

# HFRD400-YS

# PLUG-IN RAILWAY RELAY



## Features

- Instantaneous compact relay, 4CO contacts
- Delay on, 0-120 min
- Integrated back EMF suppression diode
- Magnetic arc blow-out for high breaking capacity
- Minimum switching current 10mA
- Maximum continuous current 10A
- Mechanical life: 5 million operations
- Integrated snaplock, no external retaining clip needed
- Visible cover & LED coil indicator

RoHS compliant

## CONTACT DATA

Contact arrangement	4CO
Contact resistance <sup>1)</sup>	100mΩ max.(at 0.1A 6VDC)
Contact material	Ag, Ag+Au plated
Contact rating	10A 110VDC 5A 72VDC L/R≤40ms 0.5A 110VDC L/R≤40ms
Max. Switching voltage	250VDC, 440VAC
Max. Switching current	10A
Mechanical endurance	5×10 <sup>6</sup> OPS
Electrical endurance	≥5×10 <sup>4</sup> OPS(85°C, 5s on 5s off, 10A 110VDC, Resistive load)

**Notes:** The data shown above are initial values.

## CHARACTERISTICS

Insulation resistance		1000 MΩ (500VDC)
Dielectric strength	Between open contacts	1000VAC 1min
	Between contact sets	2500VAC 1min
	Between coil & contacts	2500VAC 1min
Surge voltage (Between coil & contacts)		5kV(1.2/50μs)
Operate time(at nomi. volt.)		30ms max.
Release time(at nomi. volt.)		30ms max.
Shock resistance		IEC 61373, Category I, Class B, Body mounted
Vibration resistance		IEC 61373, Category I, Class B, Body mounted
Humidity		5% to 95%RH
Ambient temperature		-50°C to 85°C
Termination		Plug-in
Unit weight		Approx. 190g
Construction		Dust protected <sup>1)</sup>

**Notes:** 1) The data shown above are initial values;

2) Dust protected relays can not be used in the environment with pollutants like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.

## COIL

Coil power	During delay: <0.375W (110Vd.c.) After delay: <3W (110Vd.c.)
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## COIL DATA

23°C

Nominal Voltage VDC	Set Voltage VDC Max.	Reset Voltage VDC Min.	Max. Voltage VDC <sup>1)</sup>	Coil Resistance Ω
12	8.4	1.2	15	72×(1±10%)
24	16.8	2.4	30	270×(1±10%)
36	25.2	3.6	45	562×(1±10%)
48	33.6	4.8	60	1044×(1±10%)
55	38.5	5.5	69	1300×(1±10%)
72	50.4	7.2	90	2406×(1±10%)
96	67.2	9.6	120	4400×(1±10%)
100	70	10	125	4400×(1±10%)
110	77	11	137.5	5330×(1±10%)
120	84	12	150	6160×(1±10%)
125	87.5	12.5	156.25	7634×(1±10%)
220	154	22	275	21776×(1±10%)
250	175	25	312.5	23850×(1±10%)

**Notes:** 1) The data shown above are initial values;

2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

## ORDERING INFORMATION

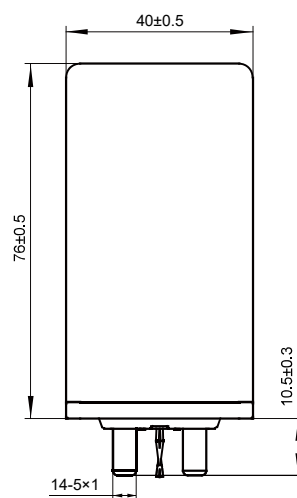
HFRD400-YS/		110	-3	G	D	J	M	XX S XX
Type								
Coil voltage	12, 24, 36, 48, 55, 72, 100, 110, 120, 125, 220, 250 VDC							
Contact material	3: Ag Alloy							
Contact plating	G: Gold plate		Nil					
Coil protect	D: With Diode		Nil: No Diode					
Coil indicator	J: With LED		Nil: No LED					
Arc blow-out	M: Magnetic arc blow-out		Nil: no Magnetic arc blow-out					
Time delay	Nil: 0    No.: The number in front of the letter							
	S: Second    M: Minute    H: Hour							
	Nil: 0    No.: The number in front of the letter							
Special code <sup>1)</sup>	XXX: Customer special requirement    Nil: Standard type							

**Notes:** 1) For example: S5 indicates a delay of 0.5 seconds, 1S5 indicates a delay of 1.5 seconds, and 15S indicates a delay of 15 seconds;  
M5 represents a delay of 0.5 minutes, 1S5 represents a delay of 1.5 minutes, 15S represents a delay of 15 minutes;  
H5 represents a 0.5 hour delay, 1H5 represents a 1.5 hour delay, and 15H represents a 15 hour delay;  
2) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

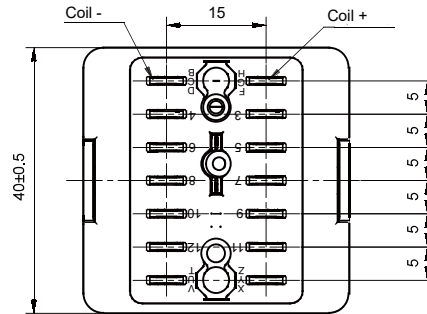
Outline Dimensions



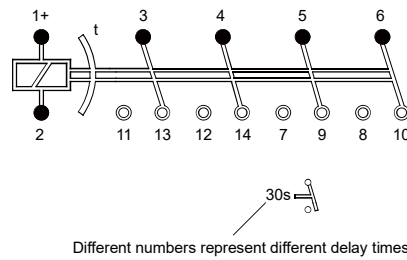
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

PCB Layout  
(Bottom view)



Wiring Diagram  
(Bottom view)



Notes: 1) Other requirement, like meet BZDT1111-FA-G000-002 standard, please contact with our engineer.

2) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm;

### Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.

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