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Hardware Manual





FTA-E-01Fail-safe digital input FTA
(24/48/60 Vdc, 24 channels)DescriptionThe field termination assembly module FTA-E-01 is the interface
between the system interconnection cables (SIC) and the external
field wiring (on E-56 ELCO).Twenty-four channels (separated into three groups of eight channels
with a 250 mA fuse in the common +) can be connected to the
FTA-E-01 module via system interconnection cables (SIC). These
cables are plugged into the SIC connectors on the FTA module. The

cables are plugged into the SIC connectors on the FTA module. The three SIC connectors are marked '1A', '1B' and '2A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails.



Figure 1 Mechanical layout



The polarizing notches of the ELCO socket can be set to any of six positions per side (factory-set at position 4). Changing the polarization requires removal of the FTA from the DIN EN rail and the use of a polarizing tool, make ELCO (part no. 06 1989 02). The ELCO socket has guide pins and socket gills to ensure correct alignment when mating.

Applications	For details on applications and connection options for the FTA-E-01
	module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-E-01 module is as follows:

	CONNECTIONS DIAGRAM FTA-E-01							
SIC connector							Field termina	ls
Connector	Pin number	Signals					Signals	Elco pin number
1.0	<u>۸</u> 5	CH1 -					- IN 1+ (via fuse F1)	A
1A	B5	CH2 -				•	-IN 2+ (via fuse F1)	C
1A	A4	СН3 -					-IN 2-	D
1A	B4	CH4 -				•	- IN 3+ (via fuse F1)	E
1A	A3 B3	CH5 - CH6 -]	•	- IN 3- - IN 4+ (via fuse F1)	н
1A	A2	CH7 -					-IN 4-	J
1A	B2	nc				•	-IN 5+ (via fuse F1)	К
1A	A1 P1	CH8 -		1			-IN 5-	L
IA	Ы	+24 Vuc-	0.25 AT	ΠL			- IN 6+ (Via luse F I) - IN 6-	N
						•	-IN 7+ (via fuse F1)	Р
							- IN 7-	R
							- IN 8+ (via fuse F1)	S T
							-IN 9+ (via fuse F2)	Ŭ
							- IN 9-	V
		0110	1			•	- IN 10+ (via fuse F2)	W
1B 1B	A5 B5	CH9 - CH10 -					Shield	Y
1B	A4	CH11 -					nc	Z
1B	B4	CH12 -				•	-IN 11+ (via fuse F2)	а
1B	A3	CH13 -]		- IN 11-	b
1B	A2	CH14 - CH15 -				ļ	- IN 12+ (via luse F2)	d
1B	B2	nc				•	- IN 13+ (via fuse F2)	е
1B	A1	CH16 -		111			- IN 13-	f
18	B1	+24 Vdc-	0 25 AT	ΠL		•	- IN 14+ (via fuse F2) - IN 14-	n i
			0.20711			•	- IN 15+ (via fuse F2)	, k
							- IN 15-	I
							- IN 16+ (via fuse F2)	m
							- IN 17+ (via fuse F3)	n p
							-IN 17-	r
						+	- IN 18+ (via fuse F3)	S
						•	- IN 18- - IN 19+ (via fuse F3)	t u
2A	A5	CH17 -		J r			-IN 19-	v
2A	B5	CH18 -				•	- IN 20+ (via fuse F3)	w
2A	A4	CH19 -					- IN 20-	X
2A 2A	A3	CH21 -					-IN 21-	y Z
2A	B3	CH22 -				♦	- IN 22+ (via fuse F3)	AA
2A	A2	CH23 -					- IN 22-	BB
2A 2A	82 A1	nc CH24 -		, L			- IIN 23+ (VIA TUSE F3) - IN 23-	
2A	B1	+24 Vdc -		-		↓	- IN 24+ (via fuse F3)	EE
			0.25 AT				-IN 24-	FF
							nc	HH
							nc	KK
							nc	LL
							nc	MM
nc - not c	onnocto	d					nc	NN

Figure 2 Connections diagram



Technical data	The FTA-E-01 module has the following specifications:		
General	Type number:	FTA-E-01	
	Approvals:	CE, UL	
Power	Number of channels:	24 (3 groups of 8)	
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)	
		125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
Physical	Module dimensions:	125 x 70 x 65 mm (L x W x H) 4.92 x 2.76 x 2.56 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	126 mm (4.96 in)	
Fuses	Rating:	250 mAT (slow-acting)	
	Dimensions:	5 x 20 mm (0.2 x 0.79 in) or	
		5 x 25 mm(0.2 x 0.98 in)	
Termination	ELCO socket:	8016 series, 56 pins	

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FTA-E-02

Fail-safe digital output FTA (24/48/60 Vdc, 24 channels)

Description

The field termination assembly module FTA-E-02 is the interface between the system interconnection cables (SIC) and the external field wiring (on E-56 ELCO).

Twenty-four channels (separated into six groups of four channels) can be connected to the FTA-E-02 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The six SIC connectors are marked '1A', '1B', '2A', '2B', '3A' and '3B' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails.



Figure 1 Mechanical layout



	The polarizing notches of the ELCO socket can be set to any of six positions per side (factory-set at position 4). Changing the polarization requires removal of the FTA from the DIN EN rail and the use of a polarizing tool, make ELCO (part no. 06 1989 02). The ELCO socket has guide pins and socket gills to ensure correct alignment when mating.
Applications	For details on applications and connection options for the FTA-E-02 module refer to the 'SIC to FTA applications' data sheet.
Connections diagrams	Figure 2 and Figure 3 on the next two pages show the connections diagrams of the FTA-E-02 module. Figure 2 applies to configurations with one wire pair per channel (e.g. 10102/2/1, 10201/2/1, 10216/2/1 and 10205/2/1). Figure 3 applies to configurations with two wire pairs per channel (e.g. 10215/2/1).



Connections diagram

CONNECTIONS DIAGRAM FTA-E-02					
SI	C con	nector		Field termina	ls
Connector	in number	Signals		Signals	Elco pin number
	۵.		One wire pair per channel		
1A	A5	CH1+ -			
1A 1A	B5 A4	CH1 CH2+ -			
1A	B4	CH2			
1A 1A	A3 B3	CH3+ -		-OUT 1a -OUT 1b	AB
1A	A2	CH4+ -		-OUT 2a	C
1A 1A	B2	CH4		-OUT 2b -OUT 3a	D
1A	B1	nc		-OUT 3b	F
1B	Δ5	CH5+ -		-OUT 4a	H
1B	B5	CH5		-OUT 5a	ĸ
1B	A4	CH6+ -		-OUT 5b	L
1B 1B	A3	CH6- CH7+ -		-OUT 6b	N
1B	B3	CH7		-OUT 7a	Р
1B 1B	B2	CH8+ - CH8		-OUT 8a	к S
1B	A1	nc		-OUT 8b	Т
1B	B1	nc		-OUT 9a -OUT 9b	U V
2A	A5	CH9+ -		-OUT 10a	Ŵ
2A	B5	CH9		-OUT 10b Shield	X
2A 2A	B4	CH10		nc	Z
2A	A3	CH11+ -		-OUT 11a	a
2A 2A	A2	CH11		-OUT 12a	c D
2A	B2	CH12		OUT 12b	d
2A 2A	A1 B1	nc nc		- OUT 13a - OUT 13b	e f
				-OUT 14a	h
2B 2B	A5 B5	CH13+ -		-OUT 14b -OUT 15a	j k
2B	A4	CH14+ -		-OUT 15b	I I
2B	B4	CH14		-OUT 16a	m
2B 2B	B3	CH15]	-OUT 17a	р
2B	A2	CH16+ -	[] [-OUT 17b	r
2B 2B	A1	CH16 nc		-OUT 18a -OUT 18b	s t
2B	B1	nc		-OUT 19a	u
ЗA	A5	CH17+ -		- OUT 19b - OUT 20a	v w
3A	B5	CH17	/ _	-OUT 20b	x
3A 3A	A4 B4	CH18+ -		-OUT 21a -OUT 21b	у 7
3A	A3	CH19+ -] _	OUT 22a	AA
3A	B3	CH19] [- OUT 22b	BB
3A 3A	B2	CH20+ -]	-OUT 23b	DD
3A	A1	nc		- OUT 24a	EE
ЗA	B.I	nc		nc	HH
3B	A5	CH21+ -		nc	JJ
3B 3B	В5 А4	CH21 CH22+ -		nc	KK LL
3B	B4	CH22]	nc	MM
3B 3B	A3 B3	CH23+ -		nc	NN
3B	A2	CH24+ -			
3B 3B	B2 ∆1	CH24			
3B	B1	nc			
nc = not c	connecte	d			

Figure 2 Connections diagram (one wire pair per channel)



Connections diagram

CONNECTIONS DIAGRAM FTA-E-02					
SI	SIC connector			Field terminal	ls
tor	ber	s		<u>0</u>	er in
nnec	unu	igna		igna	lco p ump
ပိ	Pin	S	Two wire pairs per channel	S	ΞĒ
1A	A5	CH1+ -			
1A 1A	85 A4	CH1			
1A	B4	CH1			
1A	A3	CH2+ -		OUT 1a	A
1A 1A	A2	CH2 CH2+ -		OUT 18	C
1A	B2	CH2		-OUT 1b	D
1A 1A	A1 B1	nc		- OUT 2a - OUT 2b	E
17.	ы	110		-OUT 2a	H
1B	A5	CH3+ -		-OUT 2b	J
1B 1B	85 A4	CH3 CH3+ -		-OUT 3a -OUT 3b	K L
1B	B4	СН3	L	OUT 3a	M
1B	A3	CH4+ -		- OUT 3b	N
1B	A2	CH4+ -		OUT 4b	R
1B	B2	CH4		-OUT 4a	S
1B 1B	A1 B1	nc		- OUT 4b	Т
	ы	ne		OUT 5b	V
2A	A5	CH5+ -		OUT 5a	W
2A 24	B5	CH5+ -		OUT 5b Shield	X
2A 2A	B4	CH5		nc	Z
2A	A3	CH6+ -		OUT 6a	а
2A 2A	B3	CH6		OUT 6b	b
2A	B2	CH6		-OUT 6b	d
2A	A1	nc		-OUT 7a	e
ZA	B1	nc		- OUT 76 - OUT 7a	r h
2B	A5	CH7+ -		OUT 7b	j
2B	B5	CH7		OUT 8a	k
2B 2B	B4	CH7]	OUT 8a	m
2B	A3	CH8+ -		-OUT 8b	n
2B 2B	B3	CH8		-OUT 9a	p r
2B	B2	CH8]	-OUT 9a	s
2B	A1	nc		-OUT 9b	t
2B	В1	nc		- 001 10a - OUT 10b	u v
ЗA	A5	CH9+ -	└────┘│││││ ┌─────	OUT 10a	w
3A	B5	CH9		OUT 10b	X
3A 3A	A4 B4	CH9+ -		OUT 11b	y z
ЗA	A3	CH10+ -		OUT 11a	AA
3A 3A	B3	CH10		OUT 11b	BB
3A 3A	B2	CH10		OUT 12b	DD
3A	A1	nc		OUT 12a	EE
3A	B1	nc		DUI 12b	FF HH
3B	A5	CH11+ -	L]	nc	JJ
3B	B5	CH11	·	nc	KK
3B 3B	A4 B4	CH11+ - CH11		nc	MM
3B	A3	CH12+ -		nc	NN
3B	B3	CH12			
3B 3B	B2	CH12+ -			
3B	A1	nc			
3B	B1	nc			
10 - 1010		-			







Fechnical data	The FTA-E-02 module has the following specifications:		
General	Type number:	FTA-E-02	
	Approvals:	CE, UL	
Power	Number of channels:	24 (6 groups of 4)	
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)	
		125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
	Maximum continuous		
	current per channel:	2 A	
Physical	Module dimensions:	125 x 70 x 55 mm (L x W x H) 4.92 x 2.76 x 2.17 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	126 mm (4.96 in)	
Termination	ELCO socket:	8016 series, 56 pins	

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Left blank intentionally.



Digital output FTA (24 Vdc, 24 channels)

Description

FTA-E-03

The field termination assembly module FTA-E-03 is the interface between the system interconnection cables (SIC) and the external field wiring (on E-56 ELCO).

Twenty-four channels (separated into three groups of eight channels with a common –) can be connected to the FTA-E-03 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The three SIC connectors are marked '1A', '1B' and '2A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails.



Figure 1 Mechanical layout



	The polarizing notches of the ELCO socket can be set to any of six positions per side (factory-set at position 4). Changing the polarization requires removal of the FTA from the DIN EN rail and the use of a polarizing tool, make ELCO (part no. 06 1989 02). The ELCO socket has guide pins and socket gills to ensure correct alignment when mating.		
Applications	For details on applications and connection options for the FTA-E-03 module refer to the 'SIC to FTA applications' data sheet.		
Connections diagrams	Figure 2 and Figure 3 on the next two pages show the connections diagrams of the FTA-E-03 module. Figure 2 shows the connections diagram for 16-channel digital output modules. Figure 3 is a connection example for the 12-channel digital output module 10206/2/1.		





Connections diagram

CONNECTIONS DIAGRAM FTA-E-03					
SIC connector		nector		Field termina	ls
Connector	Pin number	Signals	Digital output module (16 chappels)	Signals	Elco pin number
1A	A5	CH1 -		OUT 1a	А
1A	B5	CH2 -		OUT 1b	В
1A	A4	CH3 -		OUT 2a	C
1A 1A	B4 Δ3	CH4 -			
1A	B3	CH6 -		OUT 36	F
1A	A2	CH7 -		OUT 4a	Н
1A	B2	nc	+	– OUT 4b	J
1A	A1	CH8 -]	OUT 5a	К
1A	B1	0 Vdc -	• • • • • • • • • • • • • • • • • • • •	- OUT 5b	
					IVI N
				- OUT 7a	P
			↓	OUT 7b	R
				OUT 8a	S
				OUT 8b	Т
				OUT 9a	U
1B	Δ5	CH0 -	·		V W
1B 1B	B5	CH10 -		OUT 100	X
1B	A4	CH11 -		Shield	Y
1B	B4	CH12 -		nc	Z
1B	A3	CH13 -]	OUT 11a	а
1B	B3	CH14 -	•	OUT 11b	b
1B 1P	A2	CH15 -		- OUT 12a	C d
1B	A1	CH16 -		- OUT 13a	e
1B	B1	0 Vdc -		OUT 13b	f
				OUT 14a	h
				OUT 14b	j
				OUT 15a	k
				- OUT 150 - OUT 169	m
				OUT 16b	n
				OUT 17a	р
				OUT 17b	r
				OUT 18a	S
	<u>۸</u> -	CU47			t
2A 2A	A5 B5	CH17 -		OUT 19a	u v
2A	A4	CH19 -		OUT 20a	Ŵ
2A	B4	CH20 -	l	OUT 20b	x
2A	A3	CH21 -		OUT 21a	у
2A	B3	CH22 -	+	OUT 21b	z
2A	A2	CH23 -		OUT 22a	AA
2A 24	Β2 Δ1	nc CH24 -		- OUT 220	BB
2A	B1	0 Vdc -	 	OUT 23b	DD
				OUT 24a	EE
				OUT 24b	FF
				nc	HH
				nc	JJ
				nc	MM
				nc	NN
no - not (onnoctor	4		,	-

Figure 2 Connections diagram (for 16-channel digital output modules)



Connections diagram

	CONNECTIONS DIAGRAM FTA-E-03				
SIC connector			Field termina	ls	
Connector	Pin number	Signals	Example for 12-channel digital output module 10206/2/1	Signals	Elco pin number
1A	A5	CH1 -		OUT 1a	A
1A	B5	CH2 -			В
14	A4 B4				
1A	A3	CH5 -		OUT 3a	E
1A	B3	CH6 -		OUT 3b	F
1A	A2	CH7 -		OUT 4a	Н
1A	B2	nc		OUT 4b	J
1A	A1	CH8 -] [] []	OUT 5a	К
1A	B1	0 Vdc -	• • • •		L
					M
					N P
					R
				- OUT 8a	S
				OUT 8b	T
				OUT 9a	U
				OUT 9b	V
1B	A5	CH9 -]	OUT 10a	W
1B	B5	CH10 -	•	OUT 10b	X
1B	A4	CH11 -		Shield	Y
1B 1P	B4	CH12 -			2
1B 1B	R3				a h
1B	A2	0 Vdc -		-OUT 12a	c
1B	B2	nc		OUT 12b	d
1B	A1	0 Vdc -		- 0 Vdc	е
1B	B1	0 Vdc -		- 0 Vdc	f
				- 0 Vdc	h
			• • • • • • • • • • • • • • • • • • •	- 0 Vdc	j
					К
					m
				- 0 Vdc	n
			[OUT 13a	р
				OUT 13b	r
1				OUT 14a	S
		0	. +	+ OUT 14b	t
2A	A5	CH13 -			u
2A 24	Δ <u>7</u>	CH14 -		OUT 16a	V W
24	R4 B4	CH16 -		OUT 16b	vv ×
2A	A3	CH17 -		OUT 17a	v
2A	B3	CH18 -	•	OUT 17b	z
2A	A2	CH19 -	L	OUT 18a	AA
2A	B2	nc	│	OUT 18b	BB
2A	A1	CH20 -		+ OUT 19a	CC
2A	B1	0 Vdc -	· · · · · · · · · · · · · · · · · · ·		
1				OUT 20a	FF
1				nc	HH
				nc	JJ
1				nc	KK
1				nc	LL
1				nc	MM
				nc	NN

Figure 3 Connections diagram (example for 12-channel digital output module 10206/2/1)





Fechnical data	The FTA-E-03 module has the following specifications:		
General	Type number:	FTA-E-03	
	Approvals:	CE, UL	
Power	Number of channels:	24 (3 groups of 8)	
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)	
		125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
	Maximum continuous		
	current per channel:	2 A	
Physical	Module dimensions:	125 x 70 x 55 mm (L x W x H) 4.92 x 2.76 x 2.17 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	126 mm (4.96 in)	
Termination	ELCO socket:	8016 series, 56 pins	

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Left blank intentionally.



Description

FTA-E-04 Dig

Digital output (relay contact) FTA (25 channels)

The field termination assembly module FTA-E-04 is the interface between the system interconnection cables (SIC) and the external field wiring (on E-56 ELCO).

Twenty-five channels (separated into five sets of five channels) can be connected to the FTA-E-04 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The five SIC connectors are marked '1A', '1B', '2A', '2B' and '3A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails.



Figure 1 Mechanical layout



The polarizing notches of the ELCO socket can be set to any of six positions per side (factory-set at position 4). Changing the polarization requires removal of the FTA from the DIN EN rail and the use of a polarizing tool, make ELCO (part no. 06 1989 02). The ELCO socket has guide pins and socket gills to ensure correct alignment when mating.

Applications	For details on applications and connection options for the FTA-E-04
	module refer to the 'SIC to FTA applications' data sheet.



Connections diagram

CONNECTIONS DIAGRAM FTA-E-04					
SIC connector		inector		Field terminal	s
nector	number	ignals		ignals	co pin umber
Cor	Pin	Ω.		ō	ΞZ
1A 1A	A5 B5	CH1 c -		-OUT 1a -OUT 1b	A
1A 1A	A4	CH2 c -		OUT 2a	C
1A	B4	CH2 no -		OUT 2b	D
1A	A3	СН3 с –		-OUT 3a	E
1A	B3	CH3 no -		-OUT 3b	F
1A 1A	AZ B2	CH4 c -		-001 4a -011 4b	
1A	A1	CH5 c -		OUT 5a	ĸ
1A	B1	CH5 no –		OUT 5b	L
				-OUT 6a	М
1B	A5	CH6 c -		OUT 6b	N
1B 1B	Δ <i>Δ</i>				P R
1B	B4	CH7 no -		OUT 8a	S
1B	A3	CH8 c -		OUT 8b	Т
1B	B3	CH8 no -		-OUT 9a	U
1B	A2	CH9 c -		OUT 9b	V
1B 1P	B2	CH9 no -	,, ,, , ,, ,, ,, ,, ,, ,, , ,, ,, ,, ,, ,, ,, , ,, ,, ,, ,, ,, ,, , ,, ,, ,, ,, , ,, , ,, , ,, , , , , , , , , , , , , , , , , , , ,	-001 10a	VV V
1B 1B	B1	CH10 C		Shield	Ŷ
		0.110.110		nc	Z
2A	A5	CH11 c -		-OUT 11a	а
2A	B5	CH11 no -		-OUT 11b	b
2A	A4	CH12 c -		-OUT 12a	C d
2A 2A	Б4 АЗ	CH1210 -		-OUT 120 -OUT 13a	u e
2A	B3	CH13 no -		-OUT 13b	f
2A	A2	CH14 c -		-OUT 14a	h
2A	B2	CH14 no -		–OUT 14b	j
2A	A1	CH15 c -		OUT 15a	k
ZA	BI	CH15 NO -		-001 150 -011T 16a	m
2B	A5	CH16 c -		OUT 16b	n
2B	B5	CH16 no -		OUT 17a	р
2B	A4	CH17 c -		OUT 17b	r
2B	B4	CH17 no -		-OUT 18a	S
2B 2B	A3 83	CH18 c -			t
2B	A2	CH19 c -		-OUT 19b	v
2B	B2	CH19 no -		-OUT 20a	w
2B	A1	CH20 c -		- OUT 20b	х
2B	B1	CH20 no -		-OUT 21a	У
24	\ F	CH01 a		-OUT 21b	Z
3A 3A	B5	CH21 no -		OUT 22b	BB
3A	A4	CH22 c -		-OUT 23a	CC
ЗA	B4	CH22 no -		OUT 23b	DD
ЗA	A3	CH23 c -	·	-OUT 24a	EE
3A	B3	CH23 no -		- OUT 24b	FF
3A 3A	A2 R2	CH24 C -		-001 25a -011T 25b	
3A	A1	CH25 c -		nc	KK
3A	B1	CH25 no -		nc	LL
				nc	MM
				nc	NN
nc = not c	connecte	ed			

Figure 2 Connections diagram

Honeywell



Technical data	The FTA-E-04 module has the following specifications:	
General	Type number:	FTA-E-04
	Approvals:	CE, UL
Power	Number of channels:	25 (5 groups of 5)
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)
		125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)
	Maximum continuous	
	current per channel:	2 A
Physical	Module dimensions:	125 x 70 x 55 mm (L x W x H) 4.92 x 2.76 x 2.17 in (L x W x H)
	DIN EN rails:	TS32 / TS35 x 7.5
	Used rail length:	126 mm (4.96 in)
Termination	ELCO socket:	8016 series, 56 pins

While this information is presented in good faith and believed to be accurate, Honeywell Safety Management Systems B.V. disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties except as may be stated in its written agreement with and for its customer.



FTA-E-05Active digital output (relay) FTA
(25 channels)DescriptionThe field termination assembly module FTA-E-05 is the interface
between the system interconnection cables (SIC) and the external
field wiring (on E-56 ELCO).Twenty-five potential-free relay contact output channels (separated
into five groups of five channels) can be connected to the FTA-E-05
module via system interconnection cables (SIC). These cables are
plugged into the SIC connectors on the FTA module. The five SIC
connectors are marked '1A', '1B', '2A', '2B' and '3A' (white print on the
board).

The FTA module has a universal snap-in facility for standard DIN EN rails.



Figure 1 Mechanical layout



Each group has a fuse (2 A) and a screw terminal pair for external power. This way the potential-free relay contacts of 10208/2/1 modules can be used as powering outputs to the field.

The polarizing notches of the ELCO socket can be set to any of six positions per side (factory-set at position 4). Changing the polarization requires removal of the FTA from the DIN EN rail and the use of a polarizing tool, make ELCO (part no. 06 1989 02). The ELCO socket has guide pins and socket gills to ensure correct alignment when mating.



Applications

For details on applications and connection options for the FTA-E-05 module refer to the 'SIC to FTA applications' data sheet.



Connections diagram

CONNECTIONS DIAGRAM FTA-E-05			
SIC connector		Field terminal	s
tor ber s		<u>0</u>	er n
onnec num Signa		Signa	lico p umb
S Din Cc		0	шс
	2 AT		
X2 1 + Vext - X2 2 - Vext -			
1A B5 CH1 c -			
1A A4 CH2 c -	→		
1A B4 CH2 no - 1A A3 CH3 c -			
1A B3 CH3 no -			
1A A2 CH4 c - 1A B2 CH4 no -		-OUT 1a	А
1A A1 CH5 c -	+	-OUT 1b	В
1A B1 CH5 no -	2 AT	- OUT 2a - OUT 2b	C D
X3 1 + Vext -		-OUT 3a	E
X3 2 - Vext -		- OUT 3b	F
1B A5 CH6 c -		-OUT 4b	J
1B B5 CH6 no -		-OUT 5a	K
1B B4 CH7 c -		-OUT 6a	M
1B A3 CH8 c -	├──┥ │└───┭──	-OUT 6b	N
1B B3 CH8 no - 1B A2 CH9 c -		-OUT 7a -OUT 7b	P R
1B B2 CH9 no -		-OUT 8a	S
1B A1 CH10 c -		-OUT 8b	T
	2 AT	-OUT 9b	V
X4 1 + Vext -		-OUT 10a	W
X4 2 - Vext -		Shield	Y
2A A5 CH11 c -	└── ┥	nc	Z
2A B5 CH11 no - 2A A4 CH12 c -		-OUT 11a -OUT 11b	a b
2A B4 CH12 no -		-OUT 12a	C
2A A3 CH13 c -		-OUT 12b	d
2A A2 CH14 c -	─ •	-OUT 13b	f
2A B2 CH14 no -		-OUT 14a	h
2A B1 CH15 c -		-OUT 145	J k
	2 AT	-OUT 15b	I
X5 1 + Vext - X5 2 - Vext -	· · · ·	- OUT 16a - OUT 16b	m n
		-OUT 17a	р
2B A5 CH16 c - 2B B5 CH16 po -		- OUT 17b - OUT 18a	r
2B A4 CH17 c -	├──┥	-OUT 18b	t
2B B4 CH17 no -		-OUT 19a -OUT 19b	u V
2B B3 CH18 no -	└─── <u></u> ┤────┘│┌──── [†] ───	-OUT 20a	w
2B A2 CH19 c -	└─── ┥	- OUT 20b	x
2B A1 CH20 c -		-OUT 21b	y z
2B B1 CH20 no -		-OUT 22a	AA
X6 1 + Vext -		- OUT 22b - OUT 23a	BB CC
X6 2 - Vext -		-OUT 23b	DD
3A A5 CH21 c -		-OUT 24a - OUT 24b	EE FF
3A B5 CH21 no -	╘───┤─────┘│││┌──┦───	-OUT 25a	НН
3A A4 CH22 c -	<u>└──</u> ┥ └──	- OUT 25b	JJ
3A A3 CH22 no -	↓	nc	LL
3A B3 CH23 no -	├── <u></u> ┤	nc	MM
3A A2 CH24 c - 3A B2 CH24 no -		nc	NN
3A A1 CH25 c -			
3A B1 CH25 no - no = normally open		nc = not connected	

Figure 3 Connections diagram



Technical data	The FTA-E-05 module has the following specifications:	
General	Type number:	FTA-E-05
	Approvals:	CE, UL
Power	Number of channels:	25 (5 groups of 5)
	Maximum voltage:	30 Vac / 36 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)
		125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)
Fuses	Rating:	2 AT (slow-acting)
	Dimensions:	5 x 20 mm (0.2 x 0.79 in) or
		5 x 25 mm(0.2 x 0.98 in)
Physical	Module dimensions:	155 x 70 x 65 mm (L x W x H)
		6.10 x 2.76 x 2.56 in (L x W x H)
	DIN EN rails:	TS32 / TS35 x 7.5
	Used rail length:	156 mm (6.14 in)
Termination	ELCO socket:	8016 series, 56 pins

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FTA-T-01Fail-safe digital input FTA
(24/48/60 Vdc, 24 channels)DescriptionThe field termination assembly module FTA-T-01 is the interface
between the system interconnection cables (SICs) and the external
field wiring (screw terminals).Twenty-four channels (separated into three groups of eight channels
with a 250 mA fuse in the common +) can be connected to the
FTA-T-01 module via system interconnection cables (SIC). These
cables are plugged into the SIC connectors on the FTA module. The
three SIC connectors are marked '1A', '1B' and '2A' (white print on the
board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.







Figure 1 Mechanical layout

Applications

For details on applications and connection options for the FTA-T-01 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-01 module is as follows:

CONNECTIONS DIAGRAM FTA-T-01					
SIC	connector			Field termina	ls
Connector	Pin number Signals			Signals	Terminal number
		-		IN 1+ (via fuse F1)	1
1A A	A5 CH1	-			2
		_		= IN 2+ (via luse F I)	3
1A F	34 CH4			IN 2 IN 3+ (via fuse E1)	5
1A A	A3 CH5	_			6
1A E	33 CH6	-		IN 4+ (via fuse F1)	7
1A /	42 CH7				8
1A E	32 nc	1	+	IN 5+ (via fuse F1)	9
1A A	A1 CH8			— IN 5-	10
1A E	B1 +24 Vdc		•	IN 6+ (via fuse F1)	11
		0.25 AT		IN 6	12
			•	IN 7+ (via fuse F1)	13
					14
				IN 8+ (VIA TUSE F1)	15
					10
				- IN 9-	17
			•	IN 10+ (via fuse F2)	19
1B /	A5 CH9	1			20
1B E	35 CH10			IN 11+ (via fuse F2)	21
1B A	A4 CH11				22
1B E	34 CH12		+	IN 12+ (via fuse F2)	23
1B /	A3 CH13			— IN 12-	24
1B E	33 CH14		──	IN 13+ (via fuse F2)	25
1B /	A2 CH15	-			26
1B E	32 nc	4	↑	- IN 14+ (via fuse F2)	27
1B /	AI CH16			IN 14-	28
	51 +24 Vac			- IN 15+ (via luse F2)	29
		0.25 AT		IN 15-	31
					32
				IN 17+ (via fuse F3)	33
					34
			+	IN 18+ (via fuse F3)	35
				IN 18-	36
L	<u>.</u>		+	IN 19+ (via fuse F3)	37
2A /	45 CH17	1			38
2A E	35 CH18	-		IN 20+ (via fuse F3)	39
2A /	4 CH19	-		IN 20-	40
2A E	04 UH2U	-		$101 \ge 1+ (via tuse = 3)$	41
2A A	33 CH22			IN 22+ (via fuse F3)	42
2A 4	A2 CH23	1			44
2A E	32 nc	1		IN 23+ (via fuse F3)	45
2A /	A1 CH24	1		- IN 23-	46
2A E	31 +24 Vdc		├ ───	IN 24+ (via fuse F3)	47
		0.25 AT		IN 24-	48
				Shield	49
				Shield	50
nc = not conr	nected				

Figure 2 Connections diagram



The FTA-T-01 module has the following specifications:		
Type number:	FTA-T-01	
Approvals:	CE, UL	
Number of channels:	24 (3 groups of 8)	
Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)	
	125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
Module dimensions:	145 x 70 x 65 mm (L x W x H) 5.71 x 2.76 x 2.56 in (L x W x H)	
DIN EN rails:	TS32 / TS35 x 7.5	
Used rail length:	146 mm (5.75 in)	
Rating:	250 mAT (slow-acting)	
Dimensions:	5 x 20 mm (0.2 x 0.79 in) or	
	5 x 25 mm(0.2 x 0.98 in)	
Screw terminals:		
– max. wire diameter	2.5 mm ² (AWG 14)	
 strip length 	7 mm (0.28 in)	
 tightening torque 	0.5 Nm (0.37 ft-lb)	
	 The FTA-T-01 module has Type number: Approvals: Number of channels: Maximum voltage: Module dimensions: DIN EN rails: Used rail length: Rating: Dimensions: Screw terminals: – max. wire diameter – strip length – tightening torque 	

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FTA-T-02Fail-safe digital output FTA
(24/48/60 Vdc, 24 channels)DescriptionThe field termination assembly module FTA-T-02 is the interface
between the system interconnection cables (SICs) and the external
field wiring (screw terminals).Twenty-four channels (separated into six groups of four channels) can

Twenty-four channels (separated into six groups of four channels) can be connected to the FTA-T-02 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The six SIC connectors are marked '1A', '1B', '2A', '2B', '3A' and '3B' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.





Applications

For details on applications and connection options for the FTA-T-02 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-02 module is as follows:

			CONNECTIONS DIAGRAM FTA-T-02	2	
SI	C con	nector		Field termina	ls
tor	ber	s		ø	a al
nnec	unu	ignal		ignal	im be
Ö	Pin	00		ō	Te
1A	A5	CH1+ -			
1A 1A	B5 A4	CH1 CH2+ -			
1A	B4	CH2			
1A	A3	CH3+ -			
1A 1A	В3 А2	CH3 CH4+ -		-OUT 1a	1
1A	B2	CH4		-OUT 1b	2
1A	A1 P1	nc		-OUT 2a	3
	ы	nc		-OUT 3a	5
1B	A5	CH5+ -		– OUT 3b	6
1B 1B	B5	CH5		-OUT 4a -OUT 4b	7
1B	B4	CH6	[-OUT 5a	9
1B	A3	CH7+ -] [] [- OUT 5b	10
1B 1B	B3 A2	CH7		-001 6a -0UT 6b	11 12
1B	B2	CH8		-OUT 7a	13
1B	A1	nc		-OUT 7b	14
1B	B1	nc		-OUT 8a -OUT 8b	15 16
2A	A5	CH9+ -		-OUT 9a	17
2A	B5	CH9		-OUT 9b	18
2A 24	A4 B4	CH10+ -		-OUT 10a	19 20
2A 2A	A3	CH11+ -		-OUT 11a	20
2A	B3	CH11		-OUT 11b	22
2A 2A	A2 B2	CH12+ -		-OUT 12a -OUT 12b	23 24
2A	A1	nc		-OUT 13a	25
2A	B1	nc		-OUT 13b	26
2B	A5	CH13+ -		-OUT 14a -OUT 14b	27
2B	B5	CH13]	-OUT 15a	29
2B	A4	CH14+ -		-OUT 15b	30
2B 2B	A3	CH14		-OUT 16b	31
2B	B3	CH15		-OUT 17a	33
2B	A2	CH16+ -		OUT 17b	34
2B 2B	A1	nc		-OUT 18b	36
2B	B1	nc		-OUT 19a	37
30	<u>۵</u> 5	CH17+ -		OUT 19b	38
3A 3A	B5	CH17]	-OUT 20b	40
3A	A4	CH18+ -	/	-OUT 21a	41
3A 34	B4 ∆3	CH18		- OUT 21b - OUT 22a	42 43
3A 3A	B3	CH19]	-OUT 22b	44
3A	A2	CH20+ -	/	-OUT 23a	45
3A 34	B2	CH20		- OUT 23b	46
3A	B1	nc		-OUT 24b	48
05	45	01101		Shield	49
3B 3B	A5 B5	CH21+ - CH21		Shiela	50
3B	A4	CH22+ -]		
3B	B4	CH22			
3B 3B	A3 B3	CH23+ - CH23			
3B	A2	CH24+ -			
3B	B2	CH24			
3B 3B	B1	nc			
nc = not o	connecte	d			

Figure 2 Connections diagram





Fechnical data	The FTA-T-02 module has the following specifications:	
General	Type number:	FTA-T-02
	Approvals:	CE, UL
Power	Number of channels:	24 (6 groups of 4)
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12) 125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)
	Maximum continuous	
	current per channel:	2 A
Physical	Module dimensions:	145 x 70 x 57 mm (L x W x H) 5.71 x 2.76 x 2.24 in (L x W x H)
	DIN EN rails:	TS32 / TS35 x 7.5
	Used rail length:	146 mm (5.75 in)
Termination	Screw terminals:	
	– max. wire diameter	2.5 mm ² (AWG 14)
	– strip length	7 mm (0.28 in)
	 tightening torque 	0.5 Nm (0.37 ft-lb)

While this information is presented in good faith and believed to be accurate, Honeywell Safety Management Systems B.V. disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties except as may be stated in its written agreement with and for its customer.



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Digital output FTA (24 Vdc, 24 channels)

Description

FTA-T-03

The field termination assembly module FTA-T-03 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals).

Twenty-four channels (separated into three groups of eight channels with a common –) can be connected to the FTA-T-03 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The three SIC connectors are marked '1A', '1B' and '2A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout



Applications	For details on applications and connection options for the FTA-T-03 module refer to the 'SIC to FTA applications' data sheet.
Connections	Figure 2 and Figure 3 on the next two pages show the connections diagrams of the FTA-T-03 module.
diagrams	Figure 2 shows the connections diagram for 16-channel digital output modules. Figure 3 is a connection example for the 12-channel digital output module 10206/2/1.


Connections diagram

CONNECTIONS DIAGRAM FTA-T-03					
SI	IC con	nector		Field termina	ls
Connector	Pin number	Signals	Digital output module (16 channels)	Signals	Terminal number
1A	A5	CH1 -		OUT 1a	1
1A	B5	CH2 -		OUT 1b	2
1A	A4	CH3 -		–OUT 2a	3
1A	B4	CH4 -	•	OUT 2b	4
1A	A3	CH5 -		- OUT 3a	5
1A	B3	CH6 -			6
1A	A2	CH7 -			/
1A	BZ A1				8
14	R1			OUT 5a	9 10
- 173	ы	0 140		- OUT 6a	10
				OUT 6b	12
				- OUT 7a	13
			↓ • • • • • • • • • • • • • • • • • •	OUT 7b	14
				- OUT 8a	15
				- OUT 8b	16
				– OUT 9a	17
				OUT 9b	18
1B	A5	CH9 -		OUT 10a	19
1B	B5	CH10 -	•	OUT 10b	20
1B	A4	CH11 -		OUT 11a	21
1B 1P	B4	CH12 -			22
10	A3 B2			- OUT 12a	23
1B	Δ2	CH14 -		- OUT 120 - OUT 13a	24
1B	R2	nc		OUT 13a	25
1B	A1	CH16 -		- OUT 14a	27
1B	B1	0 Vdc -		-OUT 14b	28
				- OUT 15a	29
			• • • • • • • • • • • • • • • • • • •	OUT 15b	30
				OUT 16a	31
				OUT 16b	32
				– OUT 17a	33
				OUT 17b	34
				- OUT 18a	35
		01117			36
2A	A5	CH1/ -			37
2A	B5				38
2A 2A	R4 B4	CH20 -			39
24	A3	CH21 -		OUT 21a	40
2A	B3	CH22 -		- OUT 21b	42
2A	A2	CH23 -		-OUT 22a	43
2A	B2	nc	│	OUT 22b	44
2A	A1	CH24 -		OUT 23a	45
2A	B1	0 Vdc	<u>├</u> ────	OUT 23b	46
				-OUT 24a	47
				OUT 24b	48
				Shield	49
				Shield	50
nc = not c	connecte	d			

Figure 2 Connections diagram (for 16-channel digital output modules)



Connections diagram

CONNECTIONS DIAGRAM FTA-T-03					
SI	C con	nector		Field terminals	
Connector	Pin number	Signals	Example for 12-channel digital output module (10206/2/1)	Signals	Terminal number
				•	-
1A	A5	CH1 -		OUT 1a	1
1A	B5	CH2 -		OUT 1b	2
1A	A4	CH3 -		OUT 2a	3
1A	B4	CH4 -		OUT 2b	4
1A	A3	CH5 –		OUT 3a	5
1A	B3	CH6 -		OUT 3b	6
1A	A2	CH7 -		-OUT 4a	7
1A	B2	nc			8
1A	A1 D1				9
	DI	u vac -			10
					12
				-OUT 7a	13
			•	OUT 7b	14
				OUT 8a	15
				-OUT 8b	16
				OUT 9a	17
				OUT 9b	18
1B	A5	CH9 –		OUT 10a	19
1B	B5	CH10 -	•	OUT 10b	20
1B	A4	CH11 -		OUT 11a	21
1B	B4	CH12 -	 	OUT 11b	22
1B	A3	0 Vdc -		OUT 12a	23
1B 4D	B3	0 Vdc -			24
1B 1P	A2 P2				25
10					20
1B	R1				27
	ы	0 100			20
			•	- 0 Vdc	30
				-0 Vdc	31
				- 0 Vdc	32
				OUT 13a	33
				OUT 13b	34
				OUT 14a	35
			. +	OUT 14b	36
2A	A5	CH13 -		OUT 15a	37
2A	B5	CH14 -	······································	OUT 15b	38
2A	A4	CH15 -		- OUT 16a	39
2A	B4	CH16 -			40
2A	A3	CH1/ -			41
2A 2A	<u>∆</u> 2				42
24	R2				43
2A	A1	CH20 -		OUT 19a	44
2A	B1	0 Vdc -		OUT 19b	46
<u> </u>		0.40		OUT 20a	47
				OUT 20b	48
				Shield	49
				Shield	50
nc = not d	connecte	d			

Figure 3 Connections diagram (example for 12-channel digital output module 10206/2/1)





Fechnical data	The FTA-T-03 module has the following specifications:		
General	Type number:	FTA-T-03	
	Approvals:	CE, UL	
Power	Number of channels:	24 (3 groups of 8)	
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12) 125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
	Maximum continuous		
	current per channel:	2 A	
Physical	Module dimensions:	145 x 70 x 57 mm (L x W x H) 5.71 x 2.76 x 2.24 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	146 mm (5.75 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	 strip length 	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	

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Description

FTA-T-04 Digital output (relay contact) FTA (25 channels)

The field termination assembly module FTA-T-04 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals).

Twenty-five channels (separated into five groups of five channels) can be connected to the FTA-T-04 module via system interconnection cables (SIC). These cables are plugged into the SIC connectors on the FTA module. The five SIC connectors are marked '1A', '1B', '2A', '2B' and '3A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.





Figure 1 Mechanical layout

Applications

For details on applications and connection options for the FTA-T-04 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-04 module is as follows:

CONNECTIONS DIAGRAM FTA-T-04					
SI	IC con	nector		Field terminal	s
Connector	Pin number	Signals		Signals	Terminal number
1A	A5	CH1 c -			
1A	B5	CH1 no -			
1A	A4	CH2 c -		-OUT 1a	1
1A	B4	CH2 no -		-OUT 1b	2
1A	A3	СН3 с –		-OUT 2a	3
1A	B3	CH3 no -		-OUT 2b	4
1A	A2	CH4 c -		-OUT 3a	5
1A	B2	CH4 no -		-OUT 3b	6
1A	A1	CH5 c -		-OUT 4a	7
1A	B1	CH5 no -			8
10	15				9 10
1B	R5			-OUT 6a	10
1B	A4			-OUT 6b	12
1B	B4	CH7 no -		-OUT 7a	13
1B	A3	CH8 c -		-OUT 7b	14
1B	B3	CH8 no -		-OUT 8a	15
1B	A2	СН9 с –		-OUT 8b	16
1B	B2	CH9 no -		-OUT 9a	17
1B	A1	CH10 c -		-OUT 9b	18
1B	B1	CH10 no -		-OUT 10a	19
				-OUT 10b	20
2A	A5	CH11 c -		-OUT 11a	21
2A	B5	CH11 no -		–OUT 11b	22
2A	A4	CH12 c -		-OUT 12a	23
2A	B4	CH12 no -		-OUT 12b	24
2A	A3	CH13 c -		-OUT 13a	25
2A	B3	CH13 no -		-OUT 13b	26
2A	A2	CH14 c -		-OUT 14a	27
2A	B2	CH14 no -		-OUT 14b	28
2A	A1	CH15 c -		-OUT 15a	29
2A	B1	CH15 no -			30
20	\ F				31
20	A5 DE				32
2B 2B	CG A				33
2B	R4	CH17 no -		- OUT 18a	35
2B	A3	CH18 c -		-OUT 18b	36
2B	B3	CH18 no -		-OUT 19a	37
2B	A2	CH19 c -]	-OUT 19b	38
2B	B2	CH19 no -		- OUT 20a	39
2B	A1	CH20 c -		OUT 20b	40
2B	B1	CH20 no -		-OUT 21a	41
				-OUT 21b	42
ЗA	A5	CH21 c -		-OUT 22a	43
3A	B5	CH21 no -		OUT 22b	44
3A	A4	CH22 c -		-OUT 23a	45
ЗA	B4	CH22 no -		-OUT 23b	46
3A	A3	CH23 c -		-OUT 24a	47
3A	B3	CH23 no -		OUT 24b	48
3A	A2	CH24 c -		-OUT 25a	49
3A	B2	CH24 no -		- UUT 25b	50
3A	A1	CH25 C -	1		
ЪA	BI	ULT29 110 -			

Figure 2 Connections diagram





Fechnical data	The FTA-T-04 module has	The FTA-T-04 module has the following specifications:		
General	Type number:	FTA-T-04		
	Approvals:	CE, UL		
Power	Number of channels:	25 (5 groups of 5)		
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12) 125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)		
	Maximum continuous			
	current per channel:	2 A		
Physical	Module dimensions:	145 x 70 x 57 mm (L x W x H) 5.71 x 2.76 x 2.24 in (L x W x H)		
	DIN EN rails:	TS32 / TS35 x 7.5		
	Used rail length:	146 mm (5.75 in)		
Termination	Screw terminals:			
	- max. wire diameter	2.5 mm ² (AWG 14)		
	 strip length 	7 mm (0.28 in)		
	 tightening torque 	0.5 Nm (0.37 ft-lb)		

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FTA-T-05Fail-safe digital output FTA
(24 Vdc, 12 channels)DescriptionThe field termination assembly module FTA-T-05 is the interface
between the system interconnection cables (SICs) and the external
field wiring (screw terminals).Twelve channels (separated into six groups of two channels) can be
connected to the FTA-T-05 module via system interconnection cables
(SIC). These cables are plugged into the SIC connectors on the FTA
module. The six SIC connectors are marked '1A', '1B', '2A', '2B', '3A'

and '3B' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.







Figure 1 Mechanical layout

Applications

For details on applications and connection options for the FTA-T-05 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-05 module is as follows:

CONNECTIONS DIAGRAM FTA-T-05					
SI	IC con	nector		Field terminal	s
ctor	ber	s		<u>0</u>	al er
nnec	num	Signa		Signa	ermir umb
ပိ	Pin	0		0	ĔĊ
4.4	45	0.14			
1A 1A	B5	CH1+ -			
1A	A4	CH1+ -			
1A 1A	A3	CH1			
1A	B3	CH2			
1A 1A	B2	CH2+ -	- -		
1A	A1 P1	nc			
	ы	nc			
1B	A5	CH3+ -			
1B	A4	CH3+ -			
1B 1B	B4	CH3			
1B	B3	CH4			
1B	A2	CH4+ -			1
1B	A1	nc		-OUT 1b	2
1B	B1	nc		-OUT 2a	3
2A	A5	CH5+ -		-OUT 3a	5
2A	B5	CH5		-OUT 3b	6
2A 2A	B4	CH5+ -		-001 4a -0UT 4b	8
2A	A3	CH6+ -		-OUT 5a	9
2A 2A	A2	CH6+ -		-OUT 56 -OUT 6a	10
2A	B2	CH6	•	-OUT 6b	12
2A 2A	B1	nc		-OUT 7b	13
00	45	0117		OUT 8a	15
2B 2B	B5	CH7+ -		-OUT 9a	16
2B	A4	CH7+ -	↓●】 [-OUT 9b	18
2B 2B	A3	CH7 CH8+ -		-OUT 10b	20
2B	B3	CH8		-OUT 11a	21
2B 2B	B2	CH8+ - CH8		-OUT 11b -OUT 12a	22
2B	A1	nc		OUT 12b	24
28	81	nc		Shield	∠5
3A	A5	CH9+ -			
3A 3A	A4	CH9+ -	↓		
3A	B4	CH9	_ <u>+</u>		
3A 3A	B3	CH10+ -			
3A	A2	CH10+ -	_ <u>_</u>		
3A 3A	82 A1	nc			
ЗA	B1	nc			
3B	A5	CH11+ -			
3B	B5	CH11			
3B 3B	B4	CH11			
3B	A3	CH12+ -			
3B 3B	A2	CH12 CH12+ -			
3B	B2	CH12	_]		
3B 3B	A1 B1	nc			
nc = not o	connecte	d			







Fechnical data	The FTA-T-05 module has the following specifications:		
General	Type number:	FTA-T-05	
	Approvals:	CE, UL	
Power	Number of channels:	12 (6 groups of 2)	
	Maximum voltage:	36 Vac / 50 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12) 125 Vac / 150 Vdc – IEC 1010 (1990), overvoltage category 2 (Table D.10)	
	Maximum continuous		
	current per channel:	3 A	
Physical	Module dimensions:	145 x 70 x 48 mm (L x W x H) 5.71 x 2.76 x 1.89 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	146 mm (5.75 in)	
Termination	Screw terminals:		
	- max. wire diameter	2.5 mm ² (AWG 14)	
	 strip length 	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	

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FTA-T-06 Fail-safe active digital input FTA (115 Vac, 8 channels) Description The field termination assembly module FTA-T-06 is an eight-channel fail-safe 115 Vac input converter module which supplies the AC voltage to the field contacts (potential-free). The module has one pair of terminals to connect the external excitation voltage for all eight channels. Each channel converts a 115 Vac input signal to a 24 Vdc input signal which can be connected to the 24 Vdc fail-safe input module 10101/2/1, thus creating a fail-safe 115 Vac input for the FSC system. Eight channels can be connected to the FTA-T-06 module via a system interconnection cable (SIC). This cable is plugged into the SIC connector on the FTA module. The SIC connector is marked '1A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout





Figure 2 Schematic diagram

ApplicationsFor details on applications and connection options for the FTA-T-06
module refer to the 'SIC to FTA applications' data sheet.

Field cable lengths

High-impedance AC inputs – like the inputs on this FTA – have a limited capability of handling the wire capacitance of standard multicore field cables. The wire capacitance of the field cable acts as a shunt impedance over the field contact (see Figure 3).



Figure 3 Standard (multicore) field cable



When the current through this shunt impedance exceeds the maximum 'LOW' current, the input may be activated by this shunt impedance, thus disabling the input function (by keeping the input activated continuously, i.e. ON). Every AC input will have a maximum 'LOW' current that it can handle.

The maximum allowable cable length depends on the maximum 'LOW' current (e.g. 1.0 mA), the typical cable capacitance (e.g. 120 pF/m), the maximum supply voltage (e.g. 130 Vac) and the supply frequency (e.g. 60 Hz).

The maximum length (in meters) can be calculated using the following formula:

 $L_{max} = \frac{I_{low}}{V_{max} * 2 * \pi * f * C_{typ}}$

where:

 L_{max} = maximum allowable cable length I_{low} = maximum 'LOW' current V_{max} = maximum supply voltage f = supply frequency C_{typ} = typical cable capacitance

As an example, we will calculate the maximum field cable length (in meters) using the values mentioned above:

$$L_{max} = \frac{(1.0*10^{-3})}{130*2*\pi*60*(120*10^{-12})} = 170 \text{ m}$$

In this example, the maximum allowable field cable length is 170 meters (186 yards).

Solutions:

The field cable length limit can be eliminated by using field cables with wires that are shielded separately (see Figure 4). The only (relevant) capacitance of the input wire is to the shield (0 Vac or earth) and this will not activate a 'LOW' input. In case of shielded wire pairs, the second wire of the pair must be:

- 1. left unconnected, or
- 2. connected to the same input signal, or
- 3. connected to 0 Vac.

The 115 Vac wire can be used for more than one input.

Connections





Figure 4 Field cable with separately shielded wires

In practice, a mix of wiring methods may be used. For example, use a cable with shielded wires between the control cabinet and a distribution box close to the process. This cable may be long, e.g. 3 km (1.8 mi). Then use a standard (multicore) cable for the connection between the distribution box and the field contact. This cable length is limited to the value calculated using the formula mentioned above.

The connections diagram of the FTA-T-06 module is as follows:

	CONNECTIONS DIAGRAM FTA-T-06						
SI	C con	nector	Field termina	Is			
Connector	Pin number	Signals	Signals	Terminal number			
				-			
			IN 1a	1			
			IN 1b	2			
				3			
	1		IN 26	4			
1	A5	CH1 -		5			
1	B5	CH2 -		6			
1	A4	CH3 -		/			
1	B4	CH4 -		8			
1	A3	CH5 -					
	B3			9			
1	A2 D0	CH7 -		10			
1	B2			11			
1	AT	CH8 -		12			
1	B1	nc		13			
				14			
				15			
				10			
				10			
nc - not (connected	d		18			

Figure 5 Connections diagram



Technical data	The FTA-T-06 module has the following specifications:		
General	Type number:	FTA-T-06	
	Approvals:	CE, TÜV, UL	
Input	Number of input channels:	8	
	Input voltage:	115 Vac, ± 15%	
	Input frequency:	50-60 Hz	
	Input current:	< 16 mA at 115 Vac	
	Input LOW:	$I \leq 1 \text{ mA}$ (see 'Field cable length' section in this data sheet)	
Physical	Module dimensions:	195 x 70 x 48 mm (L x W x H) 7.68 x 2.76 x 1.89 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	196 mm (7.72 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	– strip length	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	

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FTA-T-07Fail-safe passive digital input FTA
(115 Vac, 8 channels)DescriptionThe field termination assembly module FTA-T-07 is an eight-channel
fail-safe 115 Vac input converter module.
Each channel converts an externally supplied 115 Vac input signal to a
24 Vdc input signal which can be connected to the 24 Vdc fail-safe
input module 10101/2/1, thus creating a fail-safe 115 Vac input for the
FSC system.Eight channels can be connected to the FTA-T-07 module via a system
interconnection cable (SIC). This cable is plugged into the SIC
connector on the FTA module. The SIC connector is marked '1A'
(white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout





Figure 2 Schematic diagram

Applications	For details on applications and connection options for the FTA-T-07
	module refer to the 'SIC to FTA applications' data sheet.

Field cable lengths High-impedance AC inputs – like the inputs on this FTA – have a limited capability of handling the wire capacitance of standard multicore field cables. The wire capacitance of the field cable acts as a shunt impedance over the field contact (see Figure 3).



Figure 3 Standard (multicore) field cable



When the current through this shunt impedance exceeds the maximum 'LOW' current, the input may be activated by this shunt impedance, thus disabling the input function (by keeping the input activated continuously, i.e. ON). Every AC input will have a maximum 'LOW' current that it can handle.

The maximum allowable cable length depends on the maximum 'LOW' current (e.g. 1.0 mA), the typical cable capacitance (e.g. 120 pF/m), the maximum supply voltage (e.g. 130 Vac) and the supply frequency (e.g. 60 Hz).

The maximum length (in meters) can be calculated using the following formula:

 $L_{max} = \frac{I_{low}}{V_{max} * 2 * \pi * f * C_{typ}}$

where:

 L_{max} = maximum allowable cable length I_{low} = maximum 'LOW' current V_{max} = maximum supply voltage f = supply frequency C_{typ} = typical cable capacitance

As an example, we will calculate the maximum field cable length (in meters) using the values mentioned above:

$$L_{max} = \frac{(1.0*10^{-3})}{130*2*\pi*60*(120*10^{-12})} = 170 \text{ m}$$

In this example, the maximum allowable field cable length is 170 meters (186 yards).

Solutions:

The field cable length limit can be eliminated by using field cables with wires that are shielded separately (see Figure 4). The only (relevant) capacitance of the input wire is to the shield (0 Vac or earth) and this will not activate a 'LOW' input. However, this type of cable is rather unusual. Field cables with shielded wire pairs are more commonly used. This allows for two connections methods:

- 1. Use the method of Figure 4 and leave the second wire of each pair unconnected, or
- 2. Connect the second wire of each pair to 0 Vac (see Figure 5). The 115 Vac / 0 Vac supply pair can be used for more than one input.





Figure 4 Field cable with separately shielded wires



Figure 5 Field cable with shielded pairs

In practice, a mix of wiring methods may be used. For example, use a cable with shielded pairs between the control cabinet and a distribution box close to the process. This cable may be long, e.g. 3 km (1.8 mi). Then use a standard (multicore) cable for the connection between the distribution box and the field contact. This cable length is limited to the value calculated using the formula mentioned above.



Connections

The connections diagram of the FTA-T-07 module is as follows:

	CONNECTIONS DIAGRAM FTA-T-07					
SI	C con	nector		Field termina	ls	
Connector	Pin number	Signals		Signals	Terminal number	
			[[]]	-IN 1a	1	
				IN 1b	2	
				-IN 2a	3	
1	A5	CH1 -		IN 2b	4	
1	B5	CH2 -		-IN 3a	5	
1	A4	CH3 -		IN 3b	6	
1	B4	CH4 -		-IN 4a	7	
1	A3	CH5 –		- IN 4b	8	
1	B3	CH6 -				
1	A2	CH7 -		IN 5a	9	
1	B2	0 Vdc -		IN 5b	10	
1	A1	CH8 –		-IN 6a	11	
1	B1	nc	,	IN 6b	12	
				-IN 7a	13	
				lN 7b	14	
	IN 8a 15					
	↓ / / IN 8b 16					
nc = not d	nc = not connected					

Figure 6 Connections diagram



Technical data	The FTA-T-07 module has the following specifications:		
General	Type number:	FTA-T-07	
	Approvals:	CE, TÜV, UL	
Input	Number of input channels:	8	
	Input voltage:	115 Vac, ± 15%	
	Input frequency:	50-60 Hz	
	Input current:	< 16 mA at 115 Vac	
	Input LOW:	$I \leq 1 \text{ mA}$ (see 'Field cable length' section in this data sheet)	
Physical	Module dimensions:	195 x 70 x 48 mm (L x W x H) 7.68 x 2.76 x 1.89 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	196 mm (7.72 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	– strip length	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	

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FTA-T-08

Fail-safe digital output (relay contact) FTA (4 channels)

DescriptionThe FTA-T-08 module has four fail-safe potential-free relay contact
(NO) output channels, created by two different relays connected in
series. These relays are capable of driving a wide variety of loads
including 115/230 Vac, which gives the FSC system a fail-safe
115/230 Vac output capability.
The energized state of the relay is indicated by an LED on the module.

Four channels can be connected to the FTA-T-08 module via a system interconnection cable (SIC). This cable is plugged into the SIC connectors on the FTA module. The SIC connector is marked '1A' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout



Each channel consists of:

- two relays of different manufacturers,
- a fused NO field contact (3.15 AT), and
- a status indicator LED.

The module has a common readback circuit for all four channels, which is closed if all relays are functioning correctly. If the readback circuit is opened, this indicates that one of the relays of the FTA is faulty.



Applications

For details on applications and connection options for the FTA-T-08 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-08 module is as follows:

CONNECTIONS DIAGRAM FTA-T-08						
SIC connector				Field termin	als	
Connector	Pin number	Signals		Signals	Terminal number	
				 Readback 1 	1	
				 Readback 2 	2	
			ALL FUSES 3.15 AT			
1	A5	CH1+ -		–OUT 1a	11	
1	B5	CH1		-OUT 1b (fused)	12	
1	A4	CH2+ -		-OUT 2a (fused)	21	
1	B4	CH2	¥	-OUT 2b	22	
1	A3	CH3+ –		– OUT 3a	31	
1	B3	CH3- –		-OUT 3b (fused)	32	
1	A2	CH4+ –		-OUT 4a (fused)	41	
1	B2	CH4		–OUT 4b	42	
1	A1	nc				
1	B1	nc				
nc = not connected						

Figure 3 Connections diagram

Technical data The FTA-T-08 module has the following specifications:

General	Type number:	FTA-T-08
	Approvals:	CE, TÜV, UL
Input	Nominal input voltage:	24 V
	Max. input voltage:	31 V
	Relay cut-in voltage:	19 V
	Input current:	typically 50 mA at 24 V
Output	Number of output channels:	4
	Max. output current:	3.15 A
	Min. output current:	400 mA at 24 Vdc
	Max. output voltage:	250 Vac / 150 Vdc
	Max. output load:	800 VA / 150 W



Technical data (continued)

Fuses	Rating:	3.15 AT (slow-acting)
	Dimensions:	5 x 20 mm (0.2 x 0.78 in) or
		5 x 25 mm (0.2 x 0.98 in)
Dhysical	Madula dimensional	145 - 70 - 65 (L W U)
Physical	Module dimensions:	$145 \times 70 \times 65 \text{ mm} (L \times W \times H)$ 5 71 x 2 76 x 2 56 in (L x W x H)
	DIN EN roile	$5.71 \times 2.70 \times 2.50 \text{ m} (12 \times 30 \text{ m})$ TS22 / TS25 x 7 5
	Din En Tails.	133271333×7.3
	Used ran length:	146 mm (3.73 m)
Termination	Screw terminals:	
	– max. wire diameter	2.5 mm ² (AWG 14)
	– strip length	7 mm (0.28 in)
	 tightening torque 	0.5 Nm (0.37 ft-lb)
Relay contact	Max. current:	5 A
	Max. switched voltage:	250 Vac / 150 Vdc
	Max. switched load:	1250 VA / 150 W
	Max. switched frequency:	20 Hz
	Expected life:	
	– electrical	80,000 switch operations
	– mechanical	5,000,000 switch operations
	Ambient temperature:	-40° C to $+60^{\circ}$ C (-40° F to $+140^{\circ}$ F)
	Contact material:	silver allov
	Contact material.	Shiver unoy

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FTA-T-09Fail-safe passive digital input FTA
(115 Vac/dc, 8 channels)DescriptionThe field termination assembly module FTA-T-09 is an eight-channel
fail-safe input converter module, universal for both 115 Vac and/or
115 Vdc. All inputs are galvanically isolated.
Each channel converts an externally supplied 115 V input signal to a
24 Vdc input signal which can be connected to the 24 Vdc fail-safe
input module 10101/2/1, thus creating a fail-safe 115 V input for the
FSC system.Eight channels can be connected to the FTA-T-09 module via a system
interconnection cable (SIC). This cable is plugged into the SIC
connector on the FTA module. The SIC connector is marked '1A'
(white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout





0 Vac 🔿

0 Vac



When the current through this shunt impedance exceeds the maximum 'LOW' current, the input may be activated by this shunt impedance, thus disabling the input function (by keeping the input activated continuously, i.e. ON). Every AC input will have a maximum 'LOW' current that it can handle.

The maximum allowable cable length depends on the maximum 'LOW' current (e.g. 1.2 mA), the typical cable capacitance (e.g. 120 pF/m), the maximum supply voltage (e.g. 130 Vac) and the supply frequency (e.g. 60 Hz).

The maximum length (in meters) can be calculated using the following formula:

 $L_{max} = \frac{I_{low}}{V_{max} * 2 * \pi * f * C_{typ}}$

where:

 L_{max} = maximum allowable cable length I_{low} = maximum 'LOW' current V_{max} = maximum supply voltage f = supply frequency C_{typ} = typical cable capacitance

As an example, we will calculate the maximum field cable length (in meters) using the values mentioned above:

$$L_{max} = \frac{(1.2*10^{-3})}{130 * 2 * \pi * 60 * (120*10^{-12})} = 204 \text{ m}$$

In this example, the maximum allowable field cable length is 204 meters (223 yards).

Solutions:

The field cable length limit can be eliminated by using field cables with wires that are shielded separately (see Figure 4). The only (relevant) capacitance of the input wire is to the shield (0 Vac or earth) and this will not activate a 'LOW' input. However, this type of cable is rather unusual. Field cables with shielded wire pairs are more commonly used. This allows for two connections methods:

- 1. Use the method of Figure 4 and leave the second wire of each pair unconnected, or
- 2. Connect the second wire of each pair to 0 Vac (see Figure 5). The 115 Vac / 0 Vac supply pair can be used for more than one input.





Figure 4 Field cable with separately shielded wires



Figure 5 Field cable with shielded pairs

In practice, a mix of wiring methods may be used. For example, use a cable with shielded pairs between the control cabinet and a distribution box close to the process. This cable may be long, e.g. 3 km (1.8 mi). Then use a standard (multicore) cable for the connection between the distribution box and the field contact. This cable length is limited to the value calculated using the formula mentioned above.



Connections

The connections diagram of the FTA-T-09 module is as follows:

CONNECTIONS DIAGRAM FTA-T-09					
SIC connector				Field terminals	
Connector	Pin number	Signals		Signals	Terminal number
				-IN 1a	1
				- IN 1b	2
				-IN 2a	3
1	A5	CH1 -		- IN 2b	4
1	B5	CH2 -		-IN 3a	5
1	A4	CH3 -		- IN 3b	6
1	B4	CH4 -		-IN 4a	7
1	A3	CH5 -		- IN 4b	8
1	B3	CH6 -			
1	A2	CH7 -		-IN 5a	9
1	B2	0 Vdc -	─┐ ┝ ── <u>└<i>╎└</i></u> ╞─────	- IN 5b	10
1	A1	CH8 –		-IN 6a	11
1	B1	0 Vdc -	_✦	- IN 6b	12
				-IN 7a	13
			•L <i>IL</i> }	- IN 7b	14
				-IN 8a	15
			└─── ↓ <i>│└↓</i>	- IN 8b	16

Figure 6 Connections diagram



Technical data	The FTA-T-09 module has the following specifications:		
General	Type number:	FTA-T-09	
	Approval:	CE, TÜV	
Input	Number of input channels:	8	
	Input voltage:	115 V, -15% + 30%	
	Input frequency:	DC or 40300 Hz	
	Input current:	7.5 mA (± 1 mA) at 115 V	
	Input impedance:	non-inductive, > 9 kOhm	
	Input LOW:	$U \le 15 V \text{ or}$	
	-	$I \le 1.2 \text{ mA}$ (see 'Field cable length' section in this data sheet)	
Physical	Module dimensions:	180 x 70 x 48 mm (L x W x H) 7.09 x 2.76 x 1.89 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	181 mm (7.13 in)	
Isolation	Isolation input to output:	2 kV	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	– strip length	7 mm (0.28 in)	
	– tightening torque	0.5 Nm (0.37 ft-lb)	

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FTA-T-10

Digital output (relay contact) FTA (8 channels)

Description

The field termination assembly module FTA-T-10 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals). It has eight non-fail-safe potential-free relay contact (NO) outputs. The energized state of the relay is indicated by an LED on the module.

Eight channels can be connected to the FTA-T-10 module via a system interconnection cable (SIC). This cable is plugged into the SIC connector on the FTA module.

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout

Each channel consists of:

- one relay,
- a fused NO field contact (5 AT), and
- a status indicator LED.





ApplicationsFor details on applications and connection options for the FTA-T-10
module refer to the 'SIC to FTA applications' data sheet.

Connections

The connections diagram of the FTA-T-10 module is as follows:

CONNECTIONS DIAGRAM FTA-T-10							
SIC connector				Field terminals			
Connector	Pin number	Signals		Signals	Terminal number		
	ALL FUSES 5 AT						
				-OUT 1a (fused)	1		
				-OUT 1b	2		
				-OUT 2a (fused)	3		
1	A5	CH1 -		-OUT 2b	4		
1	B5	CH2 -		-OUT 3a (fused)	5		
1	A4	CH3 –		–OUT 3b	6		
1	B4	CH4 –		-OUT 4a (fused)	7		
1	A3	CH5 –		–OUT 4b	8		
1	B3	CH6 -					
1	A2	CH7 -		-OUT 5a (fused)	9		
1	B2	0 Vdc -		–OUT 5b	10		
1	A1	CH8 –		-OUT 6a (fused)	11		
1	B1	0 Vdc -	⊢┥ ║ ┥ᢡ_╌╵└	–OUT 6b	12		
				-OUT 7a (fused)	13		
				-OUT 7b	14		
				-OUT 8a (fused)	15		
			└────∳_₩_ᆛ \	-OUT 8b	16		

Figure 3 Connections diagram




Technical data	The FTA-T-10 module has the following specifications:		
General	Type number:	FTA-T-10	
	Approvals:	CE, TÜV;	
		UL approval pending	
Input	Nominal input voltage:	24 Vdc	
	Max. input voltage:	31 Vdc	
	Relay cut-in voltage:	19 Vdc	
	Input current:	typically 27 mA at 24 Vdc	
Output	Number of output channels:	8	
	Max. output current:	5 A	
	Max. output voltage:	250 Vac / 300 Vdc	
	Max. switched load:	2500 VA / 150 W at 30 Vdc (see Figure 4)	
Fuses	Rating:	5 AT (slow-acting)	
	Dimensions	5 x 20 mm (0.20 x 0.79 in)	
Physical	Module dimensions:	190 x 70 x 60 mm (L x W x H) 7.48 x 2.76 x 2.36 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	191 mm (7.52 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	 strip length 	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	
Relay contacts	Max. current:	8 A	
	Max. switched voltage:	250 Vac / 300 Vdc	
	Max. switched load:	4000 VA / 192 W at 24 Vdc (see Figure 4)	
	Max. switching frequency:	20 Hz	
	Expected life:		
	– electrical	100,000 switch operations	
	– mechanical	30,000,000 switch operations	



Technical data (continued)



Figure 4 Maximum DC switched power curve for FTA-T-10 module

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FTA-T-11Fail-safe digital output FTA
(110 Vdc, 8 channels)DescriptionThe field termination assembly module FTA-T-11 is the interface
between the system interconnection cables (SIC) and the external
field wiring (screw terminals).
It was specially developed to meet isolation requirements for higher
voltages in accordance with IEC 1010 (1990), overvoltage category 3
(Table D.12).Eight channels (separated into two groups of four channels) can be
connected to the FTA-T-11 module via system interconnection cables
(SIC). These cables are plugged into the SIC connectors on the FTA
module. The two SIC connectors are marked '1A' and '2A' (white print
on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.





ApplicationsFor details on applications and connection options for the FTA-T-11
module refer to the 'SIC to FTA applications' data sheet.

Connections

The connections diagram of the FTA-T-11 module is as follows:

CONNECTIONS DIAGRAM FTA-T-11					
SI	IC con	nector		Field termin	als
Connector	Pin number	Signals		Signals	Terminal number
1A 1A 1A	A5 B5 A4	CH 1 CH 1+ - CH 2+ -			
1A	B4	CH 2		-OUT 1a	1
1A	A3	CH 3		-OUT 1b	2
1A	B3	CH 3+ -		-OUT 2a	3
1A	A2	CH 4+ -		– OUT 2b	4
1A	B2	CH 4	_	-OUT 3a	5
1A	A1	nc		-OUT 3b	6
1A	B1	nc		- OUT 4a	7
			· · · · · · · · · · · · · · · · · · ·	-OUT 4b	8
2A	A5	CH 5		-OUT 5a	9
2A	B5	CH 5+ -	/ \	– OUT 5b	10
2A	A4	CH 6+ -		–OUT 6a	11
2A	B4	CH 6		-OUT 6b	12
2A	A3	CH 7		-OUT 7a	13
2A	B3	CH 7+ -	/ \	OUT 7b	14
2A	A2	CH 8+ -		-OUT 8a	15
2A	B2	CH 8		-OUT 8b	16
2A	A1	nc			
2A	B1	nc			
nc = not d	connecte	d			

Figure 2 Connections diagram



Technical data	The FTA-T-11 module has the following specifications:		
General	Type number:	FTA-T-11	
	Approvals:	CE, TÜV	
Power	Number of channels:	8 (2 groups of 4)	
	Maximum voltage:	100 Vac / 120 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)	
	Max. continuous current per	2.4	
	channel:	2 A	
Physical	Module dimensions:	130 x 70 x 48 mm (L x W x H)	
		5.12 x 2.76 x 1.89 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	131 mm (5.16 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	– strip length	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	

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FTA-T-12 Isolated passive digital input FTA (8 channels)

Description

The field termination assembly module FTA-T-12 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals). It has eight non-fail-safe isolated 24 Vdc input channels.

Eight channels can be connected to the FTA-T-12 module via a system interconnection cable (SIC). This cable is plugged into the SIC connector on the FTA module.

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.





Figure 1 Mechanical layout

70 mm

 \mathbf{V}





Figure 2 Schematic diagram

ApplicationsFor details on applications and connection options for the FTA-T-12
module refer to the 'SIC to FTA applications' data sheet.

Connections

The connections diagram of the FTA-T-12 module is as follows:

	CONNECTIONS DIAGRAM FTA-T-12				
SI	C con	nector		Field termin	als
Connector	Pin number	Signals		Signals	Terminal number
				– IN 1+	1
				-IN 1-	2
			╷╴╴│	– IN 2+	3
1	A5	CH1 -		IN 2-	4
1	B5	CH2 –	┝────┘ ┝───┐┌┌──╁ぺ─────	– IN 3+	5
1	A4	CH3 -		IN 3-	6
1	B4	CH4 -	──────────────────────────────────────	– IN 4+	7
1	A3	CH5 –		—IN 4-	8
1	B3	CH6 –			
1	A2	CH7 –	──────────────────────────────────────	– IN 5+	9
1	B2	nc		-IN 5-	10
1	A1	CH8 -	╘───┐││	– IN 6+	11
1	B1	+24 Vdc-	┝──┐││└──┼───┘└╯╴ᄽ	IN 6-	12
				– IN 7+	13
				IN 7-	14
				– IN 8+	15
				-IN 8-	16
nc = not c	onnecte	d		P	







Fechnical data	The FTA-T-12 module has the following specifications:		
General	Type number: Approvals:	FTA-T-12 CE, TÜV; UL approval pending	
Input	Number of input channels: Nominal input voltage: Drop-out voltage: Pick-up voltage: Max. input voltage: Reverse polarity protection: Max. reverse voltage: Input current: Max. switching frequency:	8 24 Vdc 2.8 Vdc 17.5 Vdc 47.5 Vdc series diode 300 V typically 9 mA at 24 Vdc 20 Hz	
Output	Output voltage: Output current: Contact material:	0.1 to 36 V 10 μA to 1 A gold-clad silver alloy	
Physical	Module dimensions: DIN EN rails: Used rail length:	150 x 70 x 48 mm (L x W x H) 5.91 x 2.76 x 1.89 in (L x W x H) TS32 / TS35 x 7.5 151 mm	
Termination	Screw terminals: – max. wire diameter – strip length – tightening torque	2.5 mm ² (AWG 14) 7 mm (0.28 in) 0.5 Nm (0.37 ft-lb)	
Isolation	Galvanic isolation: – input to output – input to input	1000 Vac 1000 Vac	

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FTA-T-13 Current-limited digital input FTA (24 Vdc, 16 channels)

Description

The field termination assembly module FTA-T-13 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals). It can be used for interfacing digital input signals from Class I, Division 2 Hazardous Locations.

Sixteen channels (separated into two groups of eight channels with a 250 mA fuse in the common +) can be connected to the FTA-T-13 module via SIC cables. These cables are plugged into the SIC connectors on the FTA module. The two SIC connectors are marked '1A' and '1B' (white print on the board).

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Figure 1 Mechanical layout



ApplicationsFor details on applications and connection options for the FTA-T-13
module refer to the 'SIC to FTA applications' data sheet.

Connections

The connections diagram of the FTA-T-13 module is as follows:

CONNECTIONS DIAGRAM FTA-T-13									
SI	C con	nector						Field termina	ls
Connector	Pin number	Signals						Signals	Terminal number
							R		
			r					CH1+ (via fuse 1)	1
1A	A5	CH1 -						- CH1-	2
1A	B5	CH2 -					┥───	- CH2+ (via fuse 1)	3
1A	A4	CH3 -				- <i>۱</i>		-CH2-	4
1A	B4	CH4 -				ור	┥───	CH3+ (via fuse 1)	5
1A	A3	CH5 -						– CH3-	6
1A	B3	CH6 -			וו		┥───	CH4+ (via fuse 1)	7
1A	A2	CH7 -						- CH4-	8
1A	B2	nc					┥───	CH5+ (via fuse 1)	9
1A	A1	CH8 –						- CH5-	10
1A	B1	+24 Vdc -					┥───	CH6+ (via fuse 1)	11
			0.25 AT					- CH6-	12
							┥───	- CH7+ (via fuse 1)	13
								- CH7-	14
							ч <u> </u>	– CH8+ (via fuse 1)	15
			L				 	– CH8-	16
								CH9+ (via fuse 2)	17
]					- CH9-	18
							┥───	CH10+ (via fuse 2)	19
				Γ				- CH10-	20
							┝────	CH11+ (via fuse 2)	21
1B	A5	CH9 -						-CH11-	22
1B	B5	CH10 -					┝────	- CH12+ (via fuse 2)	23
1B	A4	CH11 -			ſ			- CH12-	24
1B	B4	CH12 -					┝────	- CH13+ (via fuse 2)	25
1B	A3	CH13 -						- CH13-	26
1B	B3	CH14 -			1		┝───	CH14+ (via fuse 2)	27
1B	A2	CH15 -						- CH14-	28
1B	B2	nc					┝───	CH15+ (via fuse 2)	29
1B	A1	CH16 -		L				- CH15-	30
1B	B1	+24 Vdc -					↓	– CH16+ (via fuse 2)	31
			0.25 AT					-CH16-	32
nc = not c	onnecte	d							

Figure 2 Connections diagram





Technical data	The FTA-T-13 module has the following specifications:		
General	Type number: Approvals:	FTA-T-13 CE, TÜV; UL, FM approvals pending	
Input	Number of input channels: Input voltage: Input current:	16 (2 isolated groups of 8) 24 Vdc, $-15\% \dots +30\%$ ≤ 15 mA at 24 Vdc (with a redundant pair of fail-safe digital input modules 10101/2/1 as load) ≤ 100 mA at 24 Vda +20%	
Termination	Screw terminals: – max. wire diameter – strip length – tightening torque	< 100 mA at 24 Vdc +50% 2.5 mm ² (AWG 14) 7 mm (0.28 in) 0.5 Nm (0.37 ft-lb)	
Physical	Module dimensions: DIN EN rails: Used rail length:	170 x 70 x 60 mm (L x W x H) 6.69 x 2.76 x 2.36 in (L x W x H) TS32 / TS35 x 7.5 171 mm	
Field signal specifications	Max. closed loop resistance: Min. open loop resistance: HYDROGEN (Group A & B) – max. loop inductance – max. loop capacitance NON-HYDROGEN (Group C – max. loop inductance – max. loop capacitance	250 Ohm 15 kOhm): 8 mH 0.3 μF C & D): 22 mH 7 μF	

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FTA-T-14

Description

Fail-safe 0(4)-20 mA analog input FTA (16 channels)

The field termination assembly module FTA-T-14 is the interface between field components (sensors, etc.) and the fail-safe highdensity analog input module 10105/2/1 in the FSC system. It can be used for interfacing signals from Class I, Division 2 Hazardous Locations.

The FTA-T-14 module has sixteen analog input channels which may be used for both safety-related and non-safety-related applications. These sixteen channels (separated into two groups of eight channels with common 0 V) are connected to the FTA-T-14 module via a system interconnection cable (SIC), which is plugged into the SIC connector on the FTA module.

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connection of power supply, ground and field wiring.



Figure 1 Mechanical layout



Main functions	The FTA-T-14 module has three main functions:				
	• linear direct conversion of 0(4)-20 mA DC field signals to the signal levels of the fail-safe high-density analog input module 10105/2/1,				
	• power supply distribution to each transmitter with voltage-current limitation in compliance with Hazardous Area Class I Division 2, and				
	• enable monitoring of the external power connected to the FTA-T-14 module.				
Linear direct conversion	The input circuit of each channel consists of a high-precision resistor which converts the input current (0 to 20 mA) to the input voltage for the high-density analog input module $10105/2/1$. The power to the				

the high-density analog input module 10105/2/1. The power to the analog transmitter is supplied via a series resistor. Each analog signal has its own terminal for the field cable shield.

Figure 2 below shows the schematic diagram for connecting a transmitter (active and passive).



"Active transmitter"



Figure 2 Schematic diagram for connecting a transmitter

Class I Division 2 The FTA-T-14 module may be used in areas with Class I, Division 2 applications. The external output voltage (V+) is current-limited by means of a series resistor.



Transmitter voltage





Figure 3 Transmitter voltage for passive transmitters

External power	If all inputs are active, no external power is required.			
	For loops which contain passive transmitters, analog process data is only available if the supply voltage to the electronics is guaranteed. The high-density analog input concept (using FTA-T-14/15 modules) offers full monitoring of power that is provided externally. If DC/DC converter modules FTA-T-15 are used, even redundant power supplies are covered.			
	External power can be connected to the FTA-T-14 module via one or both of the two screw terminal pairs marked '1A', '1B', '2A' and '2B'. The screw terminal pairs are interconnected on the FTA module. The sixteen channels on the FTA module are divided into two groups of eight channels, with each group being protected by a 315 mA fuse. Single-channel errors (shorts from V+ to 0 V) cannot blow the group fuse.			
	Note: The 0 V connection of the external power is directly connected to the common 0 V of all sixteen analog inputs.			
	The FSC software can monitor the external power voltage via the fail-safe high-density analog input module 10105/2/1.			



Figure 4 below shows the schematic diagram for power distribution with monitoring.







Connections	diagram
-------------	---------



Figure 5 Connections diagram

Honeywell



Technical data	The FTA-T-14 module has the following specifications:		
General	Type number:	FTA-T-14	
	Approvals:	CE;	
		UL, FM, TÜV approvals pending	
Input	Number of input channels:	16 (2 groups of 8 with common 0 V)	
	Power requirements:	30 Vdc external 3 mA (without input loop loads)	
	Input current:	0 to 25 mA	
	Input resistance:	250 Ohm (± 1%)	
Output	To passive transmitters (Vex	.t):	
	 output resistance: 	270 Ohm (± 5%)	
	 igniting current per channel: 	< 120 mA at 30 Vdc	
	To 10105/2/1 module:		
	 – output voltage 	0 to 4 Vdc	
Fuses	Rating:	315 mAT (slow-acting)	
	Dimensions:	5 x 20 mm (0.20 x 0.79 in)	
Physical	Module dimensions:	200 x 70 x 60 mm (L x W x H)	
		7.87 x 2.76 x 2.36 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	201 mm (7.91 in)	
Termination	Screw terminals:		
	- max. wire diameter	2.5 mm ² (AWG 14)	
	 strip length 	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	
Field signal	HYDROGEN (Group A & E	3):	
specifications	- max. loop inductance	6 mH	
	- max. loop capacitance	0.25 μF	
	NON-HYDROGEN (Group	C & D):	
	- max. loop inductance	20 mH	
	- max. loop capacitance	5 μF	



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FTA-T-15 24 Vdc to 30 Vdc/1 A converter

Description

The FTA-T-15 module is a DC/DC converter, which is used to provide an isolated 30 Vdc / 1 A to other field termination assemblies (FTAs), e.g. the analog input FTA module FTA-T-14 or the active analog input FTA module FTA-T-16. It has voltage monitoring capabilities with local LED indication and also provides alarm functions (readback relay contact). The LED is on and the relay contact is closed if the local DC/DC output voltage is OK.





Applications	For details on appli module refer to the	ications and connection options for the FTA-T-15 s'SIC to FTA applications' data sheet.	
Connections	The FTA-T-15 module has four screw terminals for connection of incoming power wires and the readback wiring. The screw terminals are numbered 1 to 4. The function of each terminal is listed below:		
	Screw terminal	Function	
	1	Readback contact	
	2	Readback contact	

 2
 Readback co.

 3
 24 Vdc IN +

 4
 24 Vdc IN

Note:

Removal or connection of the 24 Vdc IN+ and/or 24 Vdc INwire(s) is only allowed when the 24 Vdc power supply to the FTA-T-15 module has been switched off.

The FTA-T-15 module has twelve screw terminals for connection of outgoing power wires. The screw terminals are numbered '1A', '1B', '2A', etc. to '6B'. The function of each terminal is listed below:

Screw terminal	Function
1A	30 Vdc OUT
1B	0 Vdc OUT
2A	30 Vdc OUT
2B	0 Vdc OUT
3A	30 Vdc OUT
3B	0 Vdc OUT
4A	30 Vdc OUT
4B	0 Vdc OUT
5A	30 Vdc OUT
5B	0 Vdc OUT
6A	30 Vdc OUT
6B	0 Vdc OUT





Technical data	The FTA-T-15 module has the following specifications:		
General	Type number:	FTA-T-15	
	Approvals:	CE, UL, TÜV approvals pending	
	Safety class:	AK1-6	
	MTBF:	approx. 400,000 hours	
Input	Nominal input voltage:	24 Vdc	
	Input voltage range:	18 to 36 Vdc	
	Inrush current:	\leq 4 A (see note below)	
Output	Output voltage:	$30 \text{ Vdc}, \pm 0.25 \text{ V}$	
	Output current:	1 A (short-circuit proof)	
	Short-circuit current:	< 3.3 A	
	Ripple (0-30 MHz):	< 0.1 Vrms	
	Regulation:	< 1% (load + line)	
	Transient response:	class C according to NFC42801C	
	Power-on overshoot:	output \leq 31 V	
	Long-term stability (after	-	
	30 min. operation):	< 0.3%	
	Efficiency:	>75%	
	Switching frequency:	> 25 kHz	
Physical	Module dimensions:	150 x 70 x 62.3 mm (L x W x H) 5.91 x 2.76 x 2.45 in (L x W x H)	
	DIN EN rails:	TS32 / TS35 x 7.5	
	Used rail length:	151 mm (5.94 in)	
Fuse	Rating:	3.15 AT (slow-acting)	
	Dimensions:	5 x 20 mm (0.2 x 0.79 in)	
	Note:		

The inrush current limiter is only active at power-on. To regain the inrush current limiting function, the FTA-T-15 module must be switched off for at least 30 seconds. Switching on the module within 30 seconds may blow a fuse or activate a circuit breaker.



Technical data (continued)

Termination	nination Screw terminals:	
	– max. wire diameter	2.5 mm ² (AWG 14)
	 strip length 	7 mm (0.28 in)
	 tightening torque 	0.5 Nm (0.37 ft-lb)
Isolation	Isolation voltage:	
	 input to output 	2000 Vac (1 min.)
	 input to relay contact 	2000 Vac (1 min.)
	- output to relay contact	2000 Vac (1 min.)
Environment	Operating temperature:	-5°C to +70°C (23°F to 158°F)
	Storage temperature:	-40° C to $+85^{\circ}$ C (-40° F to $+185^{\circ}$ F)
	Cooling:	natural convection
Alarm		
functions	Restart overvoltage	dual, two-fault-tolerant
	protection:	only after removal of 24 Vdc power
	Undervoltage detector:	LED on if voltage OK, readback relay contact closed if voltage OK
	Undervoltage level:	typically 27.5 Vdc
Readback	Relay contact rating:	36 Vdc / 40 mA, 30 Vac / 40 mA

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FTA-T-16 Fail

Fail-safe active digital input FTA with line-monitoring (16 channels)

Description The field termination assembly module FTA-T-16 is the interface between field components (sensors, etc.) and the fail-safe high-density analog input module 10105/2/1 in the FSC system. It can be used for interfacing signals from Class I, Division 2 Hazardous Locations.

The FTA-T-16 module has sixteen digital input channels which may be used for both safety-related and non-safety-related applications. These sixteen channels are connected to the FTA-T-16 module via a system interconnection cable (SIC), which is plugged into the SIC connector on the FTA module.

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connection of power supply and field wiring.



Figure 1 Mechanical layout



Main functions The FTA-T-16 module has three main functions:

- loop-monitored input function,
- power supply to each transmitter with voltage-current limitation in compliance with Hazardous Area Class I Division 2, and
- enable monitoring of the external power connected to the FTA-T-16 module.

Loop-monitored input The FTA-T-16 module supports a loop-monitored input function for serial and parallel field resistor or digital sensor contact configurations. Figure 2 below shows the schematic diagrams for connecting serial and parallel resistor configurations.



Figure 2 Schematic diagrams for connecting serial and parallel resistor configurations

In these configurations, R_A is 1.0 kOhm and R_B is 3.3 kOhm or 10 kOhm (± 10%). The maximum field wire resistance is 500 Ohm.

Monitoring of external
powerExternal power can be connected to the FTA-T-16 module via one or
both of the two screw terminal pairs marked '1A', '1B', '2A' and '2B'.
The screw terminal pairs are interconnected on the FTA module.

The FSC software can monitor the external power voltage via the analog input module.



Figure 3 below shows the schematic diagram for power distribution with monitoring.



Figure 3 Schematic diagram for power distribution with monitoring

Applications	For details on applications and connection options for the FTA-T-1	
	module refer to the 'SIC to FTA applications' data sheet.	

Connections

External power

The external supply voltage (Vext) is connected to the following screw terminals (marked '1A', '1B', '2A' and '2B' on the FTA):

Screw terminal	Function
1A	30 Vdc Vext
1B	0 Vdc Vext
2A	30 Vdc Vext
2B	0 Vdc Vext



Connections diagram The FTA-T-16 module has 32 screw terminals for connection of field wiring. The screw terminals are numbered 1 to 32. The connections diagram of the FTA-T-16 module is as follows:

CONNECTION DIAGRAM FTA-T-16					
SIC connector		ector		Field ter	minals
Connector	Pin number	Signals		Signals	Terminal number
30 Vdc e	ext.				
2A +				- CH1+	1
2B -				- CH1-	2
				– CH2+	3
				– CH2-	4
				– CH3+	5
				– CH3-	6
				- CH4+	7
1	A10	0 Vdc -		– CH4-	8
1	B10	0 Vdc -		– CH5+	9
1	A9	CH1 -		- CH5-	10
1	B9	CH2 -		- CH6+	11
1	A8	CH3 -		– CH6-	12
1	B8	CH4 -		- CH7+	13
1	A7	CH5 -		– CH7-	14
1	B7	CH6 -		- CH8+	15
1	A6	CH7 -	↓ ↓ ♦ ♀	– CH8-	16
1	B6	CH8 -			
1	A5	CH9 -			
1	B5	CH10 -		- CH9+	17
1	A4	CH11 -		– CH9-	18
1	B4	CH12 -		- CH10+	19
1	A3	CH13 -		- CH10-	20
1	B3	CH14 -		- CH11+	21
1	A2	CH15 -		- CH11-	22
1	B2	CH16 -		- CH12+	23
1	A1	0 Vdc -		- CH12-	24
1	B1	+Vext/8 -	──╇─┐ │││└───┼┼── _त ═┵	- CH13+	25
				- CH13-	26
				- CH14+	27
				- CH14-	28
				- CH15+	29
30 Vdc e	ext.			- CH15-	30
				- CH16+	31
2B -			∳	- CH16-	32

Figure 4 Connections diagram



Technical data	The FTA-T-16 module has the following specifications:		
General	Type number: Approvals:	FTA-T-16 CE;	
	11	UL, FM, TÜV approvals pending	
Input	Number of input channels:	16	
	Power requirements:	30 Vdc external 150 mA (all inputs closed)	
	Max. current per channel:	< 12 mA at 30 Vdc	
Output	To passive transmitters (Vex	xt):	
	– open voltage	typically 24 Vdc	
	To 10105/2/1 module:		
	 output voltage 	0 to 3.5 Vdc	
Physical	Module dimensions:	110 x 70 x 60 mm (L x W x H)	
	DIN EN roile	4.55 X 2.70 X 2.50 Ш (L X W X П) TS22 / TS25 x 7 5	
	Used rail length:	111 mm (4.37 in)	
Termination	Screw terminals:		
	– max. wire diameter	2.5 mm ² (AWG 14)	
	 strip length 	7 mm (0.28 in)	
	 tightening torque 	0.5 Nm (0.37 ft-lb)	
Field signal	Field wire resistance:	< 500 Ohm	
specifications	Field device resistance (see Figure 2):		
	$- R_A$	1k0 (serial or parallel), $\pm 10\%$	
	$-R_{\rm B}$	$3k3 / 10k$ (serial or parallel), $\pm 10\%$	
	HYDROGEN (Group A & B):		
	- max. loop inductance	500 mH	
	- max. loop capacitance	0.3 μF	
	NON-HYDROGEN (Group	C & D):	
	- max. loop inductance	1 H	
	- max. loop capacitance	7 μF	



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FTA-T-17 Digital output (relay) FTA for AK5/6 applications (4 channels)

Description The field termination assembly module FTA-T-17 is the interface between the system interconnection cables (SICs) and the external field wiring (screw terminals). It has four relay-based potential-free output channels suitable for applications up to AK6 without making use of fault exclusions.

The FTA-T-17 module complies with safety requirements for general use in safety requirement classes AK5/6 as defined in DIN V 19250.

Each channel consists of:

- three relays,
- a fused NO field contact (5 AT, slow-acting), and
- a status indication LED.

The relays are capable of driving a wide variety of loads including 115/230 Vac, which gives the FSC system a 115/230 Vac output capability for AK5/6 applications. The energized state of the relay is indicated by an LED on the module.



Figure 1 Mechanical layout



Four channels can be connected to the FTA-T-17 module via a system interconnection cable (SIC). This cable is plugged into the SIC connector on the FTA module.

The FTA module has a universal snap-in facility for standard DIN EN rails, and screw terminals for connecting field wiring.



Applications

For details on applications and connection options for the FTA-T-17 module refer to the 'SIC to FTA applications' data sheet.



Connections

The connections diagram of the FTA-T-17 module is as follows:

CONNECTIONS DIAGRAM FTA-T-17					
SI	SIC connector		Field terminals		
Connector	Pin number	Signals		Signals	Terminal number
	ALL FUSES 5 AT				
1	A5	CH1+ -		-OUT 1a	1
1	B5	CH1	· ·	-OUT 1b (fused)	2
1	A4	CH2+ -		– OUT 2a	3
1	B4	CH2	¥Ţ/	-OUT 2b (fused)	4
1	A3	CH3+ -		– OUT 3a	5
1	B3	CH3		-OUT 3b (fused)	6
1	A2	CH4+ -		–OUT 4a	7
1	B2	CH4		-OUT 4b (fused)	8
1	A1	nc			
1	B1	nc			
nc = not connected					

Figure 3 Connections diagram

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Technical data	The FTA-T-17 module has the following specifications:	
General	Type number:	FTA-T-17
	Approvals:	CE;
		UL, FM, TÜV approvals pending
	Safety class:	AK1-6
Input	Nominal input voltage:	24 Vdc
	Max. input voltage:	36 Vdc
	Relay pick-up voltage:	19.2 Vdc
	Input current:	typically 35 mA at 24 Vdc
Output	Number of output channels:	4
	Max. output current:	5 A
	Min. output current:	1 mA at 5 V
	Max. output voltage:	250 Vac / 250 Vdc
	Max. switched load:	1250 VA / 150 W (see Figure 4)
Fuses	Rating:	5 AT (slow-acting)
	Dimensions:	5 x 20 mm (0.2 x 0.78 in)
Physical	Module dimensions:	160 x 70 x 60 mm (L x W x H) 6.30 x 2.76 x 2.36 in (L x W x H)
	DIN EN rails:	TS32 / TS35 x 7.5
	Used rail length:	161 mm (6.34 in)
Termination	Screw terminals:	
	– max. wire diameter:	2.5 mm ² (AWG 14)
	– strip length:	7 mm (0.28 in)
	 tightening torque 	0.5 Nm (0.37 ft-lb)
Environment	Ambient temperature:	-5°C to +60°C (23°F to 140°F)
Isolation	Isolation:	
	- coil to contact	3750 Vac
	 – contact to contact 	1200 Vac




Technical data (continued)

Relay contact	Max. current:	8 A
	Max. switched voltage:	250 Vac / 250 Vdc
	Max. switched load:	2000 VA / 150 W
	Max. switch frequency:	20 Hz
	Expected life:	
	– electrical	100,000 switch operations
	– mechanical	10,000,000 switch operations
	Contact material:	gold flash over silver alloy



Figure 4 Maximum switched power

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