APPLICATION NOTES

Digital Output Module:
3626X (32 Channels)

AND

GMI Termination Board:
TBE-D5016-TRI-007 (16 Slots) for Single Channels GMI Modules through I/O CABLE: 4X00188-3xx

OR

TBE-D5016-TRI-009 (16 Slots) for Dual Channels GMI Modules through I/O CABLE: 4X00188-3xx

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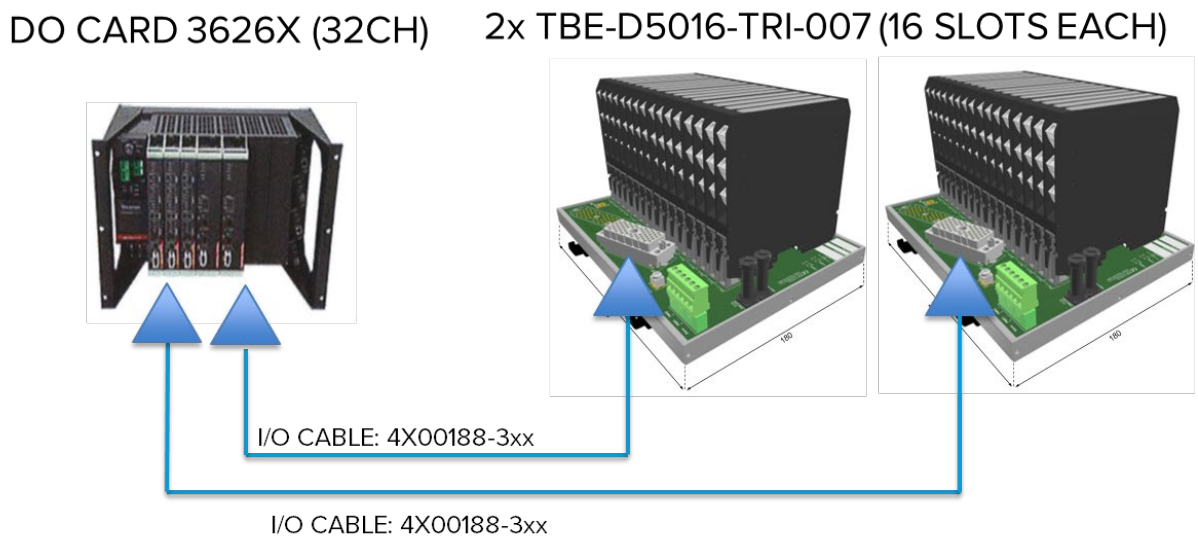
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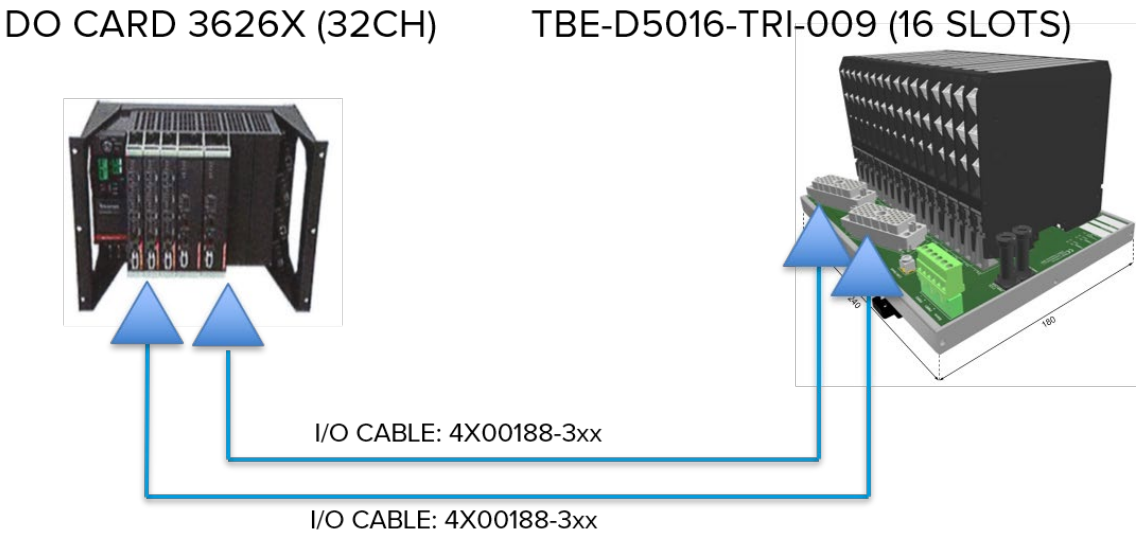
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1. INTRODUCTION

WITH SINGLE CHANNEL GMI MODULES

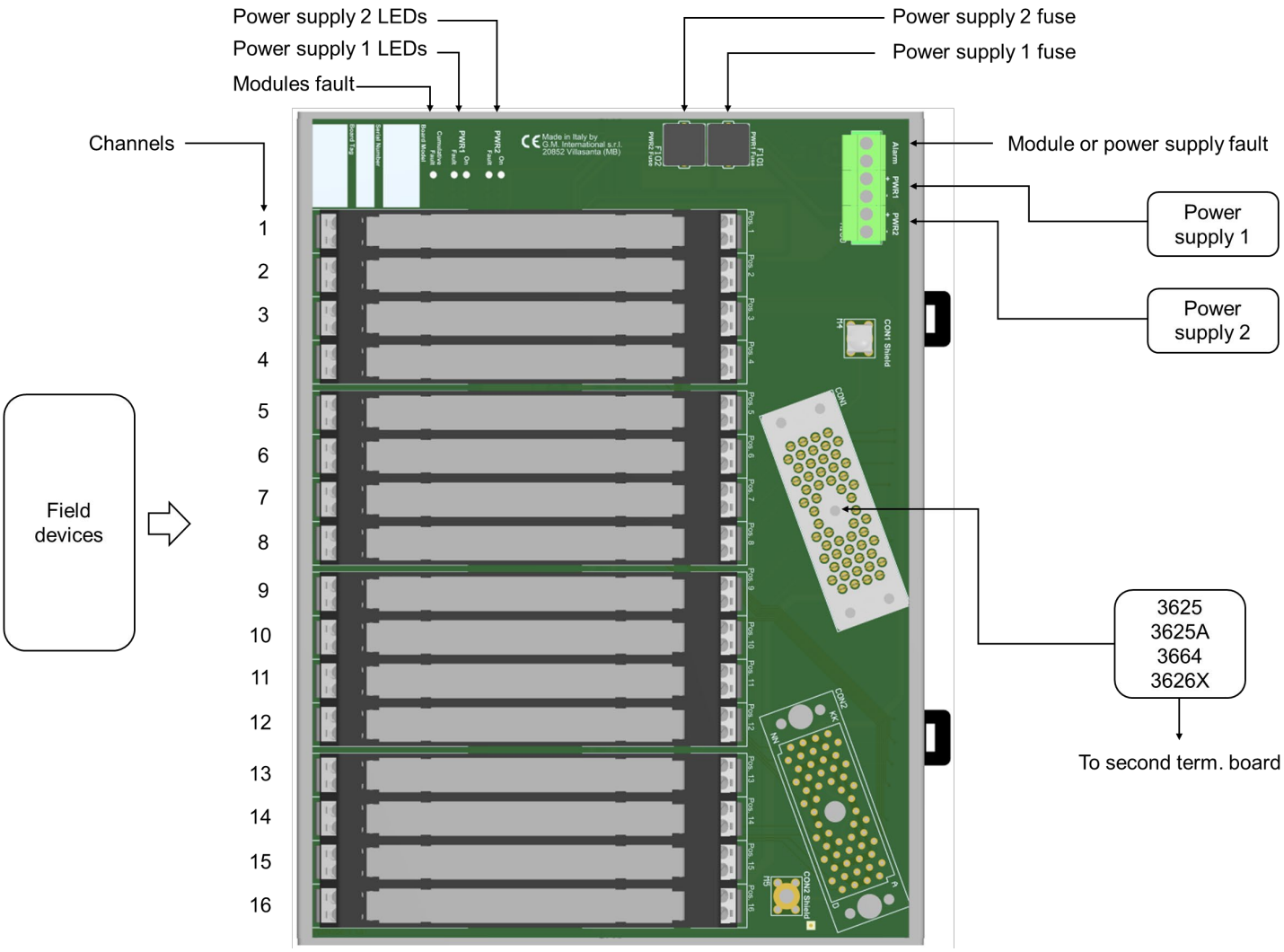


WITH DOUBLE CHANNEL GMI MODULES



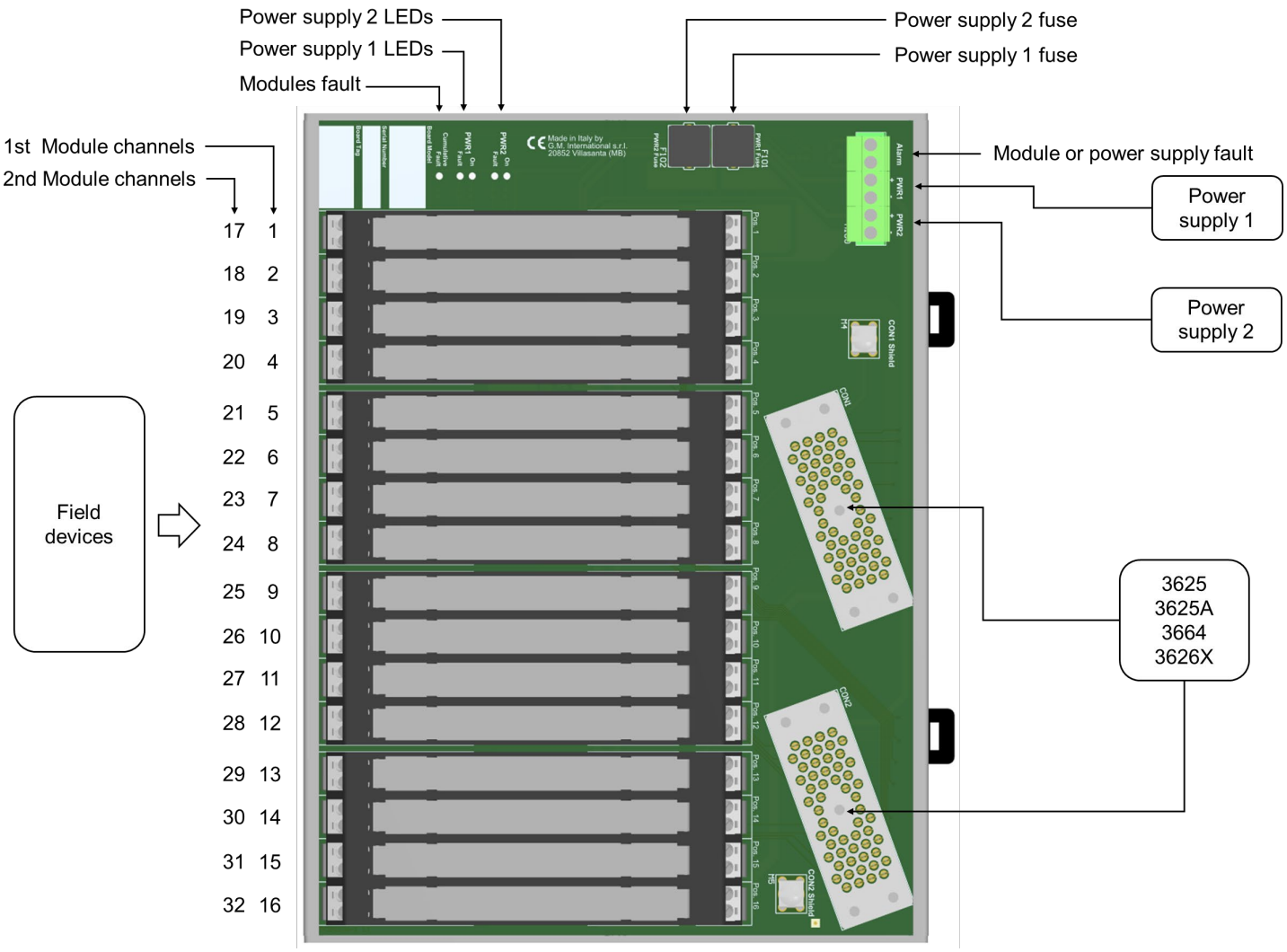
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TBE-D5016-TRI-007 has 16 slots available for GMI modules



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2. EQUIPMENT TO BE USED

2.1 Tricon CX I/O Module

3626X –Digital Output Module, 32 Channels

2.2 GMI Termination Boards

TBE-D5016-TRI-007 SIL3 Termination Board 16 Positions for Tricon CX 3626X (Single Channels GMI Modules).

TBE-D5016-TRI-009 SIL3 Termination Board 16 Positions for Tricon CX 3626X (Dual Channels GMI Modules).

2.3 GMI Interface Modules

2.3.1 DIGITAL OUTPUT – DO IS (Single Channel)

MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	REMARKS	ZONE2 /DIV2
D5040S	DIGITAL OUTPUT DRIVER LOOP POWERED	NO	NO	SOLENOID VALVE / LED	3	1/2 FIELD SELECTABLE OUTPUTS	YES
D5048S	DIGITAL OUTPUT DRIVER - LOOP POWERED	YES	NO	SOLENOID VALVE / LED	3	1/3 FIELD SELECTABLE OUTPUTS	YES
D5049S	DIGITAL OUTPUT DRIVER - LOOP POWERED	YES	YES	SOLENOID VALVE / LED	3	1/3 FIELD SELECTABLE OUTPUTS	YES

2.3.2 DIGITAL OUTPUT – DO NIS (Single Channel)

MOD.	DESCRIPTION	RELAY STATUS	LOAD STATUS	NO/NC CONTACT	HIGH AVAILABILITY	SIL	REMARKS	ZONE2 /DIV2
D5090S	RELAY OUTPUT MODULE	NE	NE	NO	/	3		YES
D5091S	RELAY OUTPUT MODULE	NE/ND	ND	NO/NC	/	3		YES
D5094S	RELAY OUTPUT MODULE	NE/ND	NE/ND	NO	YES	3		YES
D5095S	RELAY OUTPUT MODULE	NE/ND	ND/NE	NC	YES	3		YES
D5098S	RELAY OUTPUT MODULE	NE	NE	NO	/	3		YES
D6001S	PASS THROUGH MODULE	-	-	-	-	3	LOW CURRENT	YES

2.3.3 SUPERVISED DIGITAL OUTPUT – SDO NIS (Single Channel)

MOD.	DESCRIPTION	RELAY STATUS	LOAD STATUS	NO/NC CONTACT	HIGH AVAILABILITY	SIL	REMARKS	ZONE2 /DIV2
D5096S	RELAY OUTPUT MODULE	NE/ND	NE/ND	NO	YES	3	LINE MONITORING MIRRORED TO DO	YES
D5097S	RELAY OUTPUT MODULE	NE/ND	ND/NE	NC	YES	3	LINE MONITORING MIRRORED TO DO	YES
D6001S	PASS THROUGH MODULE	-	-	-	-	3	LOW CURRENT	YES

2.3.4 DIGITAL OUTPUT – DO IS (Dual Channel)

MOD.	DESCRIPTION	L.F. DETECTION	L.F. TRANSP.	FIELD	SIL	REMARKS	ZONE2 /DIV2
D5040D	DIGITAL OUTPUT DRIVER – LOOP POWERED	NO	NO	SOLENOID VALVE / LED	3	1/2 FIELD SELECTABLE OUTPUTS	YES

2.3.5 DIGITAL OUTPUT – DO NIS (Dual Channel)

MOD.	DESCRIPTION	RELAY STATUS	LOAD STATUS	NO/NC CONTACT	HIGH AVAILABILITY	SIL	REMARKS	ZONE2 /DIV2
D5098D	RELAY OUTPUT MODULE	NE	NE	NO	-	3		YES
D6001D	PASS THROUGH MODULE	-	-	-	-	3		YES

3. TRICON CX – System Configuration and Remarks

- Install the 3626X in proper slot.
- Connect the I/O cable(s) between FET and GMI Termination Board.
- Power Monitor not supported.
- LFD with D5049S (and D5096S and D5097S) can be achieved by configuring Load Supervision on the 3626X by setting thresholds SDO: Short=10, Open=1000.
- LFD with D5096S (D5097S) can be achieved by configuring Load Supervision on the 3626X by setting thresholds SDO: Short=10, Open=650.
- LFD with D6001S/D6001D (Passthrough module) can be achieved. Threshold (Short and Open) to be set according to the load. D6001S/D6001D is rated for 0,1A current load, with over current protections.

4. TERMINATION BOARD CONNECTION & SETUP

- **TBE-D5016-TRI-007** and **TBE-D5016-TRI-009** have NO Hardware Switch Setting.
- Connect the I/O Cable between FET and GMI termination board.
- Connect the Power Supply 24VDC to Terminals Supply 1 (+,-) and Supply 2 (+,-).

5. GMI MODULE SETTINGS AND CONFIGURATION

5.1 GMI Modules Switch Settings

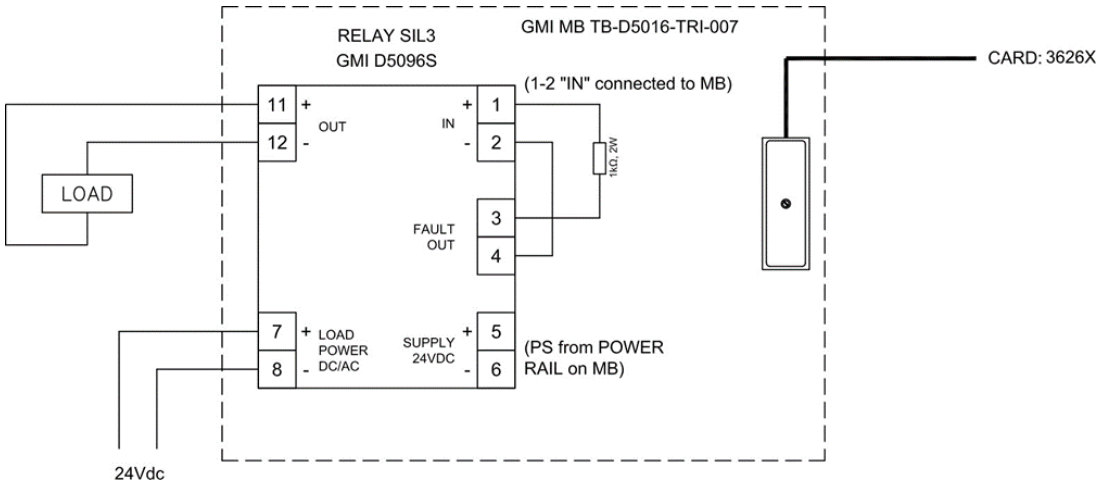
TBE-D5016-TRI-007	NO Hardware Setting
TBE-D5016-TRI-009	NO Hardware Setting
D5040S	No setting
D5040D	No setting
D5048S	SW1, Factory Default, 1 to 4 ON, LFD enabled SW2, Factory Default, 1-2-3 ON, 4 OFF, No Override
D5049S	SW1, Factory Default, 1 to 4 ON, LFD enabled SW2, Factory Default, 1-2 ON, 3-4 OFF, In/Out Direct, Fault Output Contact
D5090S	SW1, Factory Default, 1 to 6 OFF, 7-8 ON, Normal Operation
D5091S	SW1, Factory Default, 1 to 6 OFF, 7-8 ON, Normal Operation
D5094S	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D5095S	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D5096S	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D5097S	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D5098S	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D5098D	SW1, Factory Default, 1 to 4 OFF, Normal Operation
D6001S	No setting
D6001D	No setting

Above switch settings refer to the interface between GMI Modules and Triconex CX I/O module. Additional settings might be considered depending on field specific requirements; please refer to GMI Data Sheets and Instruction Manuals for further details.

5.2 GMI Configurations and Remarks

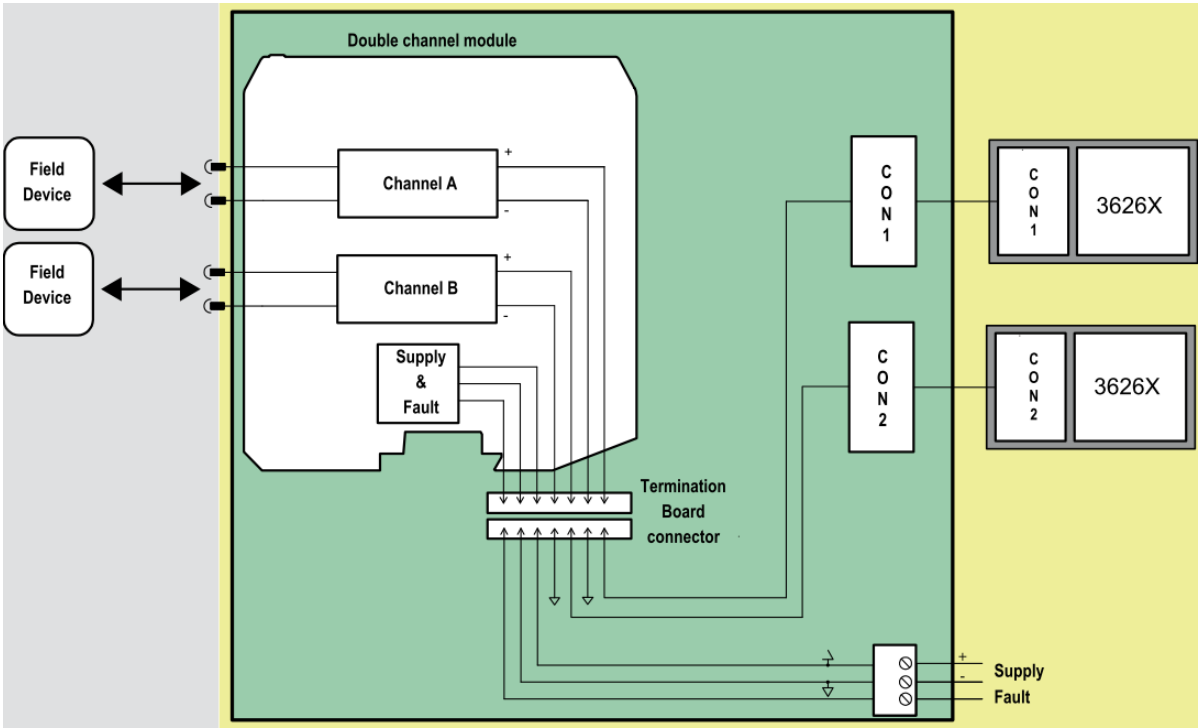
5.2.1 LINE FAULT DETECTION (LFD)

LFD with D5049S (and D5096S and D5097S) can be achieved by installing a resistor (1KOhm) between terminals 3-4 and 1-2 of the barriers.



5.2.2 TERMINATION BOARD CONNECTIONS

The Termination Board TBE-D5016-TRI-009 is designed for Dual Channel Barriers/Isolators or Relays. It provides two ELCO connectors (CON1, CON2) for direct connection to 3626X DO Cards.
CON1 connects all channel “A” of the barriers/relays (points 1 to 16 of DO card), while CON2 connects all channel “B” of the barriers/relays (points 17 to 32 of DO card).



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6. REFERENCE DOCUMENTS

6.1 Triconex

Document No.	Title
9791042-002	Tricon™ CX Products Addendum to Tricon User Guides

6.2 G.M. International

Document No.	Title
DTS0507	TBE-D5016-TRI-007 Datasheet
DTS0854	TBE-D5016-TRI-009 Datasheet
DTS0524	D5040 Datasheet
ISM0187	D5040 Instruction & Safety Manual
DTS0286	D5048 Datasheet
ISM0119	D5048 Instruction & Safety Manual
DTS0287	D5049 Datasheet
ISM0120	D5049 Instruction & Safety Manual
DTS0330	D5090 Datasheet
ISM0109	D5090 Instruction & Safety Manual
DTS0327	D5091 Datasheet
ISM0110	D5091 Instruction & Safety Manual
DTS0538	D5094 Datasheet
ISM0299	D5094 Instruction Manual
ISM0306	D5094 Safety Manual
DTS0636	D5095 Datasheet
ISM0300	D5095 Instruction Manual
ISM0307	D5095 Safety Manual
DTS0638	D5096 Datasheet
ISM0301	D5096 Instruction Manual
ISM0308	D5096 Safety Manual
DTS0639	D5097 Datasheet
ISM0302	D5097 Instruction Manual
ISM0309	D5097 Safety Manual
DTS0675	D5098 Datasheet
ISM0305	D5098 Instruction Manual
ISM0314	D5098 Safety Manual
DTS0810	D6001 Datasheet
ISM0386	D6001 Instruction Manual
ISM0384	D6001 Safety Manual