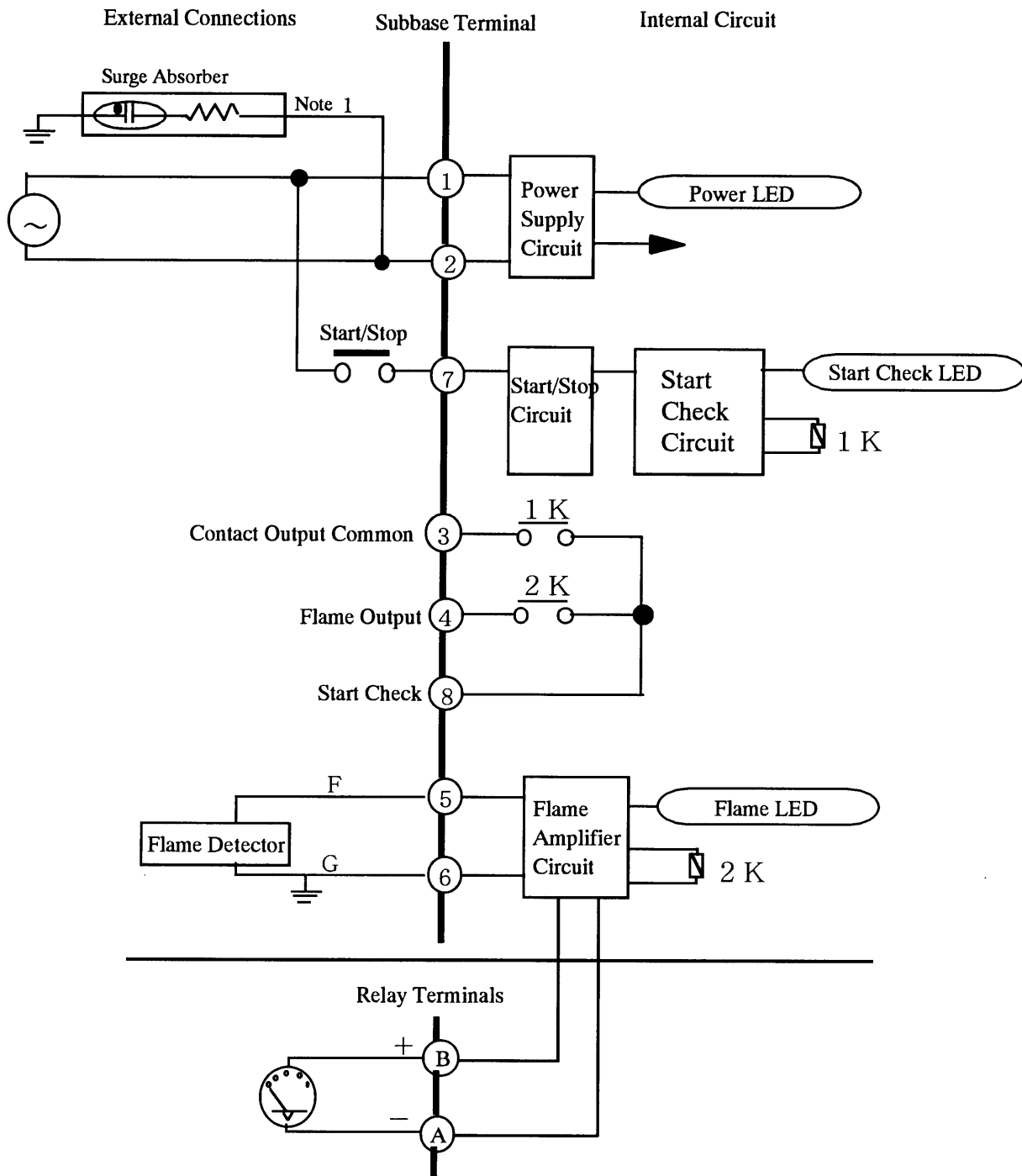
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検図 CHK. Shingyoji	形番 MODEL	FRS100B	
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5. Wiring Diagram:



Note 1: Provide ONE surge absorber for multiple relays connected to common power source.

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検図 CHK.	形番 MODEL	FRS100B	
Shingyoji			
認可 APPD.	名称 NAME	Multi Burner Control Flame Relay	
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
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## 6. Caution In Use:

- (1) Disconnect power supply before beginning wiring to terminals to prevent electrical shock equipment damage or misoperation.
- (2) Check wirings after wiring connection. Miswiring may result in breakdown or misoperation.
- (3) Supply power with voltage and frequency identified on the label.
- (4) Do not use this relay by ON/OFF control of power with jumper between start/stop input terminals (1-7). Start check may be skipped.
- (5) Terminal 6(earth) shall be connected to groundings in compliance with Class 3 groundings of the Engineering Code for Electrical Equipment and Ground, and also connected to burner body.
- (6) Connect high tension cable of ignition transformer firmly. Contact failure may generate high-frequency wave noise and result in misoperation.  
Ignition transformer shall be mounted directly on burner body or on metal part electrically connected to burner body.
- (7) Power source line and/or high tension cable of ignition transformer and detector cable shall not be bound or wired in a same conduit. Especially, high tension cable of ignition transformer must be wired separately and more than 10cm away from Relay Module.
- (8) Solenoid valve shall be energized from the power source, one side of line is potentially grounded, otherwise it may be unsafe in case of fault.
- (9) When DIN rail mounting is used, remove relays from the subbase and ship them by exclusive container. If shipped as assembled it may damage the products.
- (10) Do not install this product where;
  - special chemicals or those vapors exist (ammonia, sulfur, chlorine, ethylene compound, acid, etc.)
  - exposed to splash or waterdrop
  - exposed to high temperature
  - vibration continue for a long period

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認可 APPD	名称 NAME	Multi Burner Control Flame Relay	
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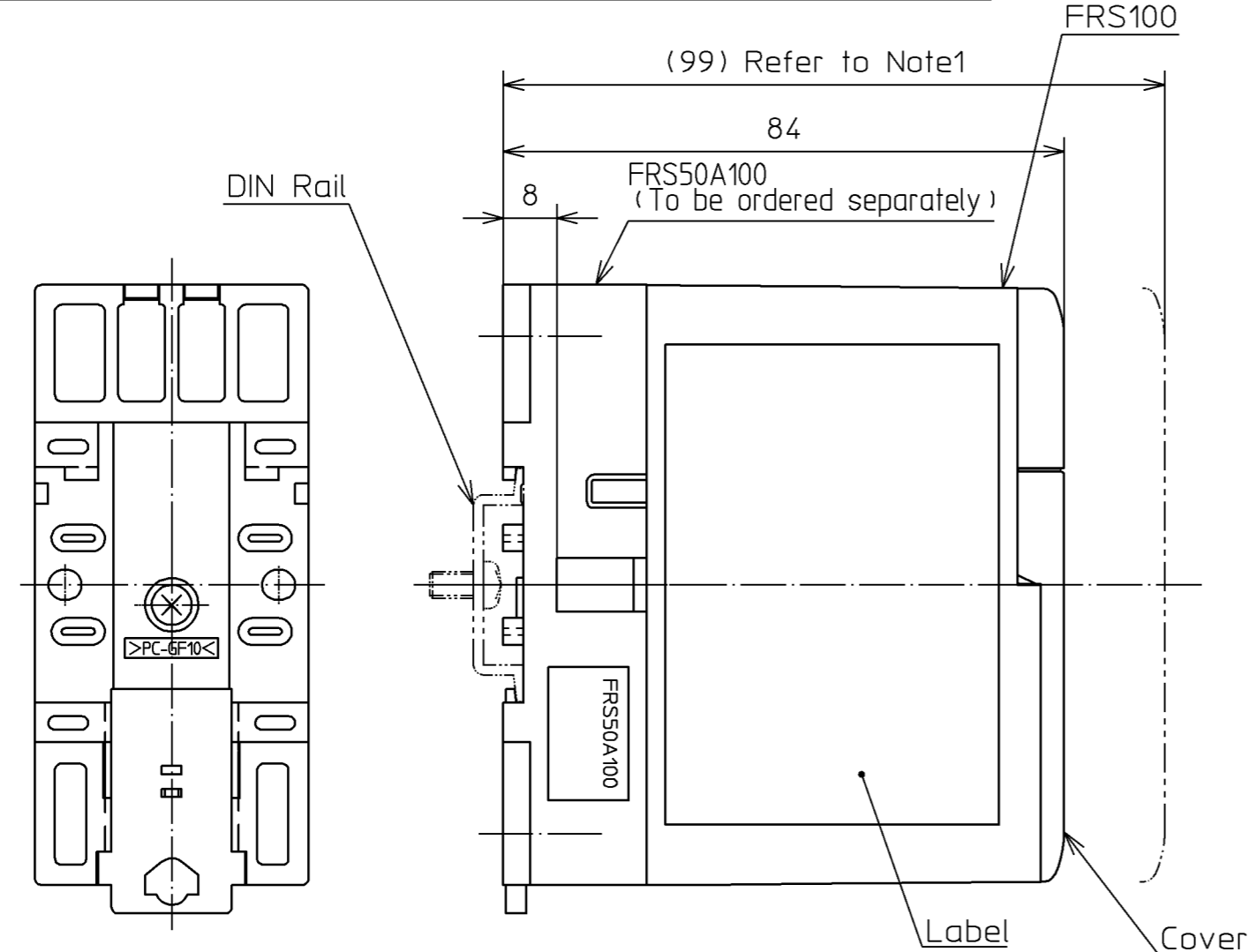
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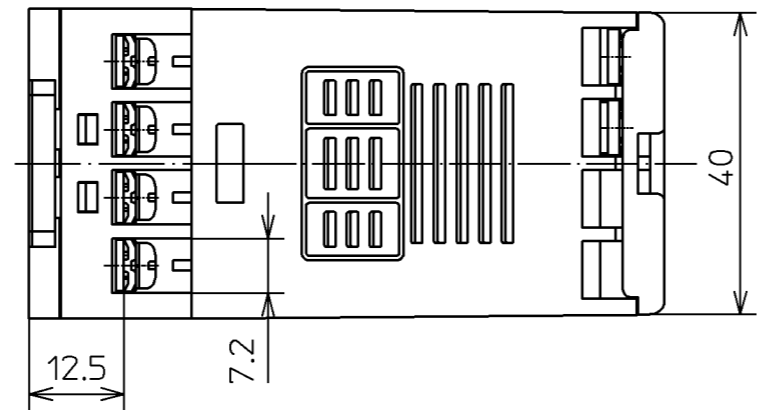
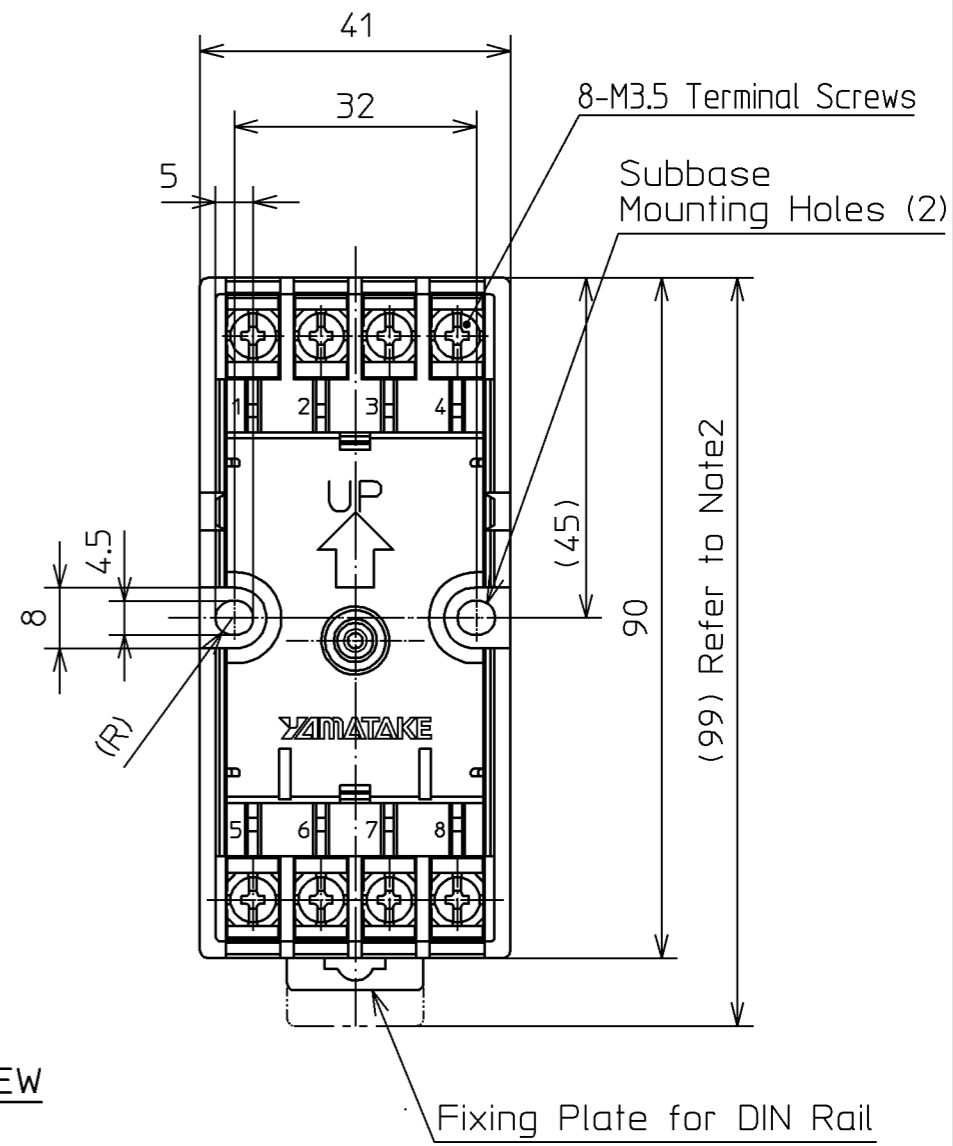
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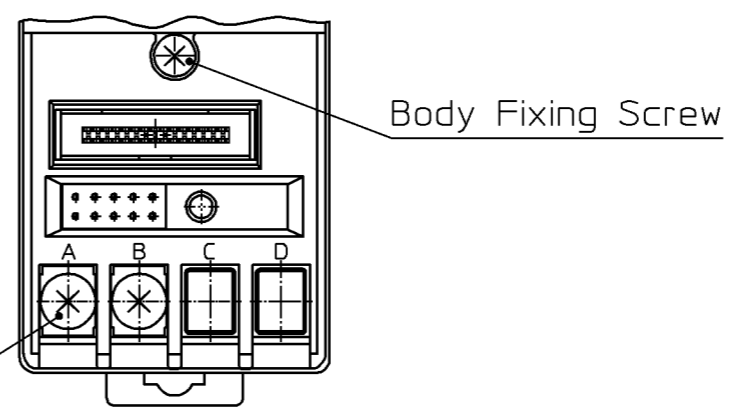
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FRS50A100 (FRONT VIEW WITHOUT RELAY)  
Subbase To be ordered separately



COVER REMOVED VIEW



2-M3.5 Terminal Screws

3. This drawing shows FRS100 assembled on FRS50A100.  
2. Necessary dimension to release fixing plate.

Note1. Dimension required for mounting or removing the device.

作成DR. S.Miura 9.3.'98	検図CHK. M.Ogido 9.3.'98	認可APPD K.Murata 9.3.'98	日付DATE 9.3.'98	改番REV. 00/8	尺度SCALE 1:1	記入のない公差 TOL. UNLESS NOTED
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“RESTRICTIONS ON USE”

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment.

Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.

1	00	00	First issue	12-2-02	Harada	Miura
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