

Isolated Barriers Backplane






TU735-I0000

User manual

IM23H70-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 TU735-I0000

Section 1 Description

TU735-I0000 is an 8-channel isolated barriers backplane, which can be used for one or a pair of redundant module AO711. 8 MTL4500 series or SB4000 series analogue output isolated barriers can be installed on TU735-I0000. The (4~20) mA signals are sent from modules to the backplane TU735-I0000 via DB37, then output to the field via isolated barriers.

Terminal board supports DIN railways.

Section 2 Technical Specifications

Table 2-1 technical specifications of TU735-I0000

Parameter	Description	
Module model	TU735-I0000	
Channel NO.	8	
The matched isolated barriers type	MTL4546/C/Y(input, output, power supply all isolated) SB4046-EX(input, output, power supply all isolated)	system side (4~20)mA input safe-area side (4~20)mA output, equipped with HART
Power supply	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 TU735-I0000 is shown as Figure 3-1. The 8 signals output to the isolated barrier via J1.

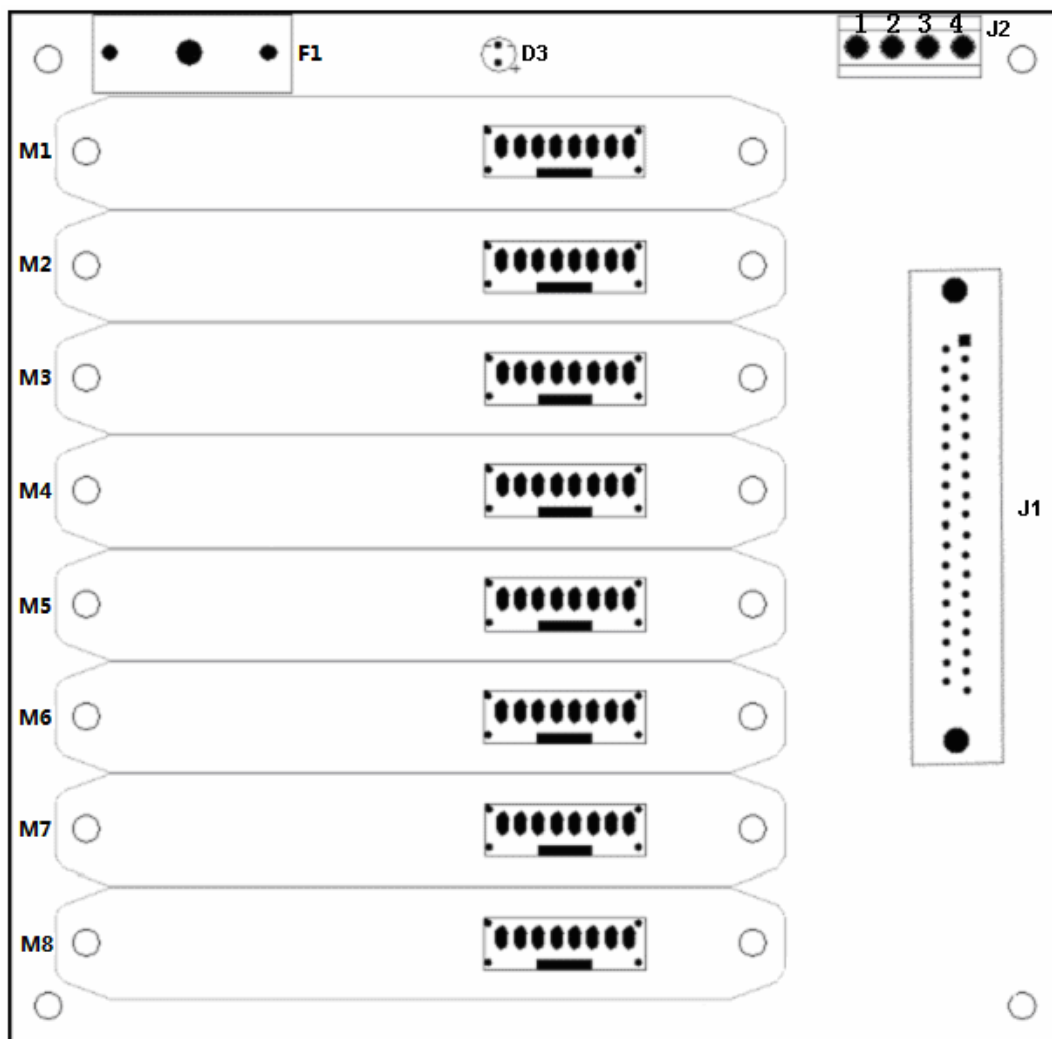


Figure 3-1 Structure Diagram of TU735-I0000

3.2 Connectors

The connectors of TU735-I0000 are shown as below:

Table 3-1 Connectors of TU735-I0000

Socket	Note
J1	Connectors of DB37
J2	Wiring terminal; for power supply

Socket	Note
F1	fuse

3.3 Isolated barrier type supported by backplane

Table 3-2 Isolated barrier type supported by backplane

Isolated barrier	Remark	Clip kit
MTL4546/C/Y	system side (4~20)mA input, safe-area side (4~20)mA output, with HART	MCK45
SB4046-EX	system side (4~20)mA input, safe-area side (4~20)mA output, with HART	-

3.4 Power supply terminals definition of backplane

The power supply wiring terminals description of TU735-I0000 is shown as Table 3-3. When the isolated barrier is connected to external power distribution, the 24V power supply can be introduced via terminals 1 and 2 or terminals 3 and 4 in J2. 1 and 3 are connected to the anode of the external 24V, 2 and 4 is connected to the cathode of 24V. When the redundant 24V is needed, it can be introduced via terminals 1 and 2, 3 and 4 respectively.

Table 3-3 TU735-I0000 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 Connection instruction

AO 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 signals are sent to the connectors on the backplane TU735-I0000 via DB37, then output to the field via the terminals 3(+) and 4(-) on the top of the isolated barrier after being isolated by it. The wiring diagram is shown as Figure 3-2.

Table 3-4 Terminals wiring of field signals

Signal description	Wiring terminal (MTL4546/C/Y)
Current signal (no power distribution)	3(signal+)
	4(signal -)

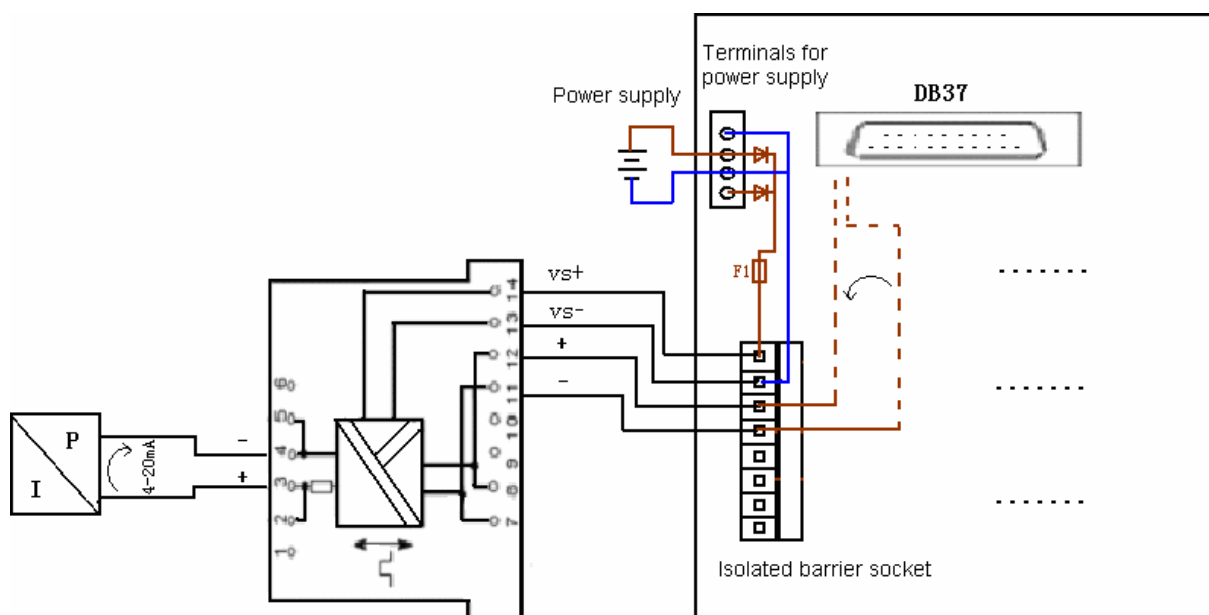


Figure 3-2 Wiring Diagram of Isolated Barrier MTL4546/C/Y

3.6 D3 Indicator

D3 indicator is the power supply indicator of the TU735-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 TU735-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	AO711-S	With Terminal
	Redundancy	MB742-S01	AO711-H	
	Single	MB745-S11	AO711-S11	Without Terminal
	Redundancy	MB746-S11	AO711-H11	

3.8 Maintenance

As shown in Figure 3-1, F1 is the fuse base of 24VDC for isolated barriers backplane TU735-I0000, with 20*5 glass tube fuse installed in it, Models and specifications of fuse are shown below.

Table 3-6 Instruction of consumable.

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

3.9 Application notices

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 Controller Version	Remarks
V1.0	Applicable Module Version: TU735-I0000-10.00.00	
V1.1	Applicable Module Version: TU735-I0000-10.00.00	
V1.2(20130407)	Applicable Module Version: TU735-I0000-11.00.00	Change the fuse capacity
V1.3(20130608)	Applicable Module Version: TU735-I0000-11.00.00	Add the information of MCK45, add manitenance
V1.4(20140411)	Applicable Module Version: TU735-I0000-11.00.00	Add Base Selection
V2.0(20141218)	Applicable Module Version: TU735-I0000-11.00.00	Modify structure diagram
V2.1(20161116)	Applicable Module Version: TU735-I0000-11.00.00	Add code
V2.2(20190318)	Applicable Module Version: TU735-I0000-11.00.00	Refine the circuit figure of the power supply