

Relay Output Terminal Unit






TUA712-DOR16

User manual

IM23H67-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 TUA712-DOR16

Section 1 Overview

TUA712-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 of high power. The terminal unit can work with the change-over bases MB745-S11 or MB746-S11 via the wire DB37.

Each channel of TUA712-DOR16 has 3 terminals, and supports outputting signals of passive and active normally open. Every channel has the channel indicator light and changeable fuse, the power supply has changeable fuse and indicator light, and the relay has socket. Therefore, user can change and maintain conveniently.

This terminal unit applies DIN rail installation and supports inlet wire of single side.

Section 2 Specifications

Table 2-1 Specifications

Parameter		Instruction
Model		TUA712-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	24V DC \pm 10%
	Contact	24VDC \pm 10% or 220VAC \pm 10%
Contact Operation Times (Electrical Life)		> 100000
Maximum Contact Operation Frequency		20 Times/Minute (Rated Control Capacity)
Load		3A/ Channel (MAX), Total of 8 Channels Cannot Exceed 10A
Fuse	Coil (16 Channels for Each Group)	2A Pluggable Fuse
	Contact (8 Channels for Each Group)	10A Pluggable Fuse
	Contact (Each Channel)	1A/250V Pluggable Fuse, 2A or 3.15A can be selected
Dimension (L×W×H)		300mm×90mm×70mm



Tip:

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

Section 3 Usage

3.1 Appearance

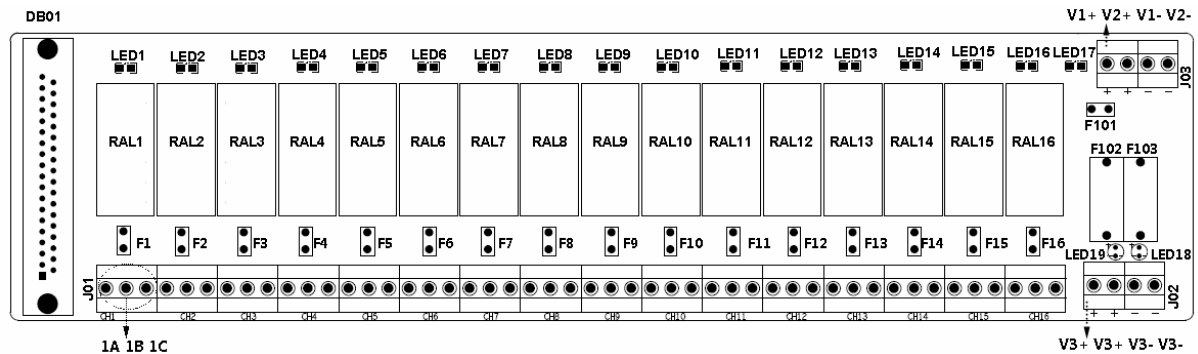


Figure 3-1 Appearance



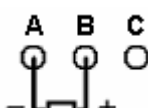
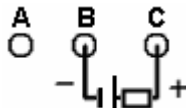
3.2 Connectors

Table 3-1 Connectors

Sign	Instruction
DB01	DB37 Socket
J01	Terminal (Relay Contact Output)
J02	Terminal of Contact Power Supply
J03	Terminal of Coil Power Supply
LED17	Power Indicator Light of Contact Power Supply
F102, F103	Fuse of Contact Power Supply (Model: F 10A)
F101	Fuse of Coil Power Supply (Model: F 2A)
LED18, LED19	Power Indicator Light of Coil Power Supply
RAL01~RAL16	Relay (Model: RCL424024)
F1~F16	Fuse (Model: T 1A, 2A or 3.15A can be selected)
LED1~LED16	Channel Indicator Light (ON: have signal; OFF: No Signal)

3.3 Wiring of Signal Connection

Table 3-2 Wiring of signal connection

Signal	Active Normally Open Output	Passive Normally Open Output
Settings of F1~F16	 (Fuse Jump up)	 (Fuse Not Jump)
Wring of CH1~CH16		

**Attention:**

Please make sure that the fuse settings in signal channel are correct before power on. Otherwise, damage for terminal board or module may be caused.

3.4 Interface Features

When TUA712-DOR16 connects DO712-S11, one channel has 3 terminals. The figures below all take the 1st channel (CH1) and 9th channel (CH9) as examples to show the wiring of various output signals.

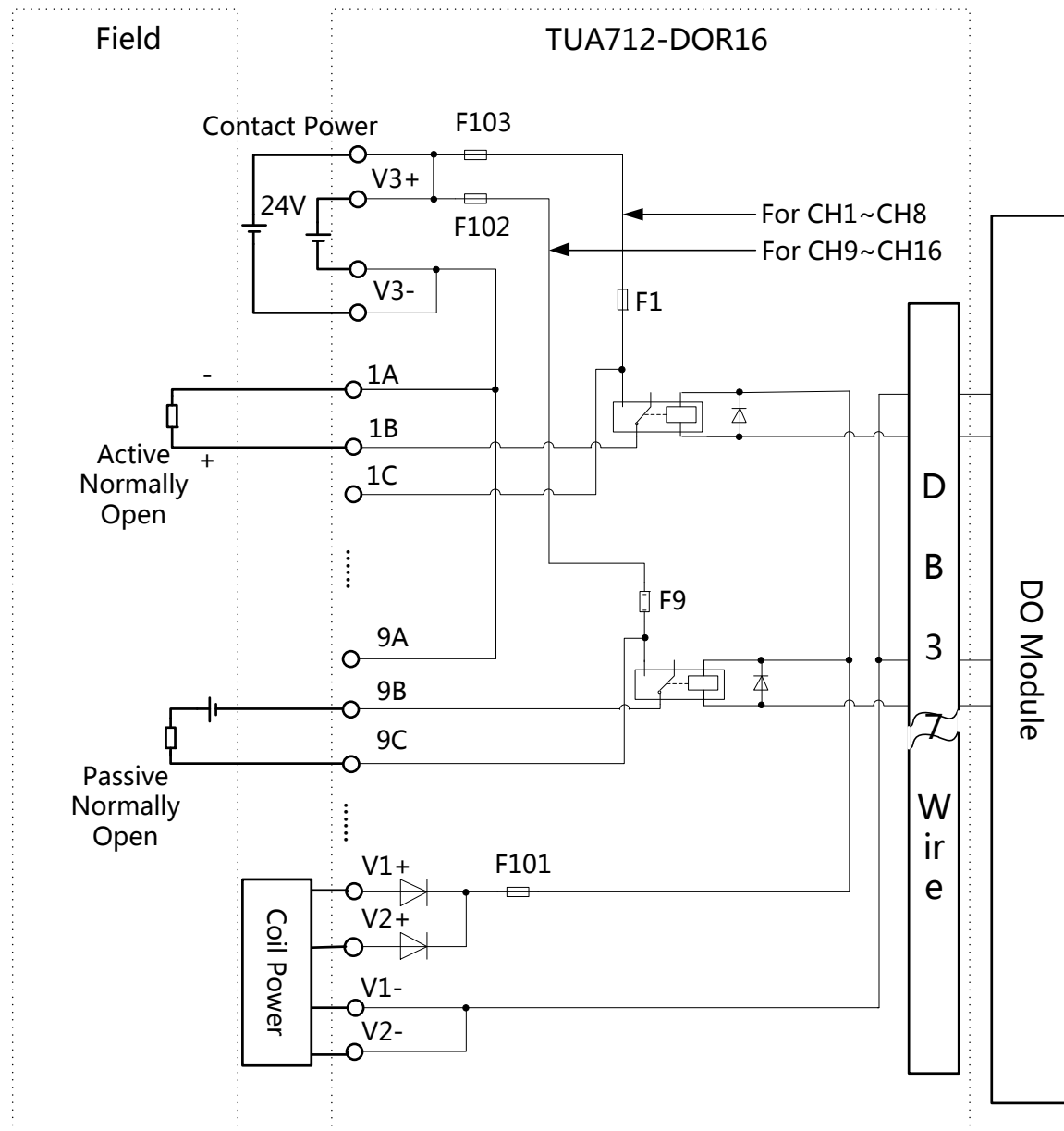


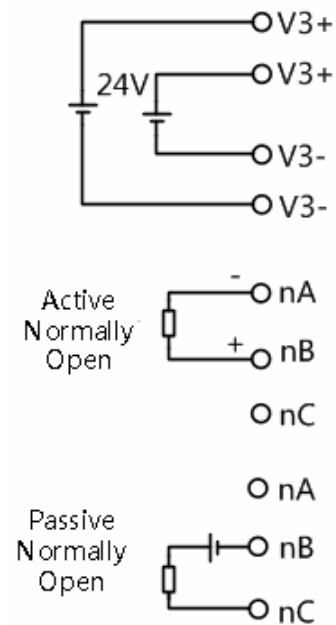
Figure 3-2 Circuit

The maximum section of wire allowed to connect the terminal in TUA712-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.

3.5 Terminal Definition and Wiring

The 3 terminals of each channel are A, B and C. The number before the letter refers to the channel number. In the figures below, “n” refers to 1~16. For example, the 3 terminals of the 8th channel are 8A, 8B and 8C. V+ and V- are terminals of active contact power supply.

Table 3-3 Wiring

Wiring	CH1~8	Terminal	CH9~16	Terminal
<p>A Active Normally Open - B Common terminal (Passive Normally Open -, Active Normally Open +) C Passive Normally Open + V3 Contact Power Terminal Contact Power</p>  <p>Active Normally Open</p> <p>Passive Normally Open</p>	CH1	1A	CH9	9A
		1B		9B
		1C		9C
	CH2	2A	CH10	10A
		2B		10B
		2C		10C
	CH3	3A	CH11	11A
		3B		11B
		3C		11C
	CH4	4A	CH12	12A
		4B		12B
		4C		12C
	CH5	5A	CH13	13A
		5B		13B
		5C		13C
	CH6	6A	CH14	14A
		6B		14B
		6C		14C
	CH7	7A	CH15	15A
		7B		15B
		7C		15C
	CH8	8A	CH16	16A
		8B		16B
		8C		16C
	J03	V+ CH1~CH8 Active Contact Power +	J03	V+ CH9~CH16 Active Contact Power +
		V- CH1~CH8 Active Contact Power -		V- CH9~CH16 Active Contact Power -

Section 4 Engineering Application

4.1 Notes

- In TUA712-DOR16, LED17 is the power indicator light of coil, and F101 is the power fuse of coil.
- Please cut off the power before changing the fuse for safety.

4.2 Troubleshooting

- LED17 is the power indicator light of coil. If the coil power of module has been connected and turned on, but the LED17 is off, please check the fuse F101 of coil power and the wiring.
- LED18 and LED19 are the power indicator lights of contact. If the power has been connected but the indicator is off, please check the fuses F102 and F103 and check the wiring.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable Product Version	Remarks
V1.0(20131012)	TUA712-DOR16 V10.00.00 and later versions.	The first version.
V1.1(20140428)	TUA712-DOR16 V10.00.00 and later versions.	Add attention and modify relay model
V1.2(20150910)	TUA712-DOR16 V10.00.00 and later versions.	Modify instruction of fuse
V1.3(20161116)	TUA712-DOR16 V10.00.00 and later versions.	Add code