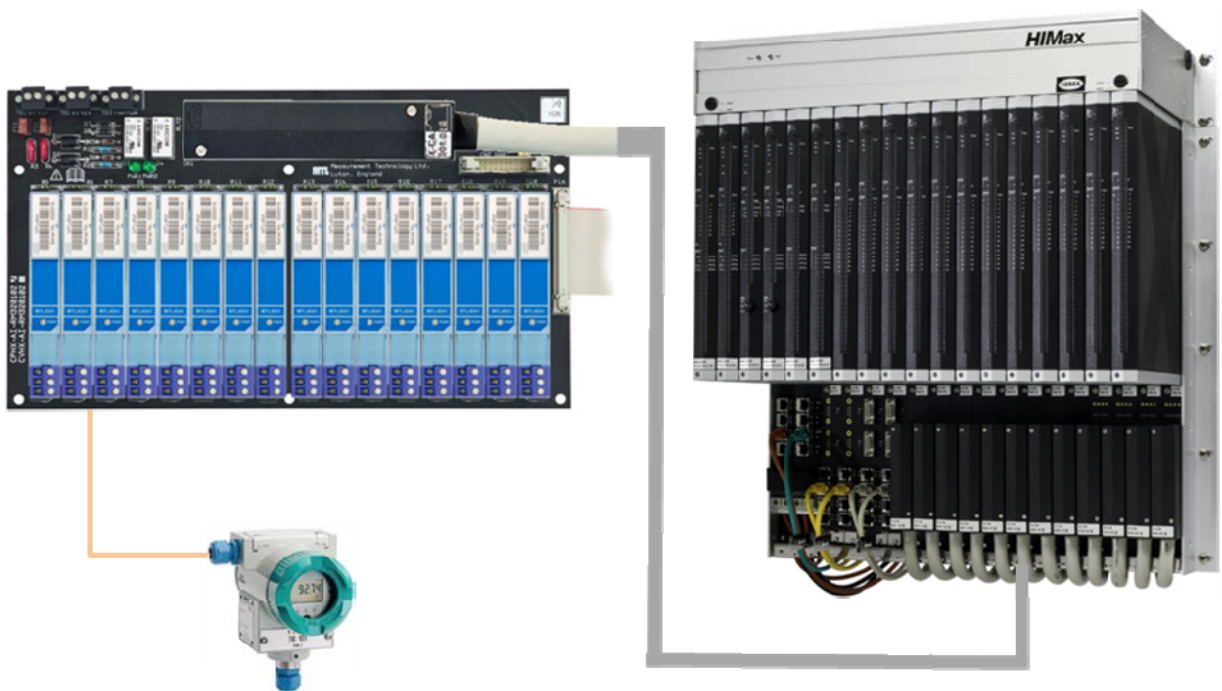


# Intrinsic Safety Solutions for HIMA HIMax

## MTL4500 SERIES INTERFACES



**MTL4500 Series**  
Intrinsically Safe solutions you can profit from

## CONTENTS

<b><u>INTRODUCTION</u></b>	<b><u>3</u></b>
<b><u>GENERAL SPECIFICATIONS</u></b>	<b><u>3</u></b>
<b><u>CPHX-AI320101</u></b>	<b><u>DUAL CHANNEL ANALOGUE INPUT</u></b>
	<b><u>5</u></b>
<b><u>CPHX-AI-RX32010X</u></b>	<b><u>SINGLE CHANNEL ANALOGUE INPUT WITH REPEAT</u></b>
	<b><u>6</u></b>
<b><u>CPHX-DI-X32010X</u></b>	<b><u>DIGITAL INPUT</u></b>
	<b><u>8</u></b>
<b><u>CPHX-2DI320101</u></b>	<b><u>DUAL CHANNEL DIGITAL INPUT</u></b>
	<b><u>10</u></b>
<b><u>CPHX-SDI-X32010X</u></b>	<b><u>SAFETY DIGITAL INPUT</u></b>
	<b><u>12</u></b>
<b><u>CPHX-DO-X32010X</u></b>	<b><u>DIGITAL OUTPUT</u></b>
	<b><u>14</u></b>
<b><u>CPHX-AO160101</u></b>	<b><u>16CH ANALOGUE OUTPUT INTERFACE WITH HART INTERFACE</u></b>
	<b><u>16</u></b>
<b><u>HMU-HX-AI320104</u></b>	<b><u>ANALOGUE INPUT HART MULTIPLEXOR UNIT</u></b>
	<b><u>17</u></b>

### Revision history

Revision	Date	
Iss 1	18-8-09	Issued
Iss 2	8-10-09	LFD linking information added
Iss 3	10-11-09	GP HARTMUX FTA added, DO24 removed
Iss 4	3-12-09	Pin assignments on IO cable mirrored to reflect pcb connector numbering
Iss 5	1-2-10	New part numbering scheme introduced
Iss 6	17-3-10	Data sheet - minor updates to part numbers
Iss 7	11-5-2010	Interconnection changes on DI interface
Iss 8	15-9-2010	Group LFD alarm wiring diagram added
Iss 9	15-11-2010	AO interface and HART Mux added. AI fuse was 2.0A
Iss 10	31-1-2011	Isolator selection table updated
Iss 11	27-9-2012	Analogue input loop diagrams added

## Introduction

# HIMax

## MTL4500 SERIES INTERFACES

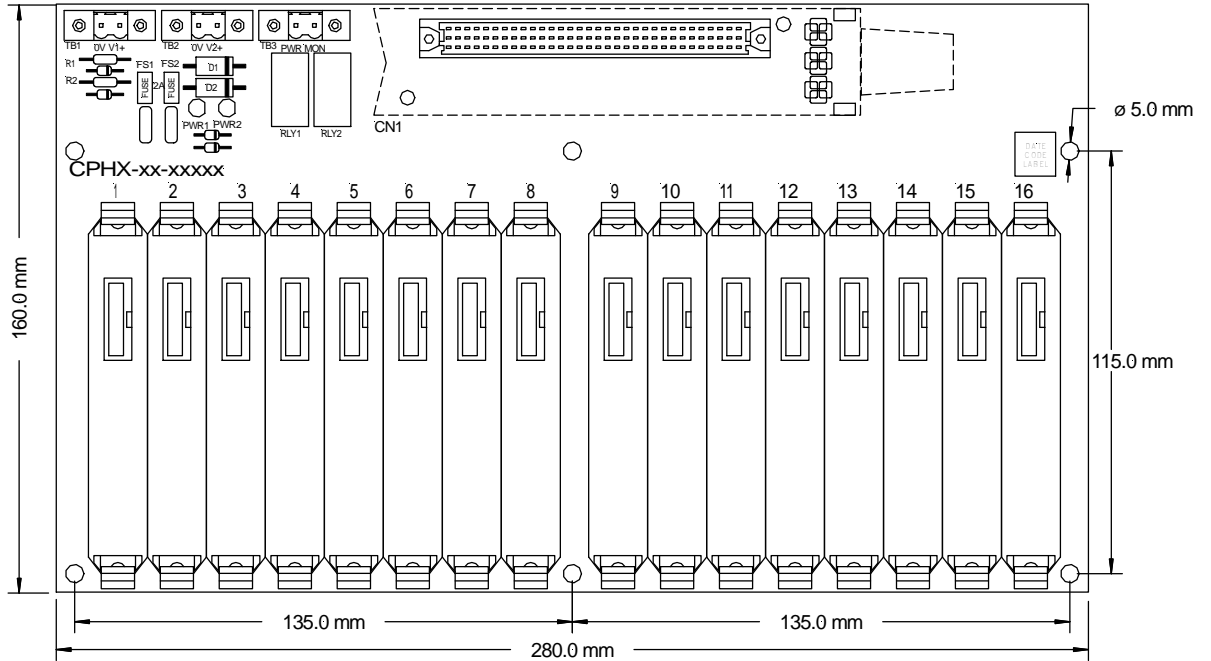
A range of dedicated backplanes and connections units designed to interface with MTL4500 series intrinsically safe isolator modules with the HIMA HIMax safety system. Connections to the IS interfaces are made via standard Hima cables. These provide a plug/socket interface for easy connection and assembly. A choice of single and dual channel IS interfaces are provided to suit the application.

I/O module	Backplane	Function	MTL module
X-AI 32 01	CPHX-AI320101	32ch AI	MTL4544
X-AI 32 01 + repeat	CPHX-AI-RM320102	16ch AI	MTL4541
	CPHX-AI-RS320103	16ch AI	MTL4544D
X-AI 32 01	HMU-HX-AI320104	32ch AI	MTL4850
X-DI 32 01	CPHX-DI-M320102	16ch DI	MTL4511 / MTL4514
	CPHX-DI-S320103	16ch DI	
X-DI 32 01	CPHX-2DI320101	32ch DI	MTL4516 / MTL4517
X-DI 32 01	CPHX-SDI-M320104	16ch DI	MTL4501-SR
	CPHX-SDI-S320105	16ch DI	
X-DO 32 01	CPHX-DO-M320101	16ch DO	MTL4521
	CPHX-DO-S320102	16ch DO	
X-AO-16 01	CPHX-AO160101	16ch AO	MTL4546Y / MTL4549Y

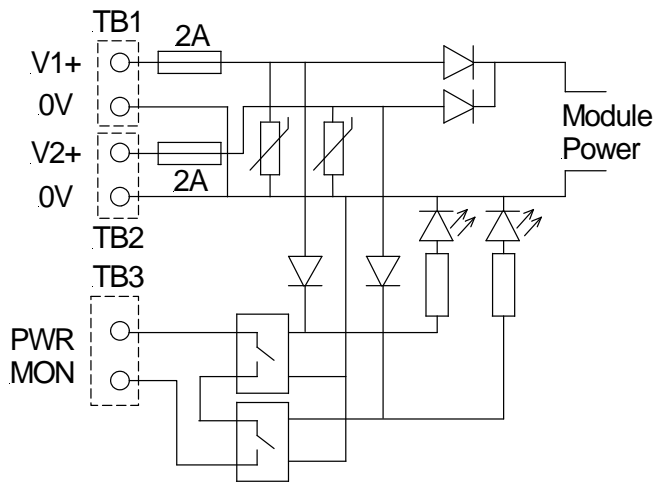
### General Specifications

Power Supply	20-35Vdc, (dual power feeds) volt free status monitor contacts. Isolation between module power, system signals and field signals.
Fusing	2.0A / 2.5A TE5 replaceable fuses (2.5A only used on CPHX-AI320101) Replacement part number FUS2.0ATE5 / FUS2.5ATE5 (pack of 10) NB, isolators internally fused at <250mA. Not user serviceable.
Mounting (IS FTAs)	Surface mounting, SMS01 kit Dual DIN rail mounting, DMK01 kit (40 clips) Single DIN rail mounting kits DMK-16W
Circuit Board	2mm FR4 laminate, colour Black
HART Interface	20 way DIN41651 0.05in flat cables Bump polarised, with clips. Maximum recommended cable length to HART mux. 6m
Interconnecting Backplane cables	34 way DIN41651 0.05in flat cables Bump polarised, with clips, length 20cm (Max length allowed 1m)

**Dimensions**



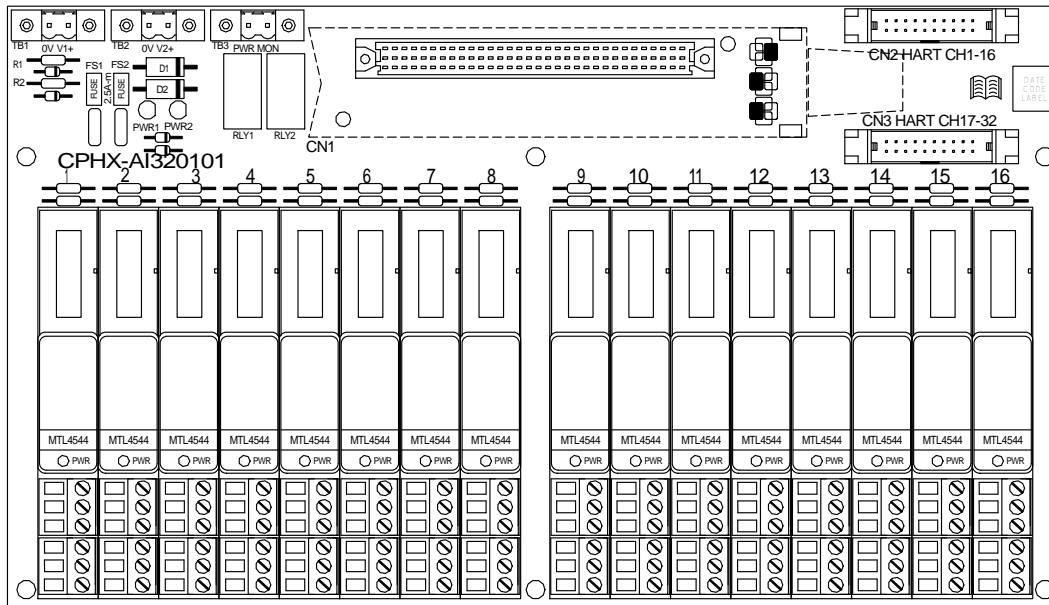
**Power Supply Schematic**



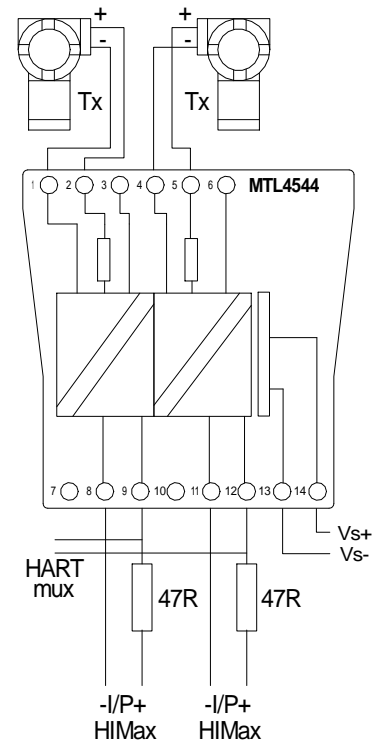
**Fuse:** 2A TE5 replaceable, in each power feed  
Spares order FUS2.0ATE5, pack of 10

## CPHX-AI320101 dual channel analogue input

MTL4544 - 4-20mA 2/4 wire transmitter inputs. A 47Ω resistor is added in series with each output for HART compatibility.



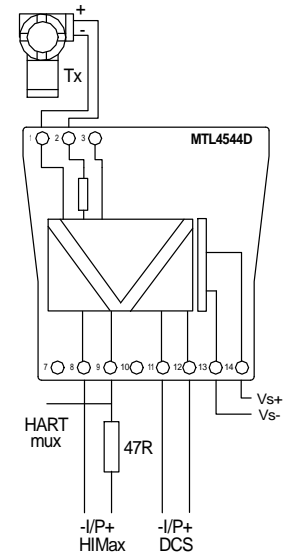
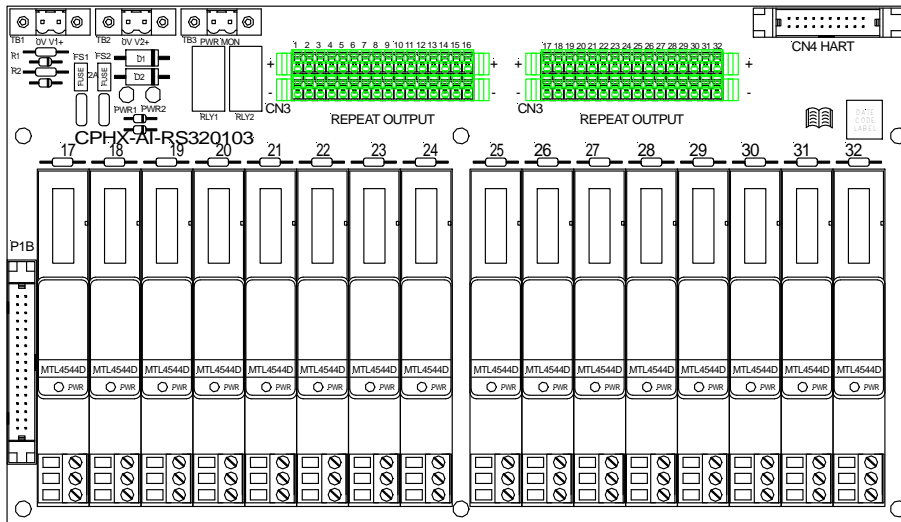
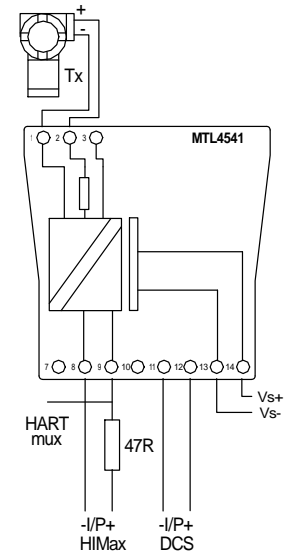
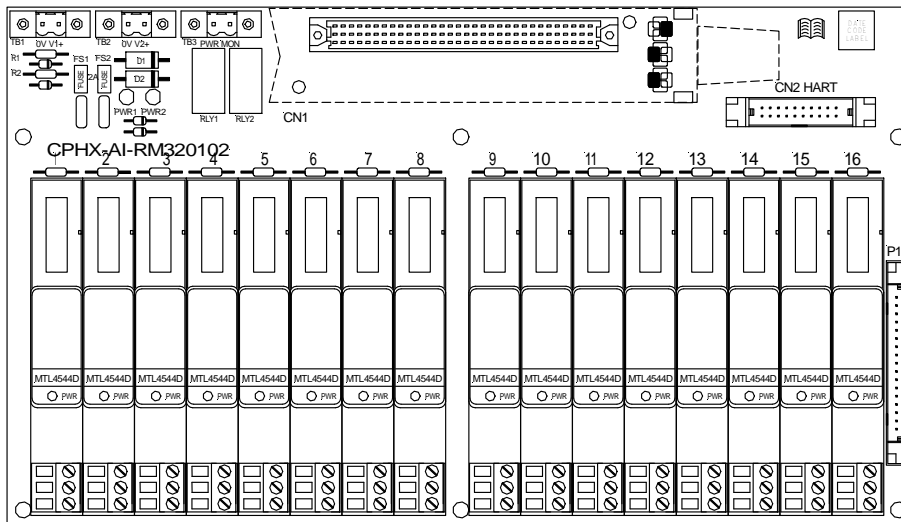
MTL Pos/ Pin	Ident	CN1	CN2 HART	MTL Pos/ Pin	Ident	CN1	CN3 HART
1/9	Ch1+	b1	1	9/9	Ch17+	b17	1
1/8	0V	a1-a28	17-20	9/8	0V	a1-a28	17-20
1/12	Ch2+	b2	2	9/12	Ch18+	b18	2
1/11	0V	a1-a28	17-20	9/11	0V	a1-a28	17-20
2/9	Ch3+	b3	3	10/9	Ch19+	b19	3
2/8	0V	a1-a28	17-20	10/8	0V	a1-a28	17-20
2/12	Ch4+	b4	4	10/12	Ch20+	b20	4
2/11	0V	a1-a28	17-20	10/11	0V	a1-a28	17-20
3/9	Ch5+	b5	5	11/9	Ch21+	b21	5
3/8	0V	a1-a28	17-20	11/8	0V	a1-a28	17-20
3/12	Ch6+	b6	6	11/12	Ch22+	b22	6
3/11	0V	a1-a28	17-20	11/11	0V	a1-a28	17-20
4/9	Ch7+	b7	7	12/9	Ch23+	b23	7
4/8	0V	a1-a28	17-20	12/8	0V	a1-a28	17-20
4/12	Ch8+	b8	8	12/12	Ch24+	b24	8
4/11	0V	a1-a28	17-20	12/11	0V	a1-a28	17-20
5/9	Ch9+	b9	9	13/9	Ch25+	b25	9
5/8	0V	a1-a28	17-20	13/8	0V	a1-a28	17-20
5/12	Ch10+	b10	10	13/12	Ch26+	b26	10
5/11	0V	a1-a28	17-20	13/11	0V	a1-a28	17-20
6/9	Ch11+	b11	11	14/9	Ch27+	b27	11
6/8	0V	a1-a28	17-20	14/8	0V	a1-a28	17-20
6/12	Ch12+	b12	12	14/12	Ch28+	b28	12
6/11	0V	a1-a28	17-20	14/11	0V	a1-a28	17-20
7/9	Ch13+	b13	13	15/9	Ch29+	b29	13
7/8	0V	a1-a28	17-20	15/8	0V	a1-a28	17-20
7/12	Ch14+	b14	14	15/12	Ch30+	b30	14
7/11	0V	a1-a28	17-20	15/11	0V	a1-a28	17-20
8/9	Ch15+	b15	15	16/9	Ch31+	b31	15
8/8	0V	a1-a28	17-20	16/8	0V	a1-a28	17-20
8/12	Ch16+	b16	16	16/12	Ch32+	b32	16
8/11	0V	a1-a28	17-20	16/11	0V	a1-a28	17-20



## CPHX-AI-Rx32010x single channel analogue input with repeat

MTL4541 / MTL4544D

Two backplanes are used in a Master/Slave configuration with a linking cable to route the 16 channels from each backplane through to the H-Max system connector and the DCS repeat output. HART signals are taken off both backplanes as a group of 16 channels to the MTL HART multiplexor system. A 47Ω resistor is added in series with each output for HART compatibility.



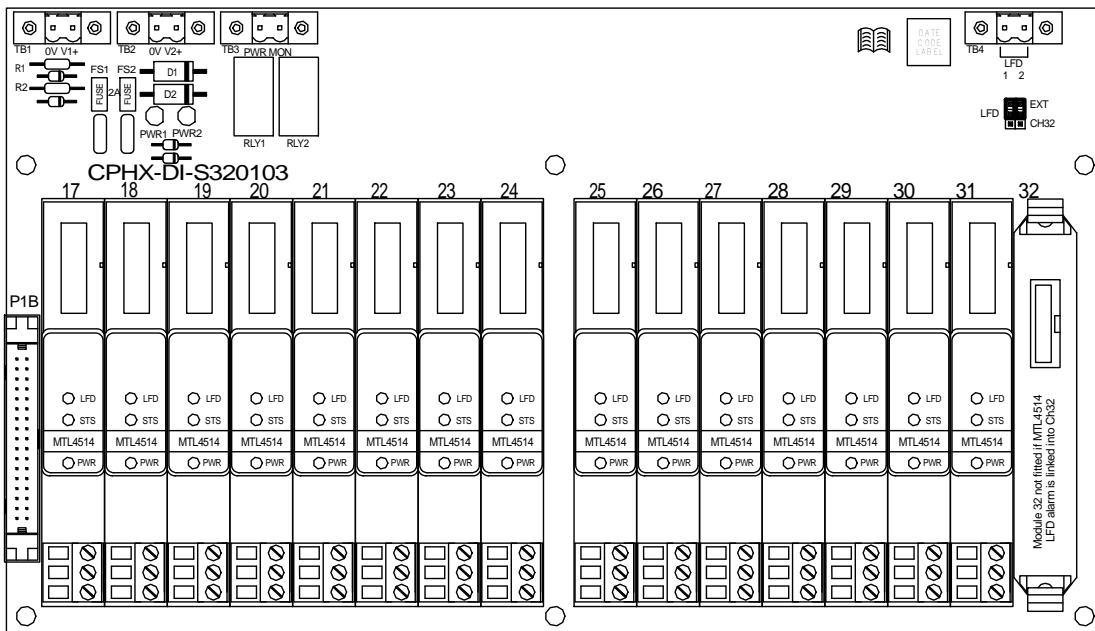
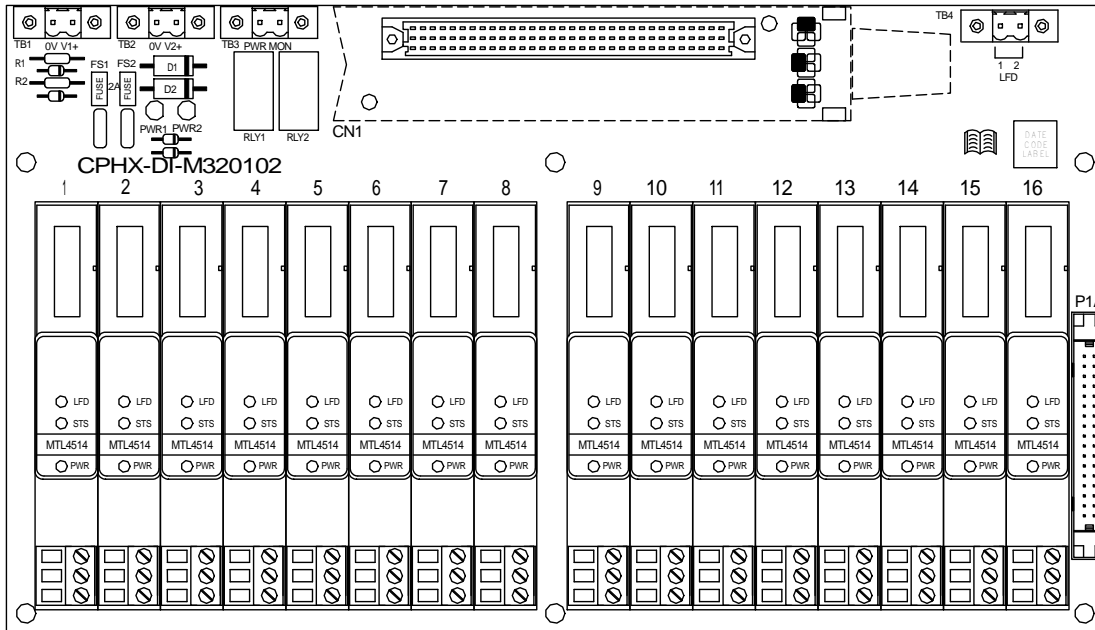
**CPHX-AI-R cont:**

MTL Pos/ Pin	Ident	CN1 (Ch+ 47Ω)	via	CN2 HART	P1	CN3	MTL Pos/ Pin	Ident	CN1 (Ch+ 47Ω)	via	CN4 HART	P1	CN3
1/9	Ch1a+	b1		1			17/9	Ch17a+	b17		1	17	
1/8	0VB	a1-a28		17-20	33		17/8	0VB	a1-a28		17-20	33	
1/12	Ch1b+				1	1+	17/12	Ch17b+					17+
1/11	0VC				34	1-	17/11	0VC				34	17-
2/9	Ch2a+	b2		2			18/9	Ch18a+	b18		2	18	
2/8	0VB	a1-a28		17-20	33		18/8	0VB	a1-a28		17-20	33	
2/12	Ch2b+				2	2+	18/12	Ch18b+					18+
2/11	0VC				34	2-	18/11	0VC				34	18-
3/9	Ch3a+	b3		3			19/9	Ch19a+	b19		3	19	
3/8	0VB	a1-a28		17-20	33		19/8	0VB	a1-a28		17-20	33	
3/12	Ch3b+				3	3+	19/12	Ch19b+					19+
3/11	0VC				34	3-	19/11	0VC				34	19-
4/9	Ch4a+	b4		4			20/9	Ch20a+	b20		4	20	
4/8	0VB	a1-a28		17-20	33		20/8	0VB	a1-a28		17-20	33	
4/12	Ch4b+				4	4+	20/12	Ch20b+					20+
4/11	0VC				34	4-	20/11	0VC				34	20-
5/9	Ch5a+	b5		5			21/9	Ch21a+	b21		5	21	
5/8	0VB	a1-a28		17-20	33		21/8	0VB	a1-a28		17-20	33	
5/12	Ch5b+				5	5+	21/12	Ch21b+					21+
5/11	0VC				34	5-	21/11	0VC				34	21-
6/9	Ch6a+	b6		6			22/9	Ch22a+	b22		6	22	
6/8	0VB	a1-a28		17-20	33		22/8	0VB	a1-a28		17-20	33	
6/12	Ch6b+				6	6+	22/12	Ch22b+					22+
6/11	0VC				34	6-	22/11	0VC				34	22-
7/9	Ch7a+	b7		7			23/9	Ch23a+	b23		7	23	
7/8	0VB	a1-a28		17-20	33		23/8	0VB	a1-a28		17-20	33	
7/12	Ch7b+				7	7+	23/12	Ch23b+					23+
7/11	0VC				34	7-	23/11	0VC				34	23-
8/9	Ch8a+	b8		8			24/9	Ch24a+	b24		8	24	
8/8	0VB	a1-a28		17-20	33		24/8	0VB	a1-a28		17-20	33	
8/12	Ch8b+				8	8+	24/12	Ch24b+					24+
8/11	0VC				34	8-	24/11	0VC				34	24-
9/9	Ch9a+	b9		9			25/9	Ch25a+	b25		9	25	
9/8	0VB	a1-a28		17-20	33		25/8	0VB	a1-a28		17-20	33	
9/12	Ch9b+				9	9+	25/12	Ch25b+					25+
9/11	0VC				34	9-	25/11	0VC				34	25-
10/9	Ch10a+	b10		10			26/9	Ch26a+	b26		10	26	
10/8	0VB	a1-a28		17-20	33		26/8	0VB	a1-a28		17-20	33	
10/12	Ch10b+				10	10+	26/12	Ch26b+					26+
10/11	0VC				34	10-	26/11	0VC				34	26-
11/9	Ch11a+	b11		11			27/9	Ch27a+	b27		11	27	
11/8	0VB	a1-a28		17-20	33		27/8	0VB	a1-a28		17-20	33	
11/12	Ch11b+				11	11+	27/12	Ch27b+					27+
11/11	0VC				34	11-	27/11	0VC				34	27-
12/9	Ch12a+	b12		12			28/9	Ch28a+	b28		12	28	
12/8	0VB	a1-a28		17-20	33		28/8	0VB	a1-a28		17-20	33	
12/12	Ch12b+				12	12+	28/12	Ch28b+					28+
12/11	0VC				34	12-	28/11	0VC				34	28-
13/9	Ch13a+	b13		13			29/9	Ch29a+	b29		13	29	
13/8	0VB	a1-a28		17-20	33		29/8	0VB	a1-a28		17-20	33	
13/12	Ch13b+				13	13+	29/12	Ch29b+					29+
13/11	0VC				34	13-	29/11	0VC				34	29-
14/9	Ch14a+	b14		14			30/9	Ch30a+	b30		14	30	
14/8	0VB	a1-a28		17-20	33		30/8	0VB	a1-a28		17-20	33	
14/12	Ch14b+				14	14+	30/12	Ch30b+					30+
14/11	0VC				34	14-	30/11	0VC				34	30-
15/9	Ch15a+	b15		15			31/9	Ch31a+	b31		15	31	
15/8	0VB	a1-a28		17-20	33		31/8	0VB	a1-a28		17-20	33	
15/12	Ch15b+				15	15+	31/12	Ch31b+					31+
15/11	0VC				34	15-	31/11	0VC				34	31-
16/9	Ch16a+	b16		16			32/9	Ch32a+	b32		16	32	
16/8	0VB	a1-a28		17-20	33		32/8	0VB	a1-a28		17-20	33	
16/12	Ch16b+				16	16+	32/12	Ch32b+					32+
16/11	0VC				34	16-	32/11	0VC			17-20	34	32-

## CPHX-DI-x32010x digital input

### MTL4511 / MTL4514

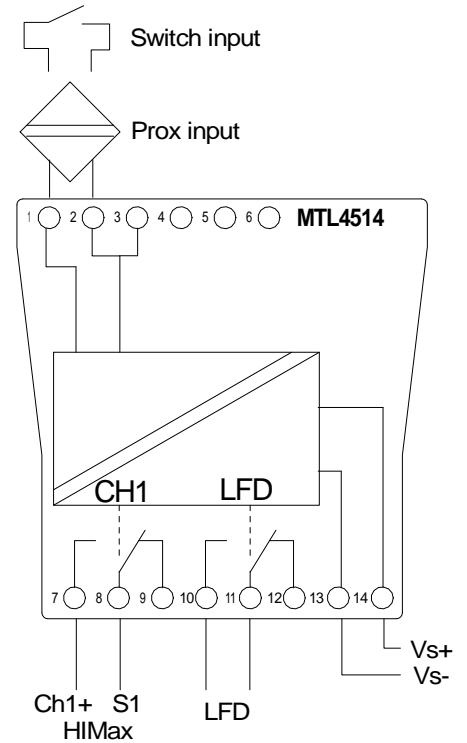
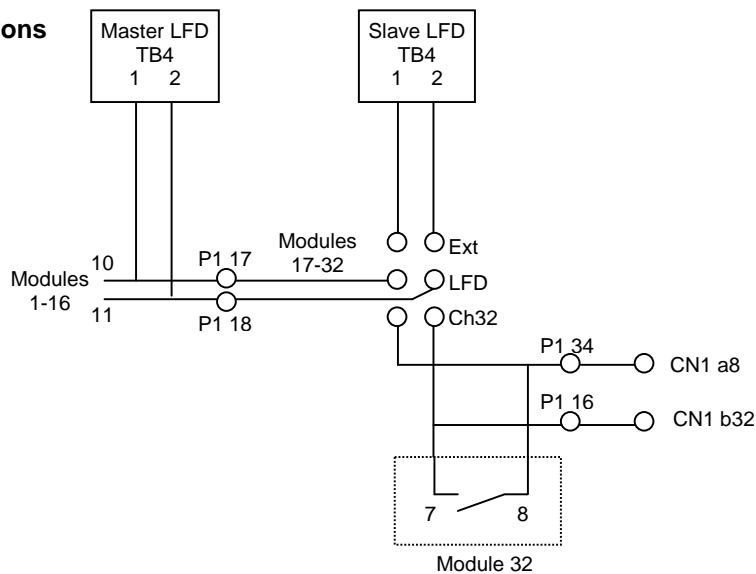
Used for SIL2 safety applications. Two backplanes are connected in a Master/Slave configuration with the 16 channels from the slave backplane being routed through to the master backplane. When the MTL4514 is used the LFD alarm signal can be routed into Ch32 on the -S or to an external input. When using Ch32 an isolator must not be fitted in position 32

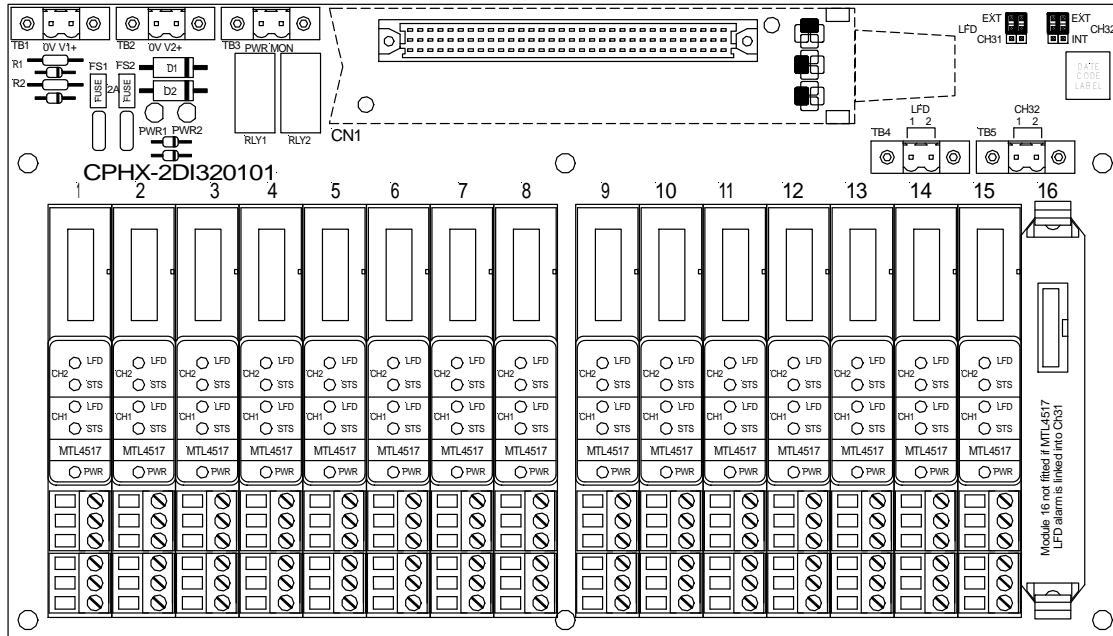




**CPHX-DI cont.**

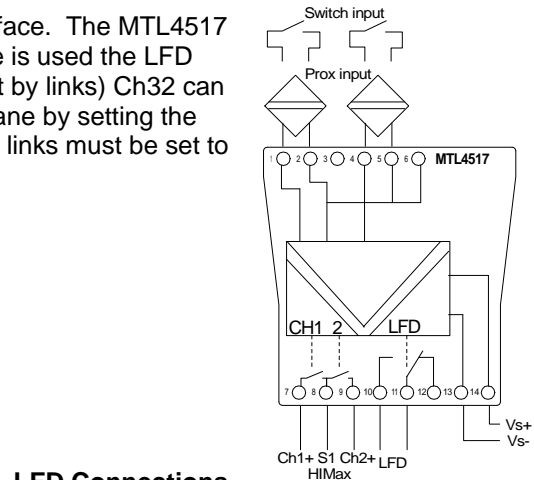
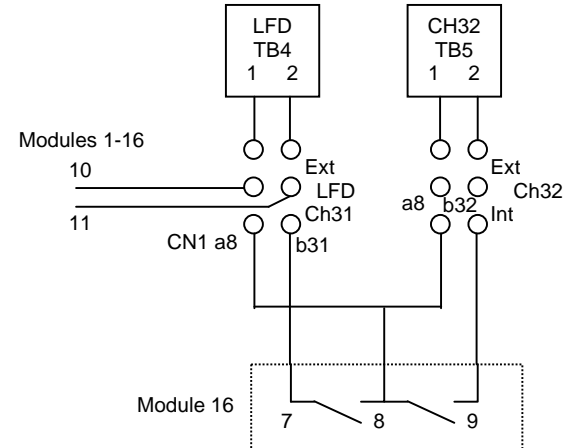
MTL Pos/ Pin	Ident INPUTS	CN1	MTL Pos/ Pin	Ident INPUTS	P1	CN1
1/7	CH1+	b1	17/7	CH17+	1	b17
1/8	S1	a1	17/8	S5	31	a5
2/7	CH2+	b2	18/7	CH18+	2	b18
2/8	S1	a1	18/8	S5	31	a5
3/7	CH3+	b3	19/7	CH19+	3	b19
3/8	S1	a1	19/8	S5	31	a5
4/7	CH4+	b4	20/7	CH20+	4	b20
4/8	S1	a1	20/8	S5	31	a5
5/7	CH5+	b5	21/7	CH21+	5	b21
5/8	S2	a2	21/8	S6	32	a6
6/7	CH6+	b6	22/7	CH22+	6	b22
6/8	S2	a2	22/8	S6	32	a6
7/7	CH7+	b7	23/7	CH23+	7	b23
7/8	S2	a2	23/8	S6	32	a6
8/7	CH8+	b8	24/7	CH24+	8	b24
8/8	S2	a2	24/8	S6	32	a6
9/7	CH9+	b9	25/7	CH25+	9	b25
9/8	S3	a3	25/8	S7	33	a7
10/7	CH10+	b10	26/7	CH26+	10	b26
10/8	S3	a3	26/8	S7	33	a7
11/7	CH11+	b11	27/7	CH27+	11	b27
11/8	S3	a3	27/8	S7	33	a7
12/7	CH12+	b12	28/7	CH28+	12	b28
12/8	S3	a3	28/8	S7	33	a7
13/7	CH13+	b13	29/7	CH29+	13	b29
13/8	S4	a4	29/8	S8	34	a8
14/7	CH14+	b14	30/7	CH30+	14	b30
14/8	S4	a4	30/8	S8	34	a8
15/7	CH15+	b15	31/7	CH31+	15	b31
15/8	S4	a4	31/8	S8	34	a8
16/7	CH16+	b16	32/7	CH32+	16	b32
16/8	S4	a4	32/8	S8	34	a8
				0V	19-30	a9-a16
All 10	LFD		All 10	LFD	17	a8 if linked
All 11	LFD		All 11	LFD	18	b32 if linked


**LFD connections**


**CPHX-2DI320101 dual channel digital input**
**MTL4516 / MTL4517 with LFD**


The MTL4516 or MTL4517 may be used with this interface. The MTL4517 offers a separate LFD alarm output. When this module is used the LFD alarm is routed into CH31 or to EXTERNAL terminals (set by links) Ch32 can be used for the LFD alarm from another similar backplane by setting the links to EXT. When a module is fitted in position 16 the links must be set to LFD EXT and Ch32 INT

MTL Pos/ Pin	Ident INPUTS	CN1	MTL Pos/ Pin	Ident INPUTS	CN1
1/7	CH1+	b1	9/7	CH17+	b17
1/8	S1	a1	9/8	S5	a5
1/9	CH2+	b2	9/9	CH18+	b18
2/7	CH3+	b3	10/7	CH19+	b19
2/8	S1	a1	10/8	S5	a5
2/9	CH4+	b4	10/9	CH20+	b20
3/7	CH5+	b5	11/7	CH21+	b21
3/8	S2	a2	11/8	S6	a6
3/9	CH6+	b6	11/9	CH22+	b22
4/7	CH7+	b7	12/7	CH23+	b23
4/8	S2	a2	12/8	S6	a6
4/9	CH8+	b4	12/9	CH24+	b24
5/7	CH9+	b5	13/7	CH25+	b25
5/8	S3	a3	13/8	S7	a7
5/9	CH10+	b6	13/9	CH26+	b26
6/7	CH11+	b7	14/7	CH27+	b27
6/8	S3	a3	14/8	S7	a7
6/9	CH12+	b8	14/9	CH28+	b28
7/7	CH13+	b9	15/7	CH29+	b29
7/8	S4	a4	15/8	S8	a8
7/9	CH14+	b10	15/9	CH30+	b30
8/7	CH15+	b11	16/7	CH31+	b31
8/8	S4	a4	16/8	S8	a8
8/9	CH16+	b12	16/9	CH32+	b32
			0V		a9-16

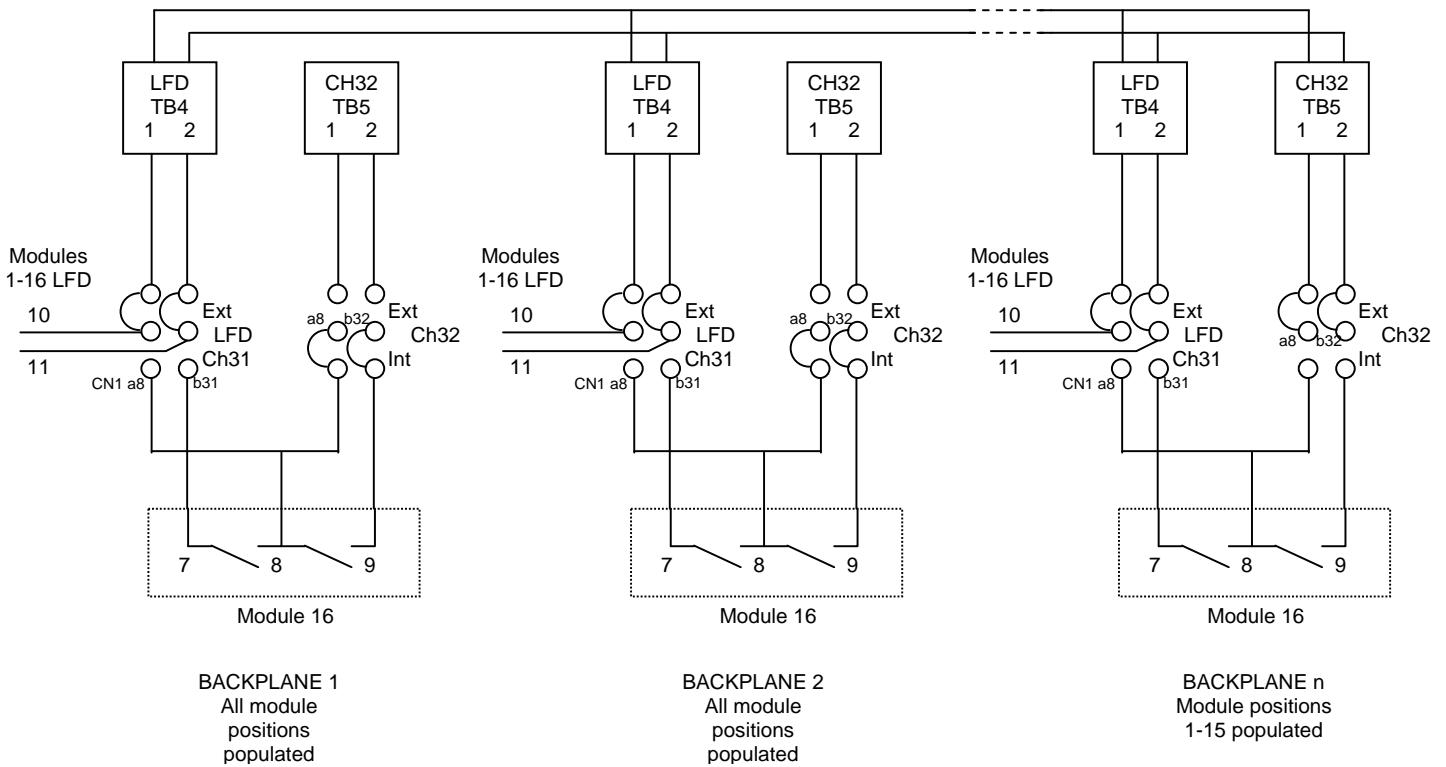

**LFD Connections**


### LFD alarm options with multiple backplanes

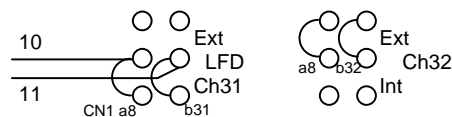
The TB4/TB5 terminals allow the alarm groups on each backplane to be taken to one backplane to create one large group. This allows isolator modules to be fitted in all but one position, thus providing the maximum number of available channels for field signals.

LFD link group is used either to route the LFD alarms back into Ch31 or to an external input via TB4. CH32 link group is used to route a field input into Ch32 or an external input into Ch32.

With multiple backplanes, where one large LFD alarm group is required, the TB4 will be used to take the alarm signals off the backplane and TB5 used to bring these alarms back into Ch32 on one backplane. Alarm outputs from CPHX-DI slave backplanes may also be connected in this group.



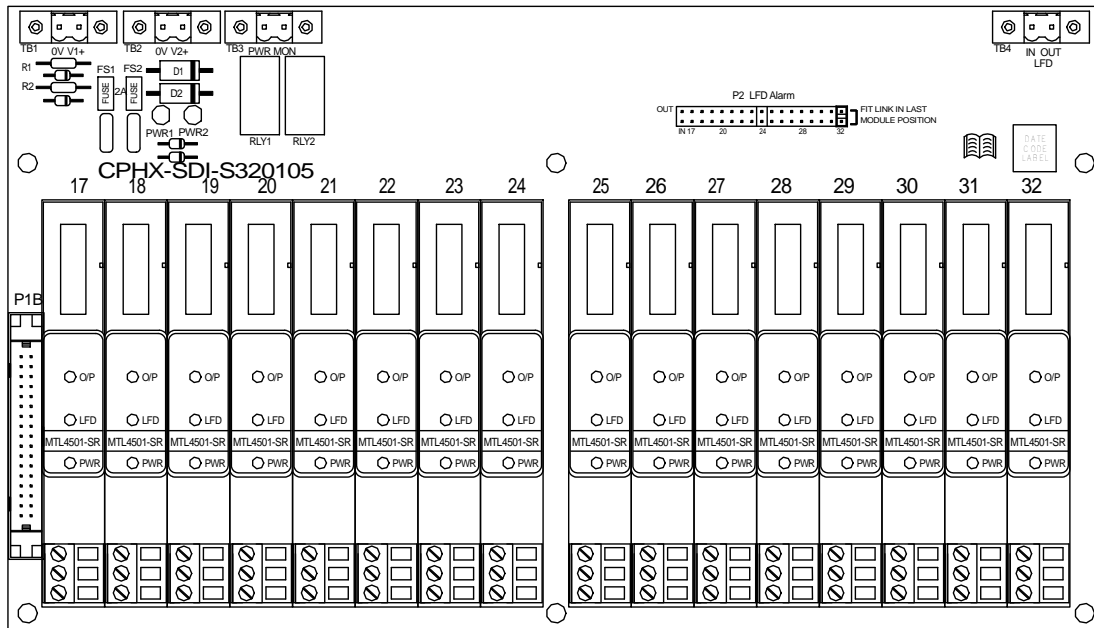
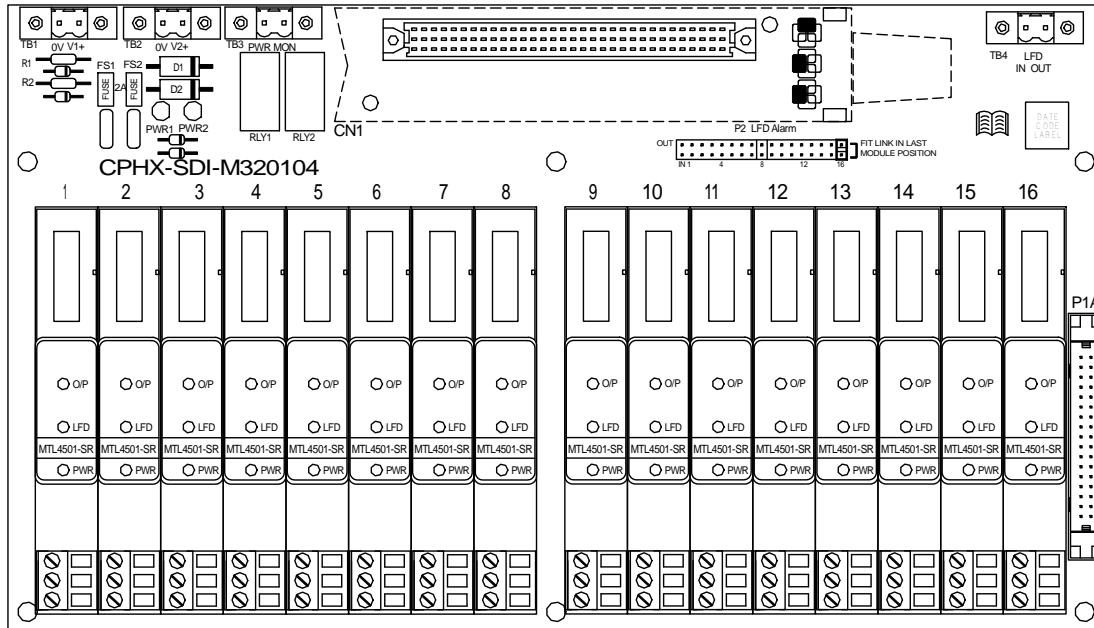
Where only one backplane is used with grouped LFD alarm, then LFD links are set to CH31. Ch32 can also be used for another input, if required, via TB5. A module cannot be fitted in position 16.



## CPHX-SDI-x32010x safety digital input

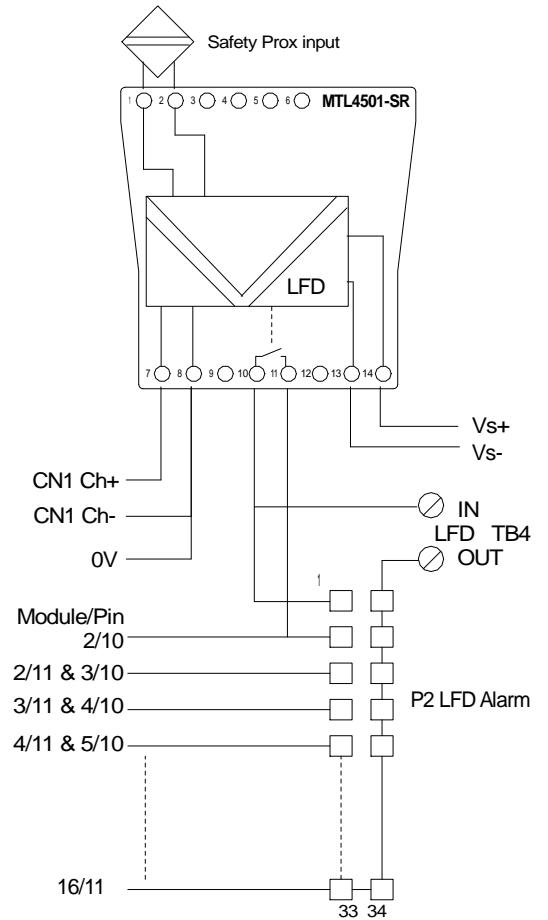
### MTL4501-SR

Used for safety critical applications where failsafe functionality is required. Two backplanes are connected in a Master/Slave configuration with the 16 channels from the slave backplane being routed through to the master backplane. The LFD alarm on the MTL4501-SR is opens in the alarm state. The alarms for all modules are connected in series to provide a common alarm via TB4. If the backplane is not fully populated then the P2 jumper link must be set to the last module position number to bypass unused positions. When an alarm occurs, the contacts will open.



**CPHX-SDI Cont.**

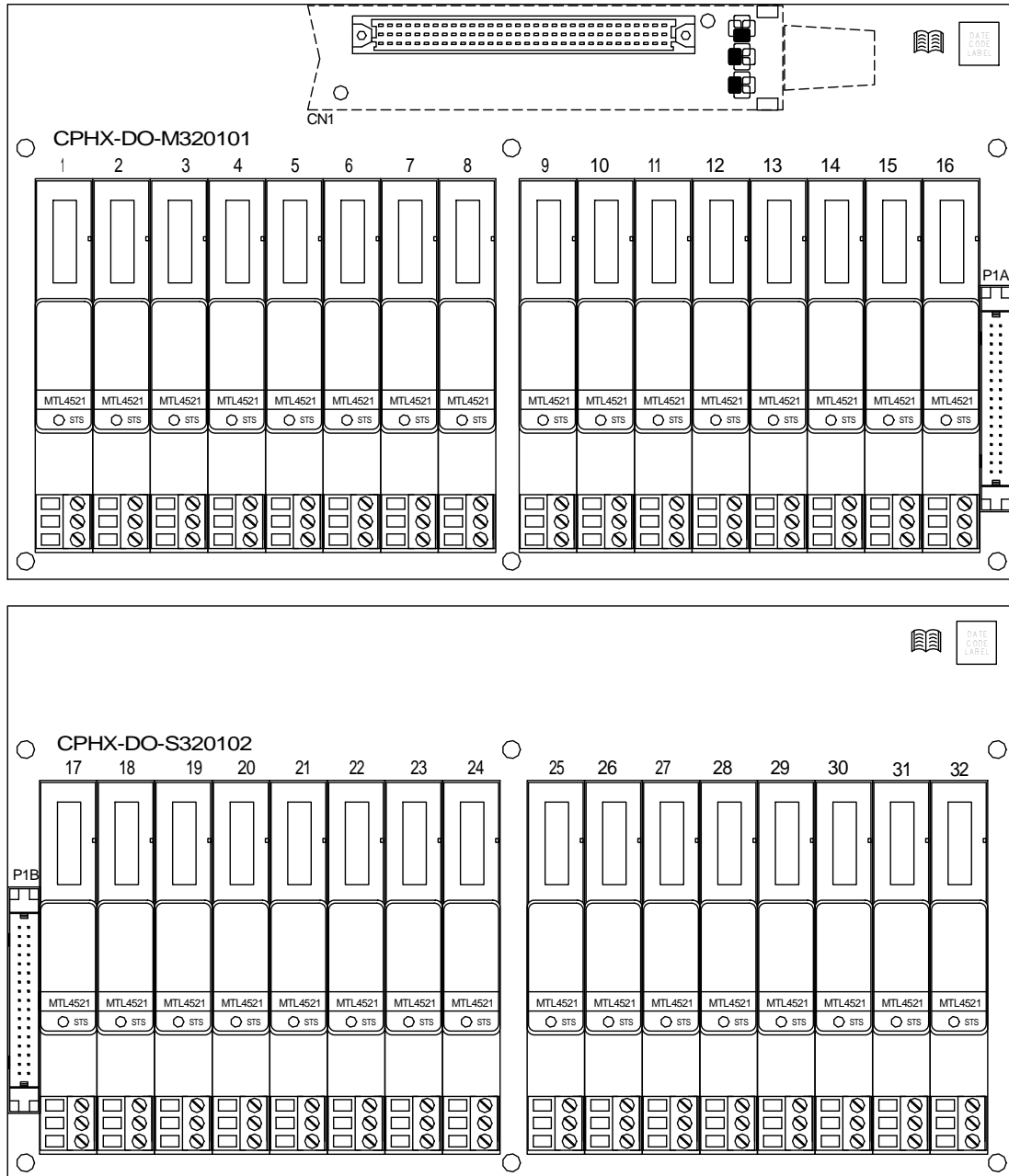
MTL Pos/ Pin	Ident INPUTS	CN1	MTL Pos/ Pin	Ident INPUTS	P1	CN1
1/7	CH1+	b1	17/7	CH17+	1	b17
1/8	0V	a9-16	17/8	0V	27-34	a9-16
2/7	CH2+	b2	18/7	CH18+	2	b18
2/8	0V	a9-16	18/8	0V	27-34	a9-16
3/7	CH3+	b3	19/7	CH19+	3	b19
3/8	0V	a9-16	19/8	0V	27-34	a9-16
4/7	CH4+	b4	20/7	CH20+	4	b20
4/8	0V	a9-16	20/8	0V	27-34	a9-16
5/7	CH5+	b5	21/7	CH21+	5	b21
5/8	0V	a9-16	21/8	0V	27-34	a9-16
6/7	CH6+	b6	22/7	CH22+	6	b22
6/8	0V	a9-16	22/8	0V	27-34	a9-16
7/7	CH7+	b7	23/7	CH23+	7	b23
7/8	0V	a9-16	23/8	0V	27-34	a9-16
8/7	CH8+	b8	24/7	CH24+	8	b24
8/8	0V	a9-16	24/8	0V	27-34	a9-16
9/7	CH9+	b9	25/7	CH25+	9	b25
9/8	0V	a9-16	25/8	0V	27-34	a9-16
10/7	CH10+	b10	26/7	CH26+	10	b26
10/8	0V	a9-16	26/8	0V	27-34	a9-16
11/7	CH11+	b11	27/7	CH27+	11	b27
11/8	0V	a9-16	27/8	0V	27-34	a9-16
12/7	CH12+	b12	28/7	CH28+	12	b28
12/8	0V	a9-16	28/8	0V	27-34	a9-16
13/7	CH13+	b13	29/7	CH29+	13	b29
13/8	0V	a9-16	29/8	0V	27-34	a9-16
14/7	CH14+	b14	30/7	CH30+	14	b30
14/8	0V	a9-16	30/8	0V	27-34	a9-16
15/7	CH15+	b15	31/7	CH31+	15	b31
15/8	0V	a9-16	31/8	0V	27-34	a9-16
16/7	CH16+	b16	32/7	CH32+	16	b32
16/8	0V	a9-16	32/8	0V	27-34	a9-16



## CPHX-DO-x32010x digital output

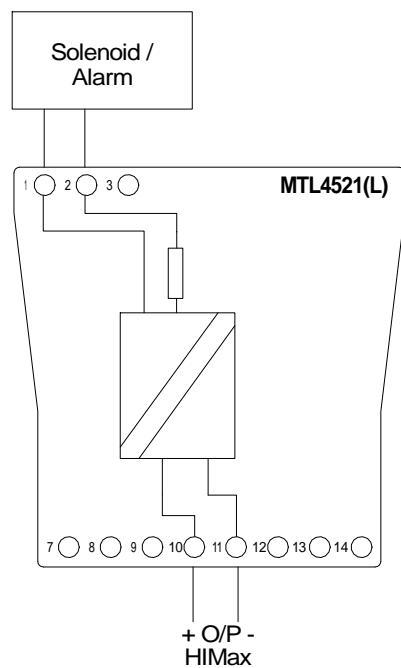
### MTL4521 /MTL4521L

Used for safety critical applications where failsafe functionality is required. Two 16 module backplanes provide mounting for loop powered isolators which are driven directly from the HIMax for SIL3 failsafe applications.



**CPHX-DO cont.**

MTL Pos/Pin	Ident INPUTS	CN1	MTL Pos/Pin	Ident INPUTS	P1	CN1
1/10	CH1+	c1	17/10	CH17+	1	c17
1/11	CH1-	b1	17/11	CH17-	2	b17
2/10	CH2+	c2	18/10	CH18+	3	c18
2/11	CH2-	b2	18/11	CH18-	4	b18
3/10	CH3+	c3	19/10	CH19+	5	c19
3/11	CH3-	b3	19/11	CH19-	6	b19
4/10	CH4+	c4	20/10	CH20+	7	c20
4/11	CH4-	b4	20/11	CH20-	8	b20
5/10	CH5+	c5	21/10	CH21+	9	c21
5/11	CH5-	b5	21/11	CH21-	10	b21
6/10	CH6+	c6	22/10	CH22+	11	c22
6/11	CH6-	b6	22/11	CH22-	12	b22
7/10	CH7+	c7	23/10	CH23+	13	c23
7/11	CH7-	b7	23/11	CH23-	14	b23
8/10	CH8+	c8	24/10	CH24+	15	c24
8/11	CH8-	b8	24/11	CH24-	16	b24
9/10	CH9+	c9	25/10	CH25+	17	c25
9/11	CH9-	b9	25/11	CH25-	18	b25
10/10	CH10+	c10	26/10	CH26+	19	c26
10/11	CH10-	b10	26/11	CH26-	20	b26
11/10	CH11+	c11	27/10	CH27+	21	c27
11/11	CH11-	b11	27/11	CH27-	22	b27
12/10	CH12+	c12	28/10	CH28+	23	c28
12/11	CH12-	b12	28/11	CH28-	24	b28
13/10	CH13+	c13	29/10	CH29+	25	c29
13/11	CH13-	b13	29/11	CH29-	26	b29
14/10	CH14+	c14	30/10	CH30+	27	c30
14/11	CH14-	b14	30/11	CH30-	28	b30
15/10	CH15+	c15	31/10	CH31+	29	c31
15/11	CH15-	b15	31/11	CH31-	30	b31
16/10	CH16+	c16	32/10	CH32+	31	c32
16/11	CH16-	b16	32/11	CH32-	32	b32


**Safety Description**

MTL4521

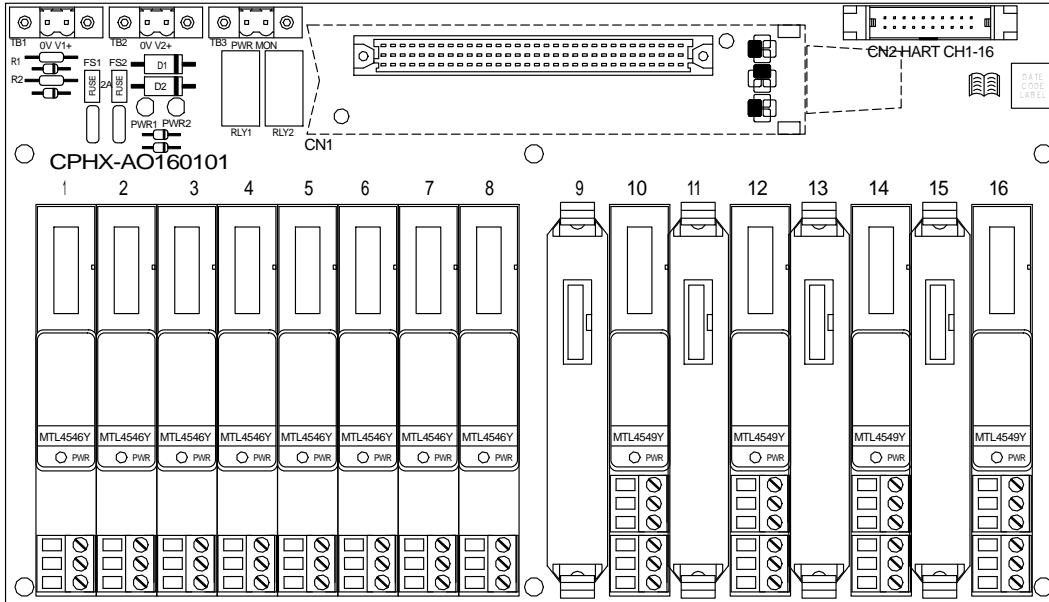
 $U_o$  25V,  $I_o$  147mA,  $P_o$  0.92W

MTL4521L

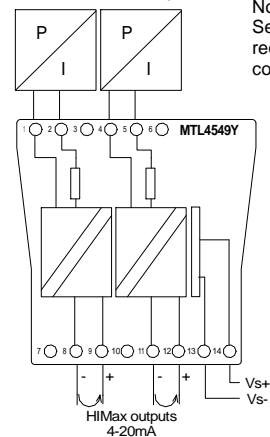
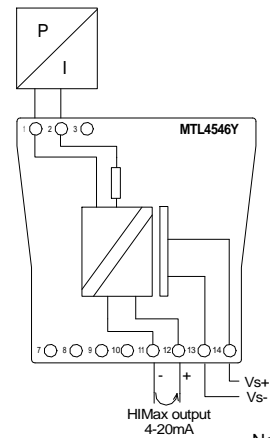
 $U_o$  25V,  $I_o$  108mA,  $P_o$  0.68W

### CPHX-AO160101 16ch analogue output with HART interface

The MTL4546Y or MTL4549Y may be fitted on this backplane to provide an intrinsic safety interface for analogue output signals. The HART interface is provided for connection to the MTL4850 HART multiplexer. If dual channel MTL4549Y modules are fitted, they must be fitted in even numbered module positions.



MTL Pos/Pin	MTL Pos/Pin	Ident	CN1	CN2 HART
1/12	2/9	Ch1+	c1	1
1/11	2/8	0V	b1-b16	17-20
2/12		Ch2+	c2	2
2/11		0V	b1-b16	17-20
3/12	4/9	Ch3+	c3	3
3/11	4/8	0V	b1-b16	17-20
4/12		Ch4+	c4	4
4/11		0V	b1-b16	17-20
5/12	6/9	Ch5+	c5	5
5/11	6/8	0V	b1-b16	17-20
6/12		Ch6+	c6	6
6/11		0V	b1-b16	17-20
7/12	8/9	Ch7+	c7	7
7/11	8/8	0V	b1-b16	17-20
8/12		Ch8+	c8	8
8/11		0V	b1-b16	17-20
9/12	10/9	Ch9+	c9	9
9/11	10/8	0V	b1-b16	17-20
10/12		Ch10+	c10	10
10/11		0V	b1-b16	17-20
11/12	12/9	Ch11+	c11	11
11/11	12/8	0V	b1-b16	17-20
12/12		Ch12+	c12	12
12/11		0V	b1-b16	17-20
13/12	14/9	Ch13+	c13	13
13/11	14/8	0V	b1-b16	17-20
14/12		Ch14+	c14	14
14/11		0V	b1-b16	17-20
15/12	16/9	Ch15+	c15	15
15/11	16/8	0V	b1-b16	17-20
16/12		Ch16+	c16	16
16/11		0V	b1-b16	17-20



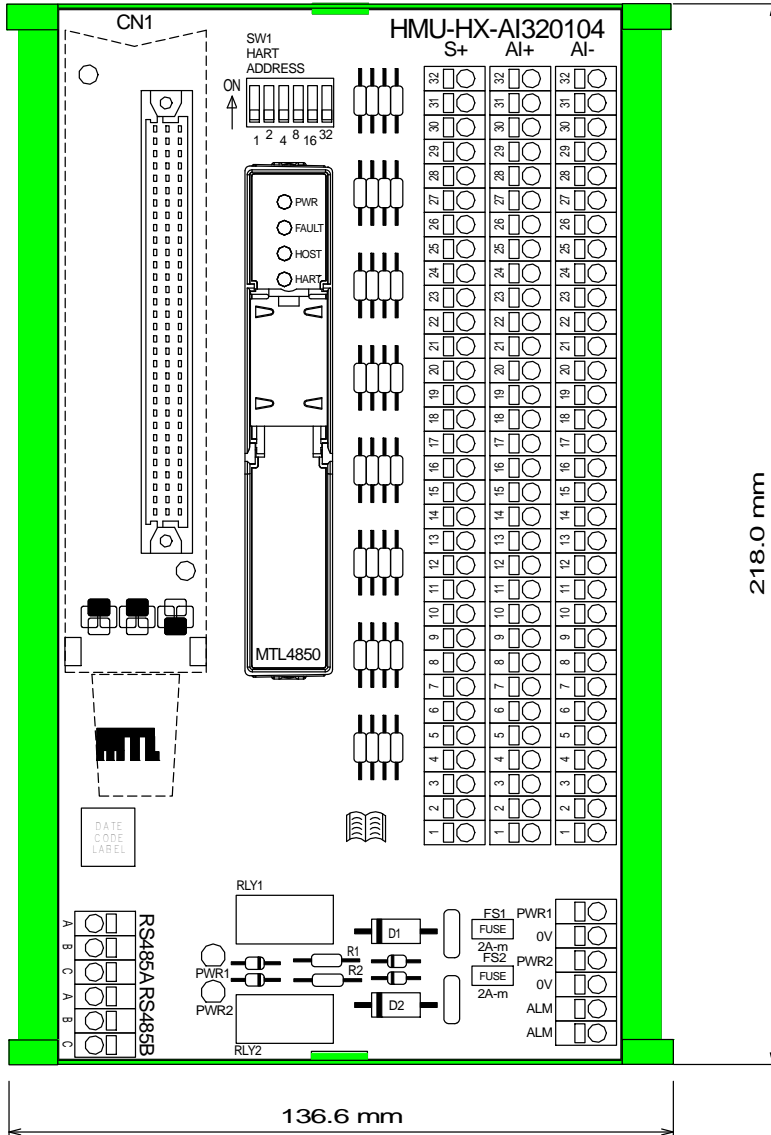
Note:  
Series resistor not  
required with HART  
compatible HIMax AO



**HMU-HX-AI320104**

**Analogue Input HART multiplexor unit**

**MTL4850**



This interface integrates the MTL4850 32ch HART multiplexor with the HIMax analogue input card.

For HART compatibility a 47Ω resistor is added in series with the system input to raise the impedance to the required level for HART.

24V dc power for the MTL4850 is supplied via separate power terminals on the carrier. Parallel RS485 connections are also provided to allow linking from one FTA to the next.

