

Digital Output Module






DO711-S11

User manual

IM23H45-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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Digital Output Module DO711-S11

Section 1 Description

Digital signal output module DO711-S11 has 16-channel transistor output function. It can drive the motor control device directly or through the matching relay terminal board. The module has single trigger pulse width output function. It can output single pulse ranking from 0.01s to 60s according to the time scope set by the monitoring computer. The module can set as redundant of 1:1.

Meanwhile, it has periphery power testing and channel self-testing functions.

Section 2 Technical Specifications

Table 2-1 Technical specifications of DO711-S11

Parameter		Instruction
Module type		DO711-S11
Type		Digital Signal Output Module
Channel number		16
Redundancy		Support
Isolation type		Group Isolation
Temperature	Operating	(-20~70)°C
	Storage	(-40~85)°C
Humidity	Operating	10%RH~90%RH. No Vapor Condensation
	Storage	5%RH~95%RH. No Vapor Condensation
System Power		24V DC±10%
24V system power consumption	system	<1.2W
	cabinet	<18W
Output signal type		Transistor DC 24V Output
Load capability		Single Channel DC24V-100mA (max) Single Group (8 channels) DC24V-300mA (max) Single Module DC24V-600mA (max)
Output time-delay	ON→OFF	2ms (max)
	OFF→ON	2ms (max)

Section 3 Usage Instruction

3.1 Led Indicators

Instruction of LED indicator is shown in Table 3-1. When the indicator flashes, the flashing cycle is 400ms, and it will overturn every 200ms.

Table 3-1 LED indicators in DI711-S

LED indicator	Fault (red)	Status (green)	Duplex (green)	L-Bus (green)	Supply (green)
Meaning Status	Fault Indicator	Running Indicator	Work / Standby	Communication Indicator	Auxiliary Power Supply Status Indicator
OFF	Normal	--	Standby	Communication Link Break	Abnormal Auxiliary Power Supply
ON	Fault	Normal	Work	Normal	Normal
Flashing	--	No Configuration	--	IP confliction	--

3.2 Interface Features

The circuit of DO711-S11 module interface is shown in Figure 3-1. The connection terminals 1 and 2 are connected to the anode and cathode of channel 1 (CH1) respectively.

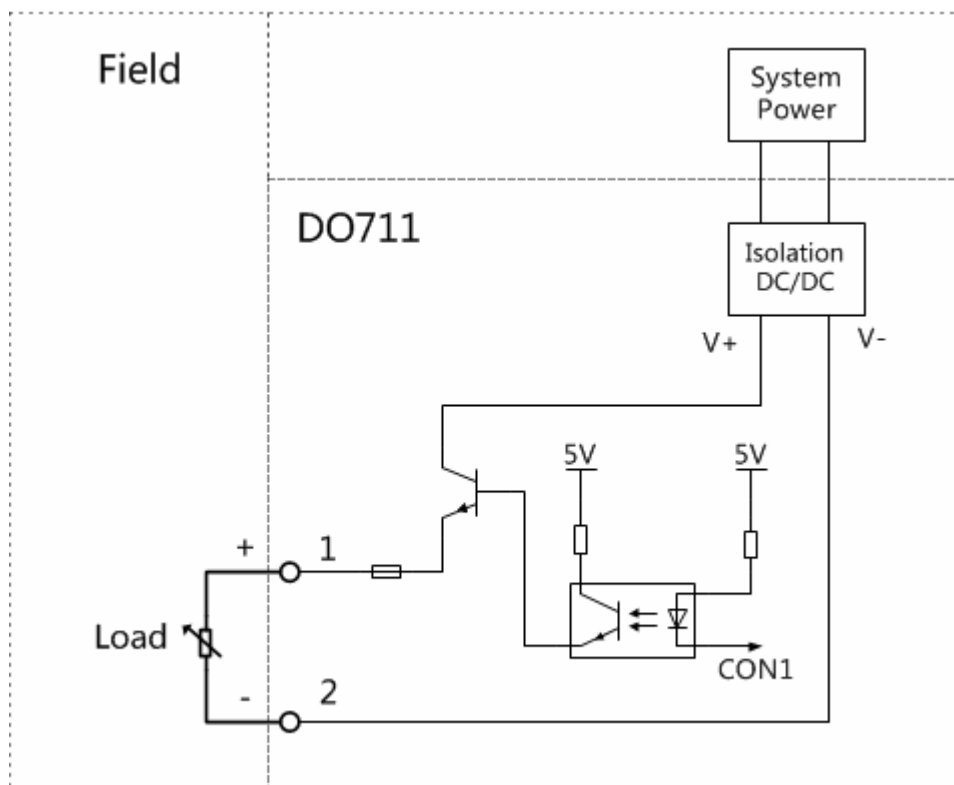


Figure 3-1 Interface Circuit of DO711-S11 (Take MB735-S as an Example)

The DO711-S11 module controls the current on the load by controlling the status (on or off) of the 24V power. Relay terminal board is needed in site for the control object which has voltage equal to 220V or current more than 100mA.

3.3 Terminals Definition & Connection

DO711-S11 module output connection instruction is shown in Figure 3-2. CH* refers to the channel number. Each channel has 2 terminals, CH-1 and CH-2.

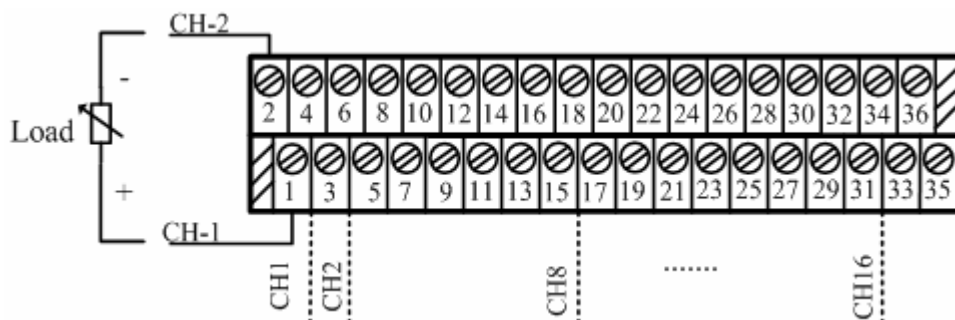
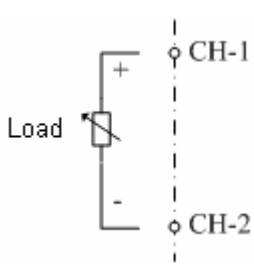


Figure 3-2 Terminal Connection Diagram

Table 3-2 Terminal Connection

Wiring	Channel	Terminal	Instruction	Instruction	Terminal	Channel
	CH1	1	CH-1	CH-1	17	CH9
		2	CH-2	CH-2	18	
	CH2	3	CH-1	CH-1	19	CH10
		4	CH-2	CH-2	20	
	CH3	5	CH-1	CH-1	21	CH11
		6	CH-2	CH-2	22	
	CH4	7	CH-1	CH-1	23	CH12
		8	CH-2	CH-2	24	
	CH5	9	CH-1	CH-1	25	CH13
		10	CH-2	CH-2	26	
	CH6	11	CH-1	CH-1	27	CH14
		12	CH-2	CH-2	28	
	CH7	13	CH-1	CH-1	29	CH15
		14	CH-2	CH-2	30	
	CH8	15	CH-1	CH-1	31	CH16
		16	CH-2	CH-2	32	
	/	33	Disconnected		35	/
		34			36	

The standard base wiring of DO711-S11 is shown in Figure 3-2. CH* refers to the channel number.

Terminal number corresponds to the terminal row number of base.

3.4 Base & Terminal Board Selection

The bases and terminal boards matching DO711-S11 are shown in Table 3-3. When working with the terminal board, please refer to the user manual of specific terminal board.

Table 3-3 Selection table of bases/terminal board matching DO711-S11

Output Mode	Module Work Mode	Base Model	Terminal Board Model
Directly output	Single	MB735-S	--
	Redundancy	MB736-S	
Change-over output	Single	MB745-S	TUA711-GS00
	Redundancy	MB746-S	
Rely output (passive)	Single	MB745-S	TU721-R0000
	Redundancy	MB746-S	
Rely output (active)	Single	MB745-S	TU721-R0100
	Redundancy	MB746-S	

3.5 Configuration Instruction

Please refer to Hardware Module Builder User Manual and Tags Builder User Manual for details.

The module address is determined according to the module position in the rack (please refer to the Control Station Hardware User Manual). When configuring, according to the module position in the rack, choose corresponding control domain addresses (0~15), control machine address (2~126), I/O link module address (1~7), I/O rack address (0~3), module address (0~15) and channel number (0~15).

Section 4 Engineering Application

4.1 Notices

- Fail-safe mode only works for status output.
- Fail-safe mode is only started when the module communication has fault.
- For pulse width output, the trigger condition of pulse width should be positive of OFF→ON. The channel outputs OFF after the pulse width output finished.
- In practical applications, the maximum load current of the module, each group channels or each channel can not exceed its limit value.
- If DO711-S works with the relay terminal board TU721-R, when all channels are ON, the maximum consumption in the field is 10.2W (cabinet consumption: 9W, system consumption: 1.2W). The consumption is large. Therefore, the power consumption of whole cabinet shall be calculated during engineering design, and set the module properly.

4.2 Fault diagnosis and troubleshooting

- When the light “**Fault**” is always on, the module has serious fault and should be replaced.
- When the light “**L-Bus**” is always off, please check the communication wiring, if it is normal, the module has fault and should be replaced.
- When the light “**L-Bus**” is flash, the address conflicts. Please check if there is conflicting module in the bus.
- When the light “**Supply**” is always off, please plug out the module and then plug in again. If the light “**Supply**” is always off, the module has fault and should be replaced.
- If all lights are off after powering on, please check the power connection of module system, if it is normal, the module has fault and should be replaced.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable Module Version	Remarks
V1.0	DO711-S11 V 11.11.00 and later versions.	The first version.
V1.1	DO711-S11 V 11.11.00 and later versions.	Modify achievement and wiring
V1.2(20150917)	DO711-S11 V17.17.00 and later versions.	Modify I/O link module address Modify specifications
V1.3(20160503)	DO711-S11 V17.17.00 and later versions.	Modify the Notices
V1.4(20161116)	DO711-S11 V17.17.00 and later versions.	Add code