Trusted™ 40 Channel 120Vdc Digital Input FTA

Introduction

The Trusted™ 40 Channel 120Vdc Digital Input FTA T8821 is designed to act as the main interface between a field device generating a digital signal and the Trusted™ TMR 120V dc Digital Input Module T8423.

Features

- 40 input channels per FTA.
- Industry standard field device connections (2-wire).
- Standard DIN rail compatibility.
- Simple installation and connection.
- 120V dc operation.
- SmartSlot connection for ‘one to many’ hot replacement of input modules.
- Fused field power supply per channel.
- On-board LED indication field power supply integrity.

Issue Record

Issue Number	Date	Revised by	Technical Check	Authorised by	Modification
5	Sep 05	J W Clark			Format
6	Feb 08	N Owens	A Holgate	P Stock	Voltage warning

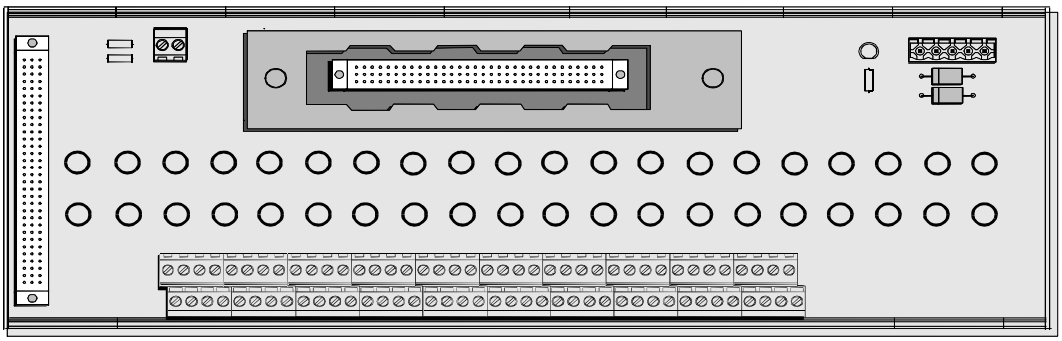

Figure 1 T8821 Layout

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WARNING

Warning notices call attention to the use of materials, processes, methods, procedures or limits which must be followed precisely to avoid personal injury or death.

CAUTION

Caution notices call attention to methods and procedures which must be followed to avoid damage to the equipment.

Notes:

Notes highlight procedures and contain information to assist the user in the understanding of the information contained in this document

Warning

HIGH VOLTAGE

This unit contains high voltage. Do not operate the unit without a protective cover.

RADIO FREQUENCY INTERFERENCE

Most electronic equipment is influenced by Radio Frequency Interference (RFI). Caution should be exercised with regard to the use of portable communications equipment around such equipment. Signs should be posted in the vicinity of the equipment cautioning against the use of portable communications equipment.

MAINTENANCE

Maintenance must be performed only by qualified personnel, otherwise personal injury or death, or damage to the system may be caused.

Caution

HANDLING

Under no circumstances should the module housing be removed.

Associated Documents

Product Descriptions (PD) provide product specific information.

The **Safety Manual** contains the recommended safety requirements for the safety system design.

The **PD8082B – Toolset Suite** provides specific guidance on system configuration and application generation.

The **Operator and Maintenance Manual** contains general guidelines on maintenance and diagnostic procedures.

For technical support email: support@icstriplex.com

1. Description

The Trusted™ 40 Channel 120Vdc Digital Input FTA T8821 provides termination for a maximum of 40 input channels from various types of field devices which generate a digital input. Figure 2 below shows the configuration of a single channel.

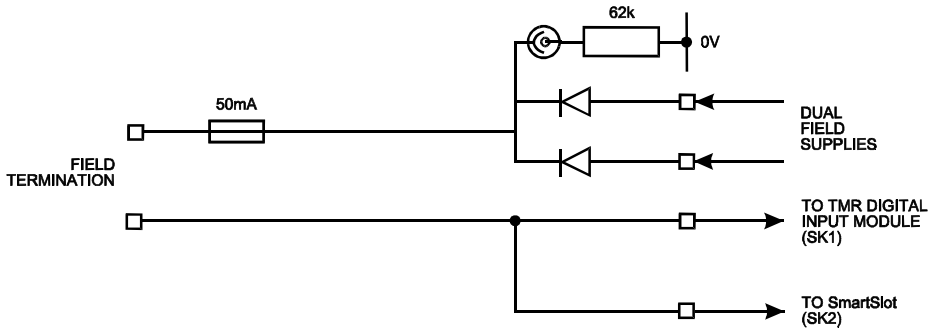

Figure 2 Single Channel Schematic

The supply for the field is derived from dual 120V dc feeds which are 'commoned' via diodes on the FTA. Indication of of the presence of the power supply is provided by a green LED. The supply is then fed to each channel.

The supply voltage to the field is fed via the 50mA fuse. This effectively limits the current in the field loop. The incoming signal (digital) from the field device is fed directly to the digital input module. Line monitoring components (if required) provide the necessary thresholds used by the input module to detect the field loop/device status, i.e. open/short circuit, alarm etc.

The cable linking the 40 channels on the input module to the FTA is terminated at the 96-way socket SK1. SmartSlot (Version 1) signals from the module are connected to SK1. The SmartSlot connector is SK2 and is also a 96-way socket. This connector is not used where SmartSlot Version 2 is employed within the Trusted™ System. The dual dc field power supplies are connected to the FTA via a 5-way terminal block PWR TB. The input signals from the field (40-off) are connected by 2-wire arrangements terminated on 12-off 3-way terminal blocks and 2-off 2-way.

2. Installation

Trusted™ 40 Channel 120Vdc Digital Input FTA T8821 is designed to be mounted on either of the TS32 or TS35 DIN rails in the horizontal or vertical positions as required.

3. Associated Cable Selection

Refer to the product descriptions detailed below:

PD-TC000	Trusted™ Power Cables
PD-TC200	Trusted™ I/O Companion Slot Cables
PD-TC500	Trusted™ I/O SmartSlot Cables Version 2

4. Assembly Pinout Connections

4.1. PWR TB Connections

Pin	Service
1	120V-A
2	120V-B
3	0V
4	0V
5	120V (auxiliary supply for use when required)

Table 1 PWR TB Connections

4.2. TB3 (Auxiliary Input)

Pin	Service
1	Chan 0 (not configured)
2	Chan 41(not configured)

Table 2 TB3 (Auxiliary Input) Connections

4.3. TB2 (Field Terminals)

Pin	Service	Pin	Service
1	Chan 1 120V dc field supply	2	Chan 1 signal from field
3	Chan 2 120V dc field supply	4	Chan 2 signal from field
5	Chan 3 120V dc field supply	6	Chan 3 signal from field
7	Chan 4 120V dc field supply	8	Chan 4 signal from field
9	Chan 5 120V dc field supply	10	Chan 5 signal from field
11	Chan 6 120V dc field supply	12	Chan 6 signal from field
13	Chan 7 120V dc field supply	14	Chan 7 signal from field
15	Chan 8 120V dc field supply	16	Chan 8 signal from field
17	Chan 9 120V dc field supply	18	Chan 9 signal from field
19	Chan 10 120V dc field supply	20	Chan 10 signal from field
21	Chan 11 120V dc field supply	22	Chan 11 signal from field
23	Chan 12 120V dc field supply	24	Chan 12 signal from field
25	Chan 13 120V dc field supply	26	Chan 13 signal from field
27	Chan 14 120V dc field supply	28	Chan 14 signal from field
29	Chan 15 120V dc field supply	30	Chan 15 signal from field
31	Chan 16 120V dc field supply	32	Chan 16 signal from field
33	Chan 17 120V dc field supply	34	Chan 17 signal from field
35	Chan 18 120V dc field supply	36	Chan 18 signal from field
37	Chan 19 120V dc field supply	38	Chan 19 signal from field
39	Chan 20 120V dc field supply	40	Chan 20 signal from field
41	Chan 21 120V dc field supply	42	Chan 21 signal from field
43	Chan 22 120V dc field supply	44	Chan 22 signal from field
45	Chan 23 120V dc field supply	46	Chan 23 signal from field
47	Chan 24 120V dc field supply	48	Chan 24 signal from field
49	Chan 25 120V dc field supply	50	Chan 25 signal from field
51	Chan 26 120V dc field supply	52	Chan 26 signal from field
53	Chan 27 120V dc field supply	54	Chan 27 signal from field
55	Chan 28 120V dc field supply	56	Chan 28 signal from field
57	Chan 29 120V dc field supply	58	Chan 29 signal from field
59	Chan 30 120V dc field supply	60	Chan 30 signal from field
61	Chan 31 120V dc field supply	62	Chan 31 signal from field
63	Chan 32 120V dc field supply	64	Chan 32 signal from field
65	Chan 33 120V dc field supply	66	Chan 33 signal from field
67	Chan 34 120V dc field supply	68	Chan 34 signal from field
69	Chan 35 120V dc field supply	70	Chan 35 signal from field
71	Chan 36 120V dc field supply	72	Chan 36 signal from field
73	Chan 37 120V dc field supply	74	Chan 37 signal from field
75	Chan 38 120V dc field supply	76	Chan 38 signal from field
77	Chan 39 120V dc field supply	78	Chan 39 signal from field
79	Chan 40 120V dc field supply	80	Chan 40 signal from field

Table 3 TB2 Field Terminals

4.4. SK1 and SK2

	C	B	A
1	Smart Slot Link C	Smart Slot Link B	Smart Slot Link A
2			
3	Chan 28 (+)	Chan 14 (+)	Chan 0 (+)
4	Chan 28 (+)	Chan 14 (+)	Chan 0 (+)
5	Chan 29 (+)	Chan 15 (+)	Chan 1 (+)
6	Chan 29 (+)	Chan 15 (+)	Chan 1 (+)
7	Chan 30 (+)	Chan 16 (+)	Chan 2 (+)
8	Chan 30(+)	Chan 16 (+)	Chan 2 (+)
9	0V	0V	0V
10	Chan 31 (+)	Chan 17 (+)	Chan 3 (+)
11	Chan 31 (+)	Chan 17 (+)	Chan 3 (+)
12	Chan 32 (+)	Chan 18 (+)	Chan 4 (+)
13	Chan 32 (+)	Chan 18 (+)	Chan 4 (+)
14	Chan 33 (+)	Chan 19 (+)	Chan 5 (+)
15	Chan 33 (+)	Chan 19 (+)	Chan 5 (+)
16	Chan 34 (+)	Chan 20 (+)	Chan 6 (+)
17	Chan 34 (+)	Chan 20 (+)	Chan 6 (+)
18	Chan 35 (+)	Chan 21 (+)	Chan 7 (+)
19	Chan35 (+)	Chan 21 (+)	Chan 7 (+)
20	0V	0V	0V
21	Chan 36 (+)	Chan 22 (+)	Chan 8 (+)
22	Chan 36 (+)	Chan 22 (+)	Chan 8 (+)
23	Chan 37 (+)	Chan 23 (+)	Chan 9 (+)
24	Chan 37 (+)	Chan 23 (+)	Chan 9 (+)
25	Chan 38 (+)	Chan 24 (+)	Chan 10 (+)
26	Chan 38 (+)	Chan 24 (+)	Chan 10 (+)
27	Chan 39 (+)	Chan 25 (+)	Chan 11 (+)
28	Chan 39 (+)	Chan 25 (+)	Chan 11 (+)
29	Chan 40 (+)	Chan 26 (+)	Chan 12 (+)
30	Chan 40 (+)	Chan 26 (+)	Chan 12 (+)
31	Chan 41 (+)	Chan 27 (+)	Chan 13 (+)
32	Chan 41 (+)	Chan 27 (+)	Chan 13 (+)

Table 4 SK1 and SK2 Connections

5. Specifications

Voltage Range	90 to 140V dc
Fuses	40-off 50mA
Maximum Current (Field Supply)	1mA
Power Consumption (Field Supply)	0.125W
Operating Temperature	-5^{0}C to 60^{0}C (23^{0}F to 140^{0}F)
Non-operating Temperature	-25^{0}C to 70^{0}C (-13^{0}F to 158^{0}F)
Operating Humidity	5 to 95% RH
Environmental Specifications	Refer to Document 552517
Dimensions	
Height	111mm (4.4ins)
Width	335mm (13.2ins)
Depth	51mm (2ins)
Weight	900gms (2lbs)

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