

Isolated Barriers Backplane






TU741-I0000

User manual

IM23H71-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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Isolated Barriers Backplane TU741-I0000

Section 1 Description

TU741-I0000 is a 16-channel isolated barriers backplane, which can be used for one or a pair of redundant module DI711-S, or one module DI713-S. 8 MTL4500 series or SB4000 series switch input isolated barriers can be installed on TU735-I0000. The intrinsic safety side is for DI (switch, proximity switch) input, and the system side is for relay output.

Terminal board supports DIN railways.

Section 2 Technical Specifications

Table 2-1 technical specifications

Parameter	Description	
Module model	TU741-I0000	
Channel NO.	16	
The matched isolated barriers type	MTL4516 (input/output isolated) SB4012-EX (input/output isolated)	safe-area side DI (switch, proximity switch) input, system side relay output
Power distribution	24V DC (redundancy)	With fuse
dimension	153.5 mm*151.5mm	
Working temperature	-20°C ~70°C	

Section 3 Usage Instruction

3.1 Structure diagram

The structure diagram of TU741-I0000 is shown as Figure 3-1. The 16 signals of isolated barrier are introduced to J1.

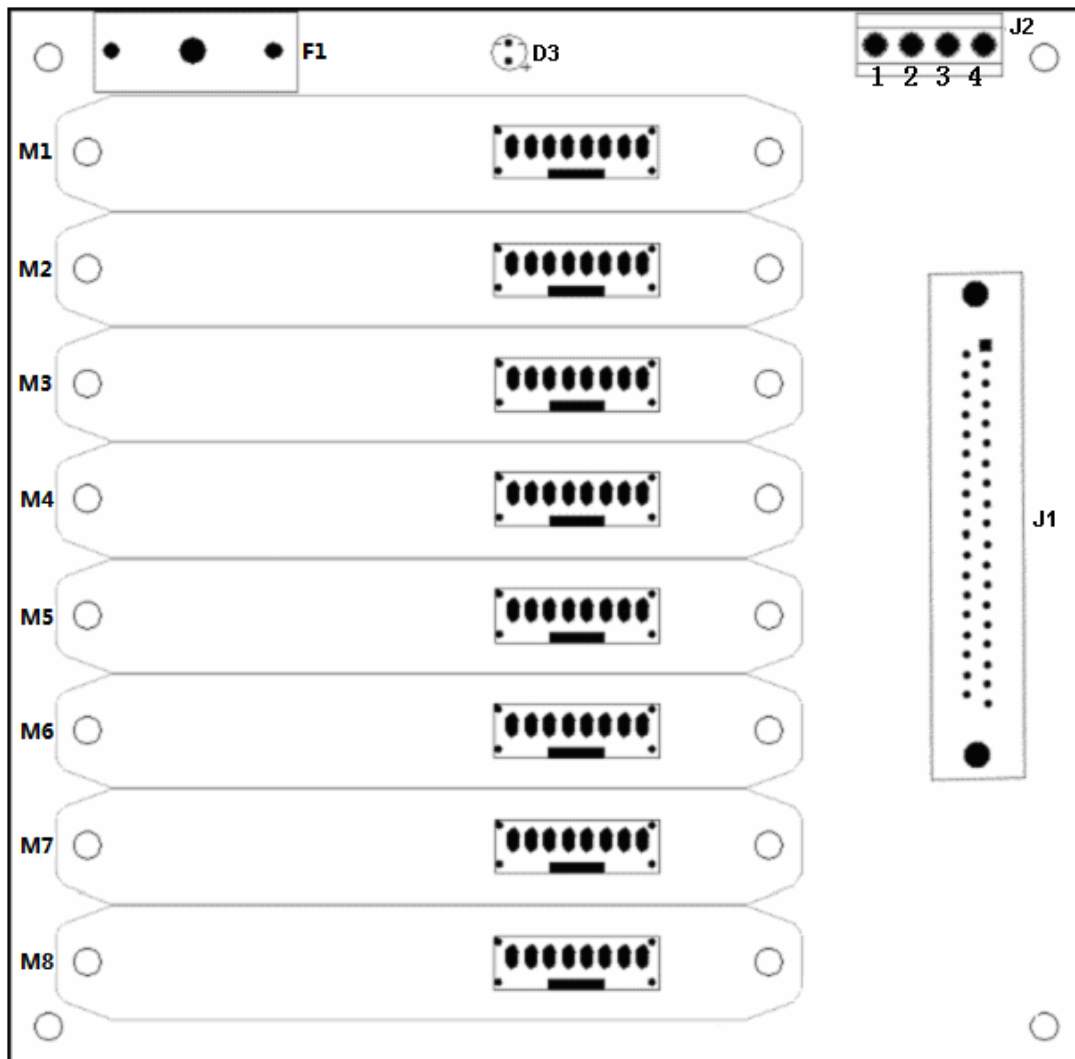


Figure 3-1 Structure Diagram of TU741-I0000

3.2 Connectors

The connectors of TU741-I0000 are shown as Table 3-1:

Table 3-1 Connector of TU741-I0000

Socket	Note
J1	Connectors of DB37

Socket	Note
J2	Wiring terminal; for power supply
F1	fuse

3.3 Isolated barrier type supported by backplane

Table 3-2 Isolated barrier type supported by backplane

Isolated barrier	Remark	Clip kit
MTL4516	safe-area side DI (switch, proximity switch) input, system side relay output	MCK45
SB4012-EX	safe-area side DI (switch, proximity switch) input, system side relay output	-

3.4 Power supply terminals definition of backplane

The wiring terminals description of J2 in the TU741-I0000 is shown as Table 3-3. When the redundant 24V is needed, it can be introduced via terminals 1 and 2, 3 and 4 respectively. “24VA” and “24VB” represents they should connect to the anode of a 24V power supply externally while “VS-” represents it should connect to the cathode of a 24V power supply. When the redundant 24VDC is needed, it can be introduced via terminals 1 and 2, 3 and 4 respectively.

Table 3-3 Power Supply Wiring Terminal Description

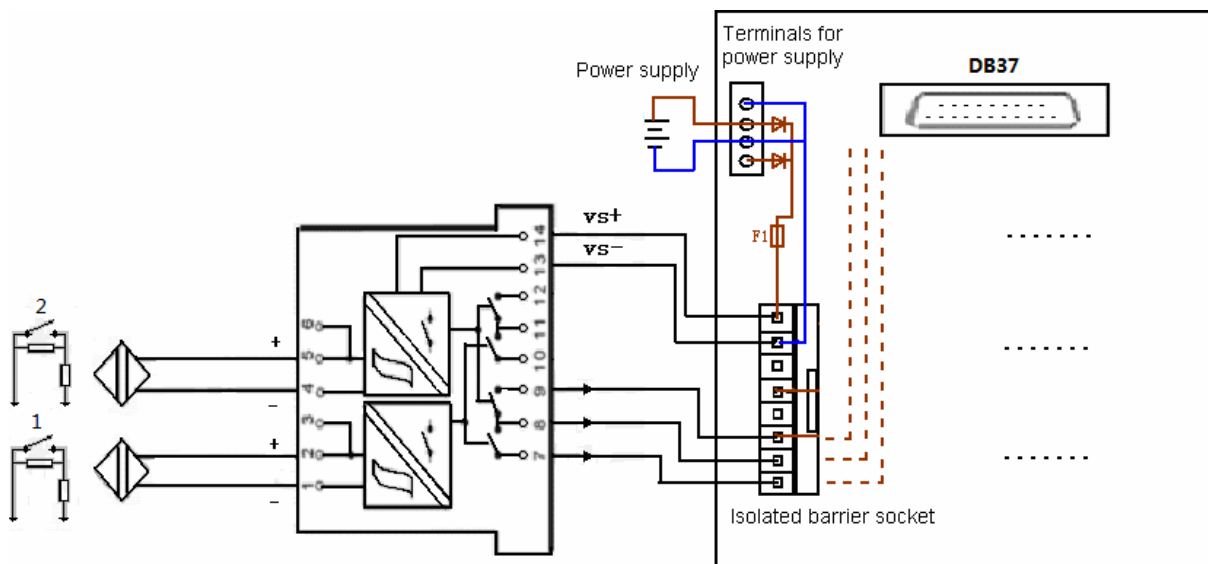
Definition	NO.	Remarks
24VA	1	Connects to 24V(1) anode
VS-	2	Connects to 24V(1) cathode
24VB	3	Connects to 24V(2) anode
VS-	4	Connects to 24V(2) cathode

3.5 Connections of signals terminals

DI isolated barrier of MTL4500 series can be installed on the isolated barriers backplane TU735-I0000, with 6 wiring terminals on the top and an 8PIN socket at the bottom connected to the isolated barriers backplane. The field signals are connected to the 6 terminals mentioned above, they're sent to the 8PIN connector via switchover and isolating by the isolated barrier, then connected to the DI711-S/DI713-S via DB37. The wiring diagram is shown as Figure 3-2.

Table 3-4 Terminals Wiring of Field Signals

Signal description	Channel	Wiring terminal in field side
DI	CH1	1(signal -)
		2(signal +)
	CH2	4(signal -)
		5(signal+)

**Figure 3-2 Wiring diagram of isolated barrier MTL4516**

3.6 D3 Indicator

D3 indicator is the power supply indicator of the TU741-I0000 backplane .That it is on represents the 24VDC is normal, while it is off represents the 24VDC is abnormal.

3.7 Base Selection

Selection of bases/I/O module matching TU741-I0000 is shown in Table 3-5.

Table 3-5 Selection of bases/module

Signal Connection Requirement	Working Mode	Base Model	I/O module	Terminal for Auxiliary Power
Terminal Change-over	Single	MB741-S01	DI711-S	With Terminal
	Redundancy	MB742-S01	DI713-S	
	Single	MB745-S11	DI711-S11	Without Terminal
	Redundancy	MB746-S11	DI713-S11	

3.8 Maintenance

As shown in Figure 3-1, F1 is the fuse base of 24V power distribution for isolated barriers backplaneTU735-I0000,with 20*5 glass tube fuse installed in it, Models and specifications of fuse are shown below.

Table 3-6 Instruction of Consumables

Marking	Type	Specification	Model (Standard)
F1	Glass Tube, Time-lag Fuse	4A-250V	0218004.MXP

3.9 Application notices

- The channel group is no power distribution in the system configuration, and the power supply of field signals is supplied by the isolated barrier.
- Isolated barriers backplane should be installed and fixed with MCK45 when using with MTL4500 series isolated barrier.

Section 4 Revision

Table 4-1 Retrofit list of the version

Document Version	Applicable Module Version	Remarks
V1.0	TU741-I0000-10.00.00	
V2.0	TU741-I0000-10.00.00	
V2.1(20130407)	TU741-I0000-11.00.00	Change the fuse capacity
V2.2(20130608)	TU741-I0000-11.00.00	Add the information of MCK45, Add maintenance
V2.3(20140411)	TU741-I0000-11.00.00	Add Base Selection
V2.4(20141218)	TU741-I0000-11.00.00 and above	Modify structure diagram
V2.5(20160503)	TU741-I0000-11.00.00 and above	Modify the description of DI713-S in Description
V2.6(20161116)	TU741-I0000-11.00.00 and above	Add code
V2.7(20190318)	TU741-I0000-11.00.00 and above	Refine the circuit figure of power supply.