

Relay Output Terminal Unit






TUA713-DOR16

User manual

IM23H68-E

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

Security& Caution Symbols

The following table lists Security& Caution symbols used on equipments.














No.	Symbol	Description
1		Direct current (DC)
2		Alternating current (AC)
3		Ground (Earth) terminal
4		Protective earth (ground) terminal
5		Reference ground (Earth) terminal
6		Frame or chassis
7		Equipotentiality
8		On (power)
9		Off (power)
10		Caution, risk of electric shock
11		Caution, hot surface
12		Caution, risk of danger
13		Electrostatic sensitive devices (ESD)

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Relay Output Terminal Unit TUA713-DOR16

Section 1 Overview

TUA713-DOR16 is a relay output terminal unit of 16 channels, and mainly works with 1 non-redundant or a pair of redundant 16-channel digital output modules DO712-S11. The control digital signal in system is sent to field after isolated by the relay of terminal unit, and mainly used for driving the field devices with relative high power and operation frequency. The terminal unit can work with the change-over bases MB745-S11 or MB746-S11 via the wire DB37.

Each channel of TUA713-DOR16 has 6 terminals, and supports outputting signals of passive and active normally open. The active normally open signal output of every channel has the arc extinction diode interface and the changeable fuse, the power supply of coil has changeable fuse and indicator light, and the relay has socket. Therefore, user can change and maintain conveniently.

This terminal unit can be fixed by screws at its 4 corners or by DIN rail.

Section 2 Specifications

Table 2-1 Specifications

Parameter		Instruction
Model		TUA713-DOR16
Type		Relay Output Terminal Unit
Channel		16
Temperature	Work	(-20~70)°C
	Storage	(-40~85)°C
Humidity	Work	10%RH~90%RH, No Condensation
	Storage	5%RH~95%RH, No Condensation
Power Supply	Coil	24VDC \pm 10%
	Contact	24VDC \pm 10% or 220VAC \pm 10%
Contact Operation Times		> 100000
Maximum Contact Operation Frequency		30 Times/Minute (Rated Control Capacity)
Load		3A/ Channel (MAX)
Fuse	Coil (16 Channels for Each Group)	2A Pluggable Fuse
	Contact (Each Channel)	1A/250V Pluggable Fuse, 2A or 3.15A can be selected
Dimension (LxWxH)		240mmx150mmx62mm



Tip:

Different relays have different specifications. Please refer to the specific relay.

Section 3 Usage

3.1 Appearance

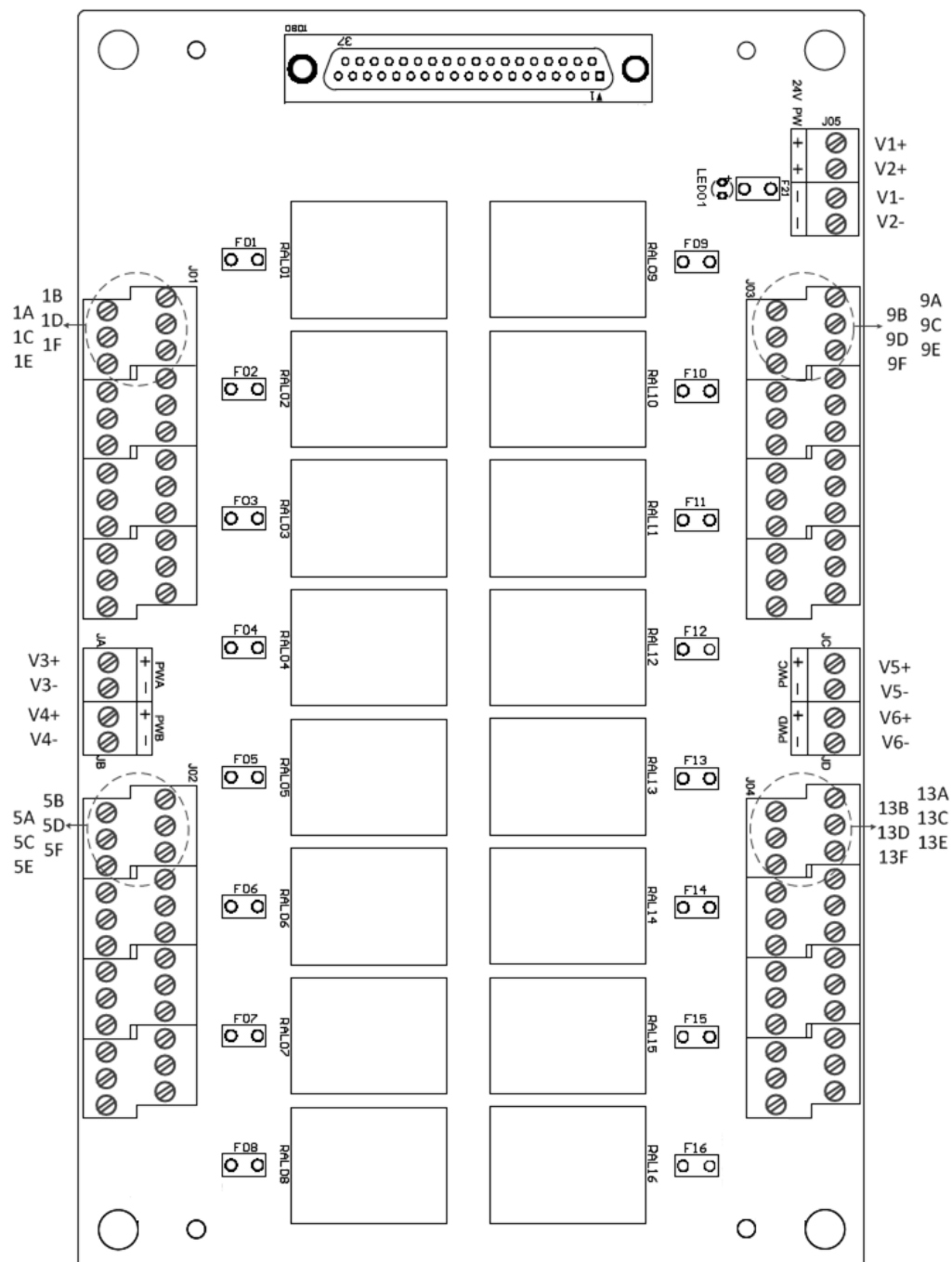


Figure 3-1 Appearance

3.2 Connectors

Table 3-1 Connectors

Sign	Instruction
DB01	DB37 Socket
LED01	Indicator Light of Coil Power Supply
F21	Fuse of Coil Power Supply (Model: F 2A)
J01~J04	Terminal (Relay Contact Output)
J05	Terminal of Coil Power Supply
JA	Terminal of Contact Power Supply (For CH1~CH4)
JB	Terminal of Contact Power Supply (For CH5~CH8)
JC	Terminal of Contact Power Supply (For CH9~CH12)
JD	Terminal of Contact Power Supply (For CH13~CH16)
RAL01~RAL16	Relay Socket (Model: RM2S-UL)
F01~F16	Fuse (Model: T 1A, 2A or 3.15A can be selected)

3.3 Interface Features

When TUA713-DOR16 connects DO712-S11, one channel has 6 terminals. The figure below takes the 1st channel (CH1) and 5th (CH5) channel as examples to show the wiring of various output signals.

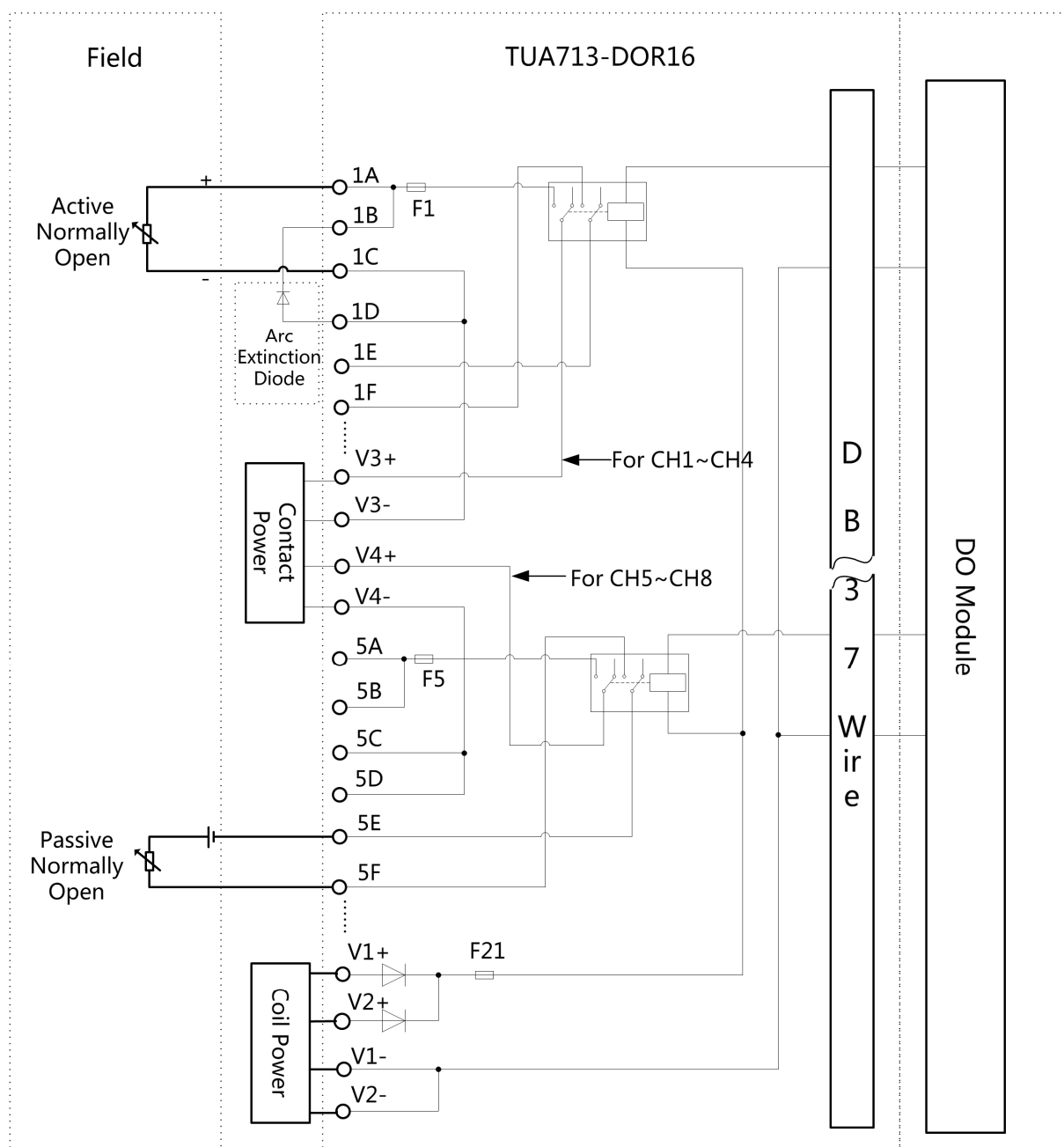


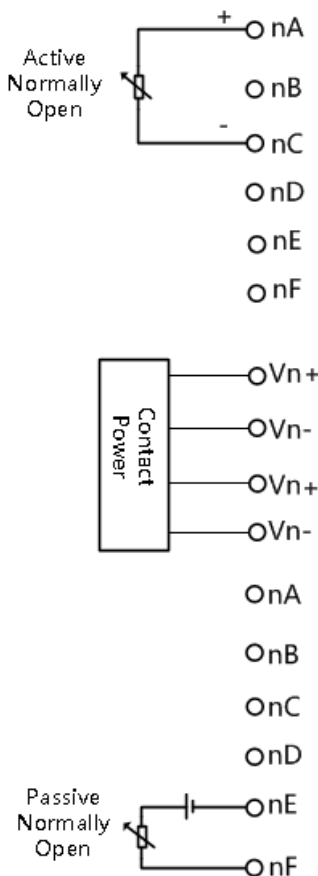
Figure 3-2 Circuit

The maximum section of wire allowed to connect the terminal in TUA713-DOR16 is 2.5mm^2 . The wires with sections of 1mm^2 or 1.5mm^2 , the wire stripping length of 8mm and the tightening torque of (0.5~0.6)Nm are recommended.

3.4 Terminal Definition and Wiring

In the figures below, “n” refers to the channel numbers of 1~16. For example, the 6 terminals of the 8th channel are 8A, 8B, 8C, 8D, 8E and 8F. JA, JB, JC and JD are terminal of active power supply. JA powers the CH1~CH4. The rest is in the same manner.

Table 3-2 Wiring

Wiring	CH1~8	Terminal	CH9~16	Terminal
<p>A Active Normally Open + B Arc Extinction Diode + C Active Normally Open - D Arc Extinction Diode - E Passive Normally Open - F Passive Normally Open + Vn Active Contact Power Terminal (n is 3/4/5/6)</p>  <p>Active Normally Open</p> <p>Passive Normally Open</p> <p>Contact Power</p> <p>Vn+ Vn- Vn+ Vn-</p> <p>OnA OnB OnC OnD</p> <p>V3+ CH1~CH4 Active Contact Power + V3- CH1~CH4 Active Contact Power -</p> <p>V5+ CH9~CH12 Active Contact Power + V5- CH9~CH12 Active Contact Power -</p>	CH1	1A	CH9	9A
		1B		9B
		1C		9C
		1D		9D
		1E		9E
		1F		9F
	CH2	2A	CH10	10A
		2B		10B
		2C		10C
		2D		10D
		2E		10E
		2F		10F
	CH3	3A	CH11	11A
		3B		11B
		3C		11C
		3D		11D
		3E		11E
		3F		11F
	CH4	4A	CH12	12A
		4B		12B
		4C		12C
		4D		12D
		4E		12E
		4F		12F
	JA	V3+ CH1~CH4 Active Contact Power +	JC	V5+ CH9~CH12 Active Contact Power +
		V3- CH1~CH4 Active Contact Power -		V5- CH9~CH12 Active Contact Power -
	CH5	5A	CH13	13A
		5B		13B
		5C		13C
		5D		13D
		5E		13E
		5F		13F

Wiring	CH1~8	Terminal	CH9~16	Terminal
	CH6	6A	CH14	14A
		6B		14B
		6C		14C
		6D		14D
		6E		14E
		6F		14F
	CH7	7A	CH15	15A
		7B		15B
		7C		15C
		7D		15D
		7E		15E
		7F		15F
	CH8	8A	CH16	16A
		8B		16B
		8C		16C
		8D		16D
		8E		16E
		8F		16F
	JB	V4+ CH5~CH8 Active Contact Power +	JD	V6+ CH13~CH16 Active Contact Power +
		V4- CH5~CH8 Active Contact Power -		V6- CH13~CH16 Active Contact Power -

Section 4 Engineering Application

4.1 Notes

- In TUA713-DOR16, LED01 is the power indicator light of coil, and F21 is the power fuse of coil.
- When the contact side power is 220V AC, the arc extinction diodes of all channels should be removed to avoid damage to the module.
- Please cut off the power before changing the fuse for safety.

4.2 Troubleshooting

- LED01 is the power indicator light of coil. If the coil power of module has been connected and turned on, but the LED01 is off, please check the fuse of coil power and the wiring.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable Product Version	Remarks
V1.0(20131012)	TUA713-DOR16 V10.00.00 and later versions.	The first version.
V1.1(20141202)	TUA713-DOR16 V10.00.00 and later versions.	Modify appearance and connectors
V1.2(20170519)	TUA713-DOR16 V10.00.00 and later versions.	Add code
V1.3(20210206)	TUA713-DOR16 V10.00.00 and later versions.	Add note for arc extinction diode