

Safety Manager  
**Hardware Reference**

EP-SM.MAN.6284

Issue 1.0

20 February 2013

**Release 151**

15 – Field Termination Assembly modules

<b>FTA (continued)</b>		<b>see</b>
TDOL-0724P	Line-monitored relay contact digital output (7 channels, 24Vdc)	page 593
TDOL-0724U	Line-monitored relay contact digital output (7 channels, 24Vdc, RUSIO)	page 604
TDOL-07120	Line-monitored relay contact digital output (7 channels, 120Vac/120Vdc)	page 615
TSDO-0424	Safe digital output FTA (24 Vdc, 4 channels)	page 627
TSDO-04UNI	Safe digital output FTA (24/48/110 Vdc, 4 channels)	page 630
TSDOL-0424C	Conformal-coated safe digital output FTA, current limited, loop monitored (24 Vdc, 4 channels)	page 633
TDO-1624	Non-safe digital output FTA (24 Vdc, 16 channels)	page 638
TSRO-0824	Safe dry digital output FTA for SIL3 applications (8 channels)	page 641
TRO-0824	Non-safe dry digital output FTA (8 channels, NO/NC)	page 651
TRO-1024	Non-safe dry digital output (relay contact) FTA (10 channels)	page 656
TSAO-0220m	Safe analog output FTA (0(4)-20 mA, 2 channels)	page 659
TSAOH-0220m	Safe analog output FTA with HART interface (0-20mA, 2 channels)	page 662
<b>Special FTAs</b>		
TPSU-2430	24 Vdc to 30 Vdc / 1 A converter	page 667
TSPKUNI-1624	Sub-D to Powered Knife terminals FTA (Universal, 16ch)	page 671
DCOM-232/485	RS232/485 communication FTA	page 675
SDW-550 EC	5 port HSE communication FTA or "switch"	page 681
MTL 24571	Single channel ethernet surge protector	page 687
<b>Remote IO termination assemblies</b>		
IOTA-R24	Redundant IO Termination Assembly	page 690
IOTA-NR24	Non-redundant IO Termination Assembly	page 700

**Table 72** possible FTA - IO module combinations (continued)

FTA module	Input module	Output module	Remarks
TDOL-07120	SDI-1624	SDO-0824	both modules are required
TSDO-0424		SDO-0424	
TSDO-04UNI		SDO-0448 SDO-04110 SDOL-0424 SDOL-0448	
TSDOL-0424C		SDOL-0424	
TDO-1624		DO-1624 DO-1224	
TSRO-0824		SDO-0824	floating, non commoned, output contacts
TSRO-08UNI		SDO-0824	1 common for output contacts
TRO-0824		SDO-0824	
TRO-1024		RO-1024	
TSAO-0220m		SAO-0220m	
TSAOH-0220m		SAO-0220m	with HART connection
TPSU-2430			30 Vdc supply for other FTAs

**Table 73** possible FTA-CP module combinations

FTA module	CP module	Remarks
DCOM-232/485	USI-0001 or USI-0002	Combined RS232/485 communication interface
SDW-550 EC	USI-0001 or USI-0002	5 port HSE communication FTA or "switch"

# TSAO-0220m

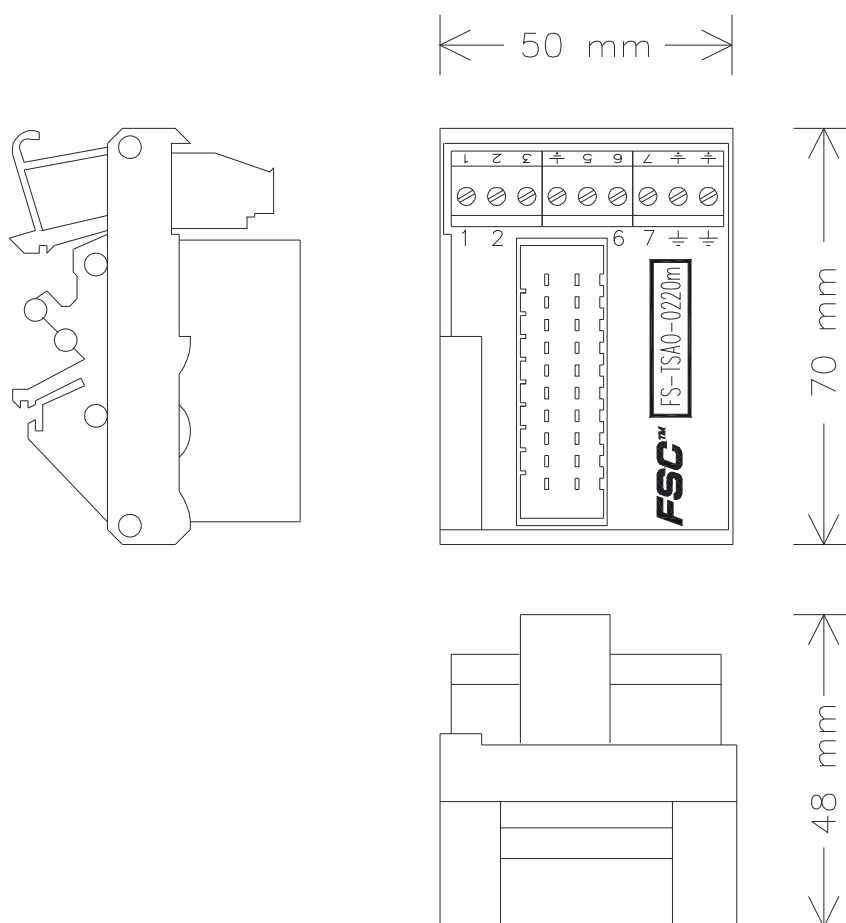
Safe analog output FTA (0(4)-20 mA, 2 channels)

## Description

Field termination assembly module TSAO-0220m is the interface between system interconnection cable SICC-0001/Lx and external field wiring (screw terminals). The two channels of an TSAO-0220m module can be connected to a (redundant pair of) SAO-0220m module(s) with the system interconnection cable SICC-0001/Lx.

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

Figure 411 Mechanical layout



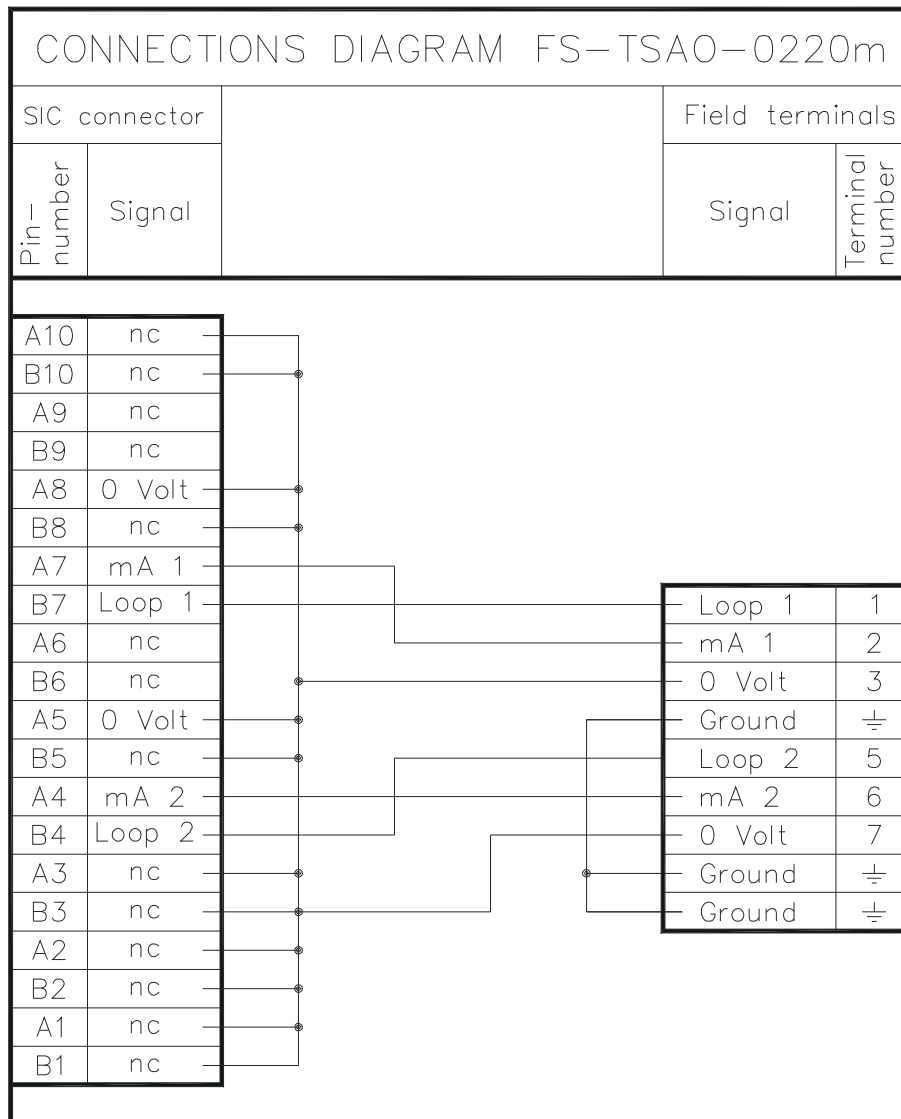
## Applications

For details on applications and connection options for TSAO-0220m, see “SICC-0001/Lx” on page 715.

## Connections

The connections diagram of the TSAO-0220m module is as follows:

**Figure 412** Connections diagram



## Technical data

The TSAO-0220m module has the following specifications:

<b>General</b>	Type numbers <sup>1</sup> :	FS-TSAO-0220m
		FC-TSAO-0220m
	Approvals:	CE, TUV, UL, CSA, FM
<b>Power</b>	Number of channels:	2
	Maximum voltage:	40 Vdc – IEC 1010 (1990), overvoltage category 3 (Table D.12)
	Maximum continuous current per channel:	25 mA
<b>Physical</b>	Module dimensions:	50 × 70 × 48 mm (LxWxH) 1.97 × 2.76 × 1.89 in (LxWxH)
	DIN EN rails:	TS32 / TS35 × 7.5
	Used rail length:	51 mm (2.01 in)
<b>Termination</b>	Screw terminals:	
	• Max. wire diameter	2.5 mm <sup>2</sup> (AWG 14)
	• Strip length	7 mm (0.28 in)
	• Tightening torque	0.5 Nm (0.37 ft.-lb.)

- 1 FS-type modules are non conformal coated modules.  
FC-type modules are conformal coated modules. Conformal coated modules have the letters "CC" preceding the version number.