

SP. No.	Yamatake Corporation				製品仕様書 SPECIFICATIONS	
	1. Name and Model Number:					
	Name	Model Number	Voltage	Frequency	Flame Response	
	Multi Burner Control Flame Relay	FRS100B100	AC100V	50/60Hz	3±1s	
		FRS100B200	AC200V		2s max.	
		FRS100B104	AC100V			
		FRS100B204	AC200V			
2. General Description:						
<p>Multi burner flame control relay FRS100B is a combustion control device having safe start circuit.</p> <p>When abnormal condition at start of sequence or flame failure in normal running is detected, halts combustion sequence to ensure safety.</p> <p>This device can be used in batch operation of combustion appliances with flame rod or ultraviolet flame detector.</p>						
2.1 Features						
(1) Start check function is provided.						
At start of sequence, flame detector and flame relay are checked, if abnormal condition is detected halts the operation not to proceed to ignition trial.						
(2) Compact relay unit can be plugged in to subbase (to be ordered separately).						
Subbase can be mounted to panel directly by screws or standard DIN rail.						
(3) Power status, flame detection and completion of start check can be identified by LEDs. LED for start check is mounted inside of cover.						
(4) Flame signal output terminals are provided which deliver flame signal (flame voltage DC 0 ~ 5V) proportionally to flame current of flame detector.						
By connecting conventional circuit tester simple flame check is possible, or continuous flame monitoring is available with DC volt meter or recorder.						
(5) Connection terminal for optional Cassette are provided. By adding optional Cassette relay function is largely expanded. Contact Yamatake sales representatives for the detail of Cassette.						
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						12-16-98
						作成 DR.
						I.Harada
						検図 CHK.
						Shingyoji
						認可 APPD.
						K.Harada
						尺 度 SCALE
						記入のない公差 TOL. UNLESS NOTED
						形 番
						MODEL
						FRS100B
						名 称
						NAME
						Multi Burner Control Flame Relay
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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 |

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検図 CHK. Shingyoji	形番 MODEL	FRS100B	
認可 APPD K.Harada	名称 NAME	Multi Burner Control Flame Relay	
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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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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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I.Harada 

検図 CHK. 形番 MODEL

FRS100B

認可 APPD 名称 NAME

Multi Burner Control Flame Relay

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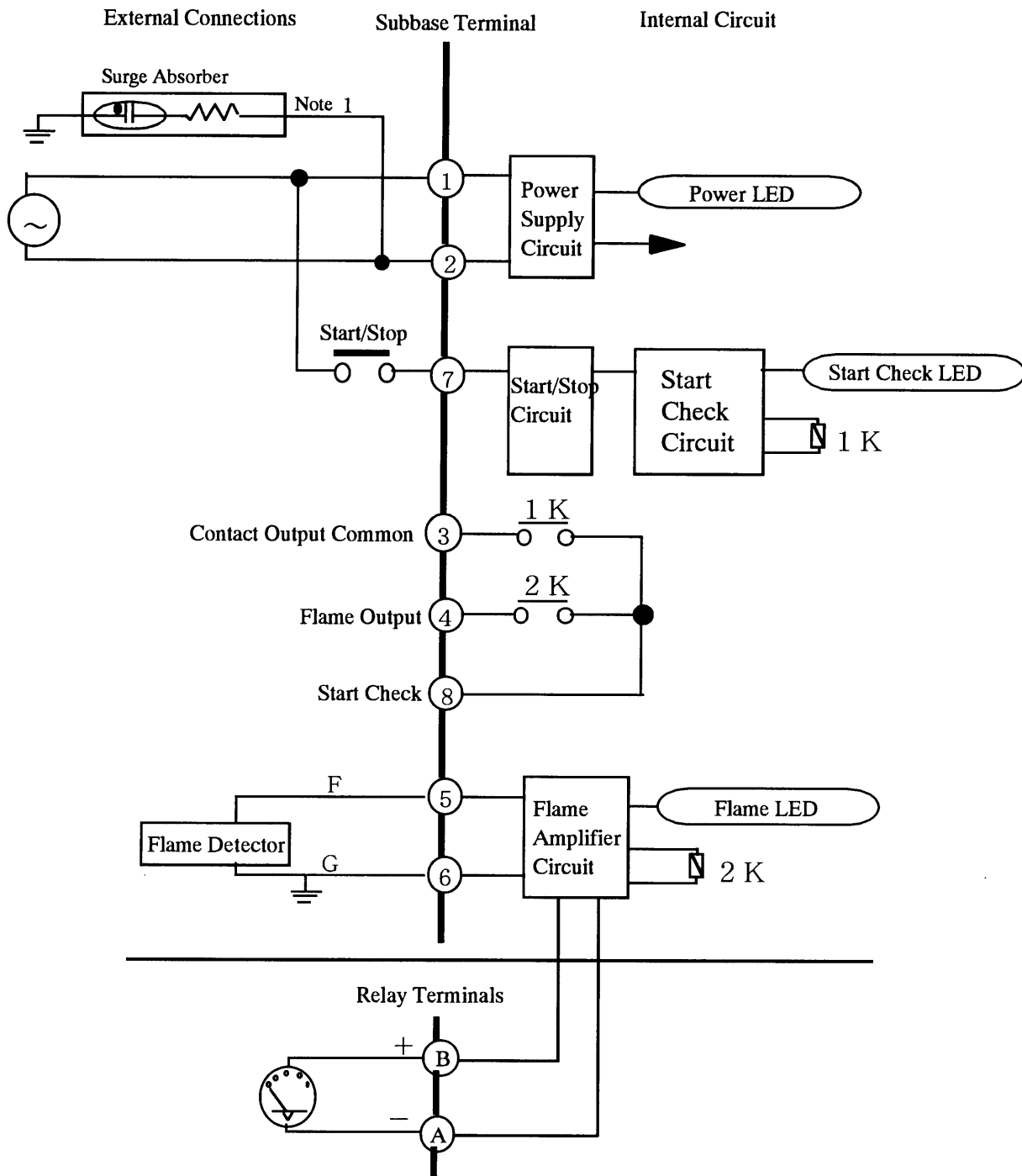
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5. Wiring Diagram:




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

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認可 APPD K.Harada	名称 NAME	Multi Burner Control Flame Relay	
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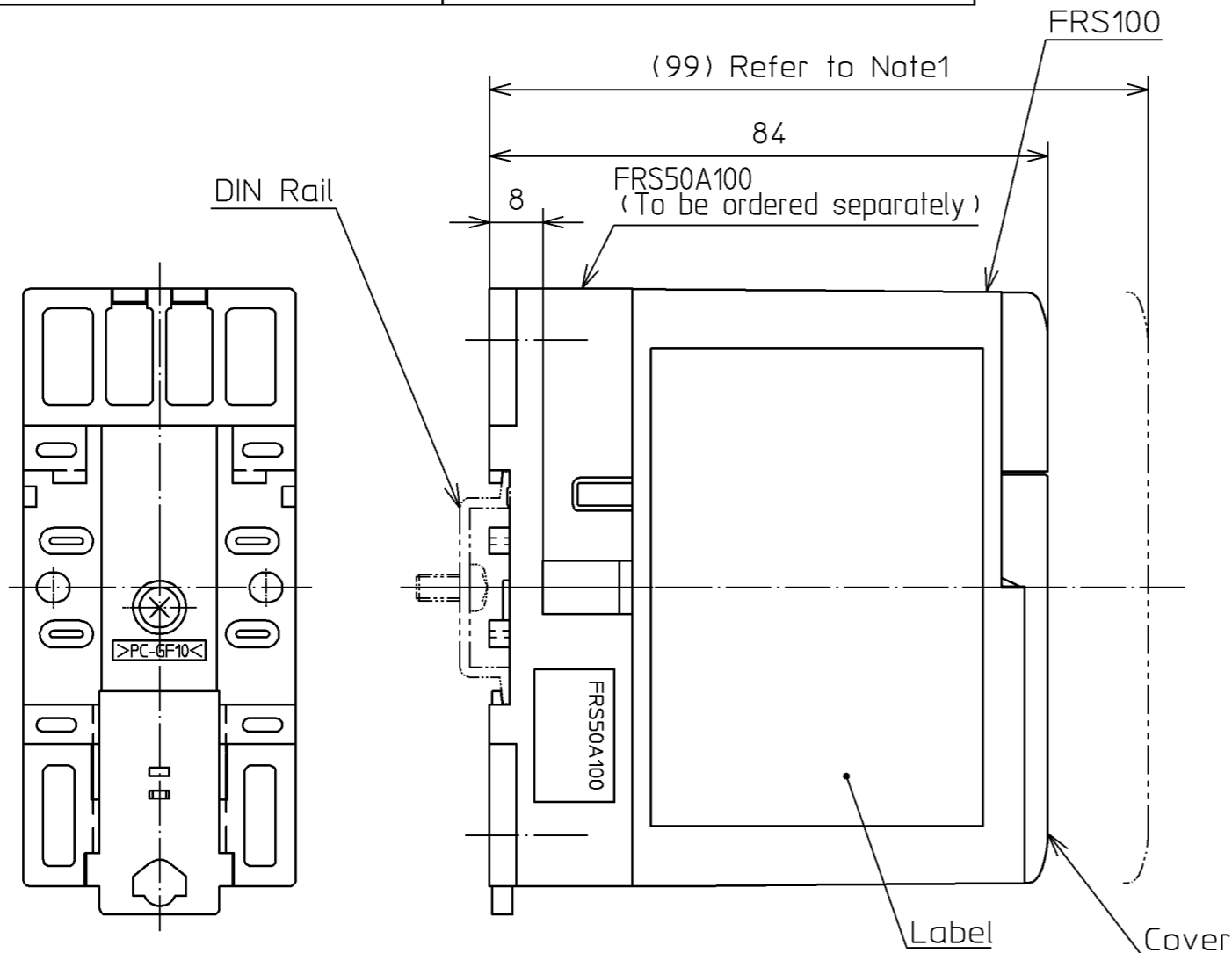
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	<p>6. Caution In Use:</p> <p>(1) Disconnect power supply before beginning wiring to terminals to prevent electrical shock equipment damage or misoperation.</p> <p>(2) Check wirings after wiring connection. Miswiring may result in breakdown or misoperation.</p> <p>(3) Supply power with voltage and frequency identified on the label.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(10) Do not install this product where;</p> <ul style="list-style-type: none"> • 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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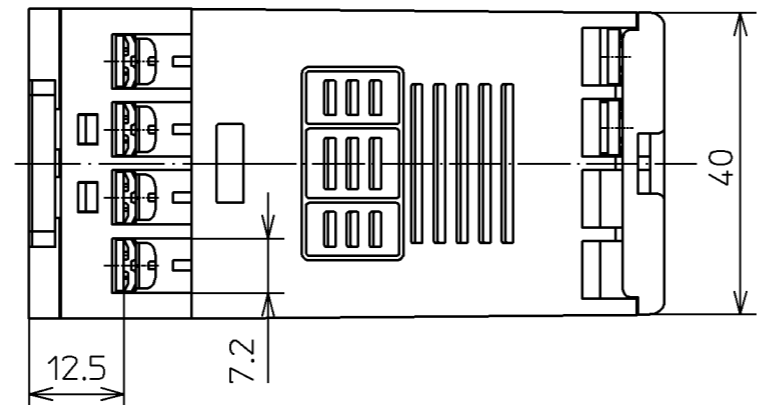
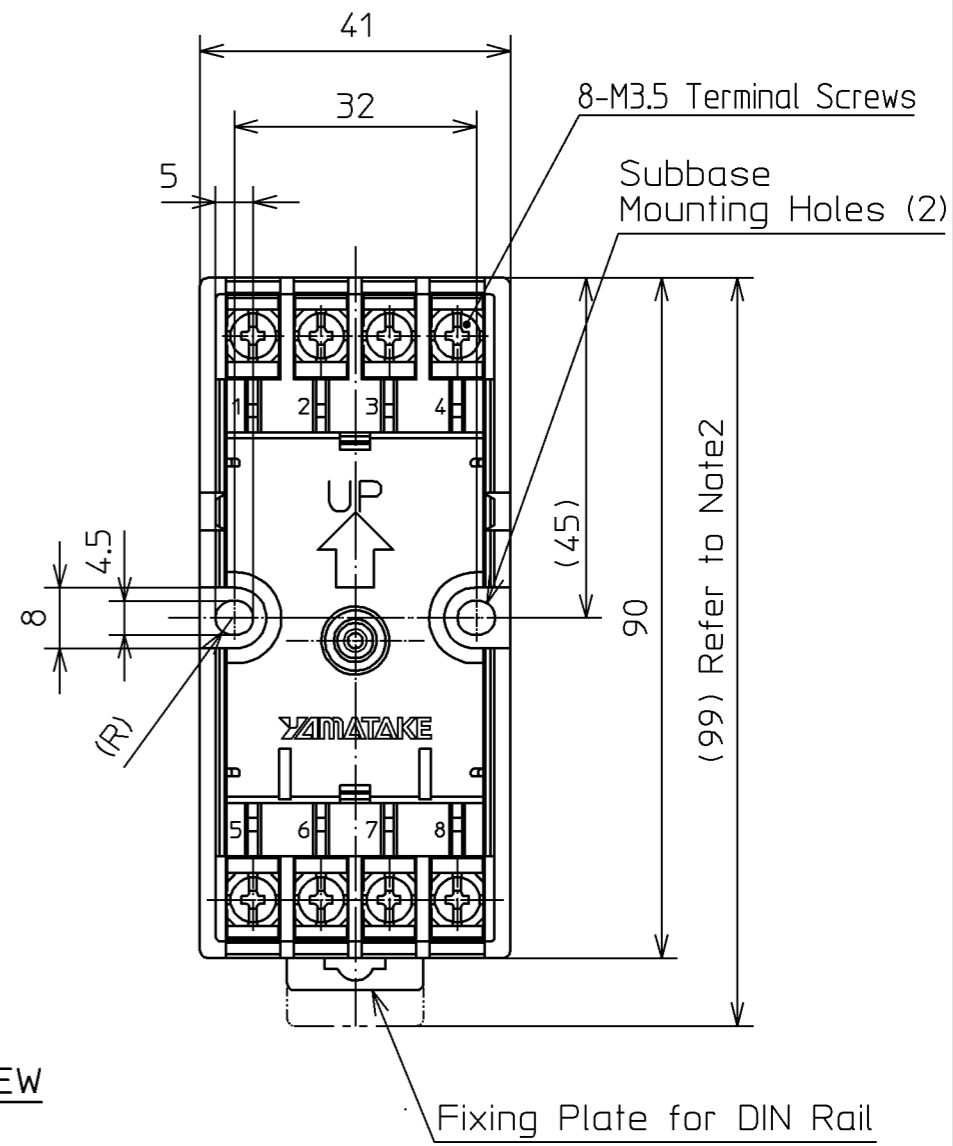
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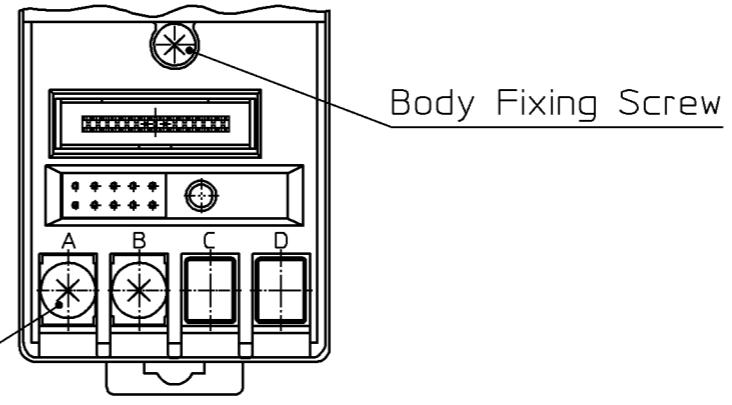
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FRS50A100 (FRONT VIEW WITHOUT RELAY)
Subbase To be ordered separately



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	尺度SCALE 1:1	記入のない公差 TOL. UNLESS NOTED
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