

Trusted TMR I/O SmartSlot Slot Cables

Product Overview

This document provides detailed information for the types of Trusted® input/output (I/O) Cables available within the SmartSlot group. These types of cable provide connection facilities between the Trusted analogue and digital input/output modules, and Trusted Field Termination Assemblies (FTAs) or Trusted Versatile Field Termination Assemblies (VFTAs) as required. Cables are also available with a 'flying lead' at one end to allow connection to conditioned terminals.

The types of Trusted I/O SmartSlot Cables currently available are listed in Table 1 on page 4.

The cables are manufactured to user's requirements, therefore length and type of cable insulation must be specified. Length must be specified to the nearest 0.5 m in the format xmx, e.g. 2m0 for a cable length of 2.0 m. This detail must be added to the end of the part number. Note that some cable lengths are preferred options and may be easier to obtain; refer to Rockwell Automation for details. The type of cable insulation forms part of the cable part number and is denoted by 02 for Low Smoke Zero Halogen (LSZH) or 03 for UL Certified cable material. 02 is also flame retardant to IEC 60332-3 Cat A. When ordering cables, it is recommended that the user supplies the details as shown in Table 1.

The maximum recommended I/O cable length is 15 m. Cables longer than this may be specified if necessary but may suffer from voltage drop, offset, crosstalk and noise and will present materials handling problems.

Internal cables are designed for cables where they are terminated in adjacent enclosures. If the cable needs to leave the enclosure environment, the external cable has more protection. Note that the 'external' cables are not armoured and are not suitable for truly external use and must still be treated with care. These cables will need protection when drawn through a cable route, and should also not be pulled by the connector(s). They should enter cabinets through transit/compression blocks and cannot be glanded.

The SmartSlot cables described in this document allow hot-swap modules to be sited in separated slots as required, linked with a SmartSlot jumper cable. For Companion Slot cables, allowing hot-swap modules to be sited in adjacent slots using a double width chassis socket, refer to Trusted I/O Companion Slot Cables, publication [ICSTT-RM311](#) (PD-TC200).

1. SmartSlot Cable Types and Selection Guides

The types of Trusted I/O SmartSlot Cables currently available are listed in Table 1 below

Cable Type	Description
TC-501-02-xmx	I/O SmartSlot V2 Internal 40 Channel Input to FTA
TC-501-03-xmx	I/O SmartSlot V2 Internal 40 Channel Input to FTA (UL)
TC-502-02-xmx	I/O SmartSlot V2 Internal 40 Channel Input to Flying Lead / Free Wire
TC-502-03-xmx	I/O SmartSlot V2 Internal 40 Channel Input to Flying Lead / Free Wire (UL)
TC-503-02-xmx	I/O SmartSlot V2 External 40 Channel Input to FTA
TC-503-03-xmx	I/O SmartSlot V2 External 40 Channel Input to FTA (UL)
TC-504-02-xmx	I/O SmartSlot V2 External 40 Channel Input to Flying Lead / Free Wire
TC-504-03-xmx	I/O SmartSlot V2 External 40 Channel Input to Flying Lead / Free Wire (UL)
TC-505-02-xmx	I/O SmartSlot V2 Internal 40 Channel Output to FTA
TC-505-03-xmx	I/O SmartSlot V2 Internal 40 Channel Output to FTA (UL)
TC-506-02-xmx	I/O SmartSlot V2 Internal 40 Channel Output to Flying Lead / Free Wire
TC-506-03-xmx	I/O SmartSlot V2 Internal 40 Channel Output to Flying Lead / Free Wire (UL)
TC-507-02-xmx	I/O SmartSlot V2 External 40 Channel Output to FTA
TC-507-03-xmx	I/O SmartSlot V2 External 40 Channel Output to FTA (UL)
TC-508-02-xmx	I/O SmartSlot V2 External 40 Channel Output to Flying Lead / Free Wire
TC-508-03-xmx	I/O SmartSlot V2 External 40 Channel Output to Flying Lead / Free Wire (UL)
TC-509-02-xmx	I/O SmartSlot V2 Internal 40 Channel Output to VFTA
TC-509-03-xmx	I/O SmartSlot V2 Internal 40 Channel Output to VFTA (UL)
TC-510-02-xmx	I/O SmartSlot V2 External 40 Channel Output to VFTA
TC-510-03-xmx	I/O SmartSlot V2 External 40 Channel Output to VFTA (UL)
TC-511-02-xmx	I/O SmartSlot V2 Internal 40 Channel Input to VFTA

INTERNAL	SMARTSLOT	INPUT		FTA	TC-501-
				VFTA	TC-511-
				Flying Lead	TC-502-
		OUTPUT		FTA	TC-505-
				VFTA	TC-509-
				Flying Lead	TC-506-
	COMPANION SLOT	INPUT	Integral Power	Flying Lead	TC-516-
				FTA	TC-201-
				VFTA	TC-211-
				Flying Lead	TC-202-
		OUTPUT		FTA	TC-205-
				VFTA	TC-209-
				Flying Lead	TC-206-
EXTERNAL	SMARTSLOT	INPUT		FTA	TC-503-
				VFTA	TC-512-
				Flying Lead	TC-504-
		OUTPUT		FTA	TC-507-
				VFTA	TC-510-
				Flying Lead	TC-508-
	COMPANION SLOT	INPUT	Integral Power	FTA	TC-517-
				Flying Lead	TC-518-
				FTA	TC-203-
				VFTA	TC-212-
				Flying Lead	TC-204-
		OUTPUT		FTA	TC-207-
				VFTA	TC-210-
				Flying Lead	TC-208-
			Integral Power	Flying Lead	TC-218-

Table 2 TMR 40 Channel Standard Cable Selection Guide

6. I/O SmartSlot Cable Type TC-505

This type of cable, and the modules/FTAs it is used with, is shown in Figure 5 below.

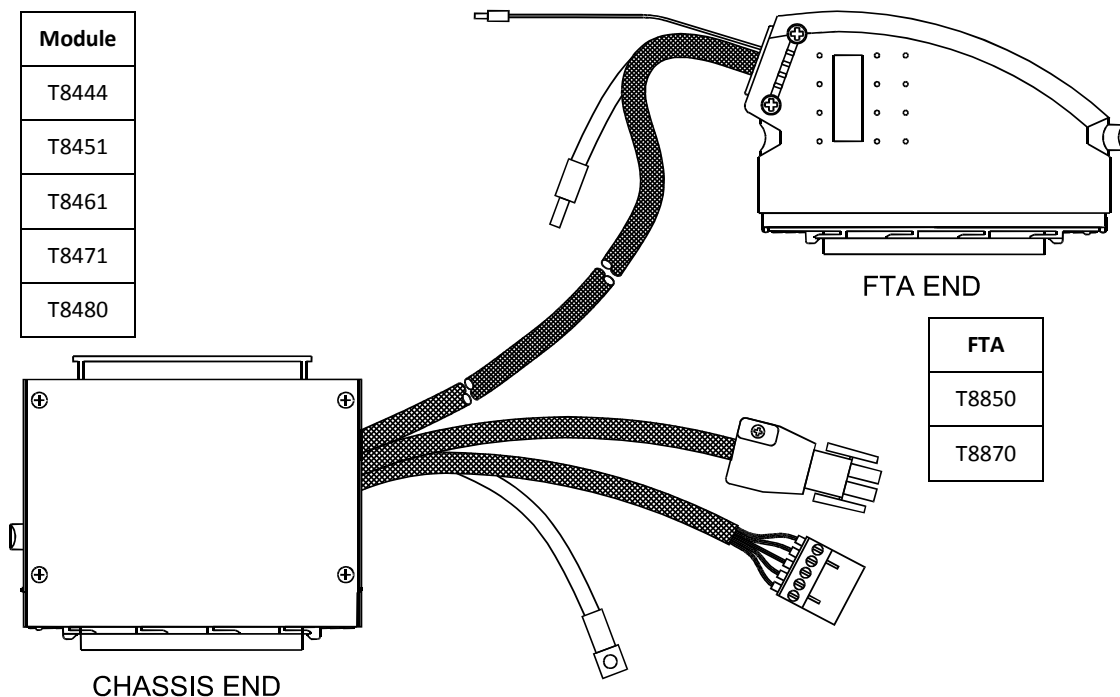


Figure 5 I/O SmartSlot Cable Type TC-505

This type of Trusted I/O SmartSlot Cable is designed for use with digital 24 V/120 Vdc or analogue output modules and is suitable for connecting output signals from the module to an internal FTA.

Three multi-core cables are used for this application. The chassis end of the multi-core cable is fitted with a 96-way type 'C' connector housed in a single-width hood (TC-500). The non-chassis end of multi-core 1 is fitted with a 96-way type 'R' connector housed in a single-width hood enabling connection to an FTA. The non-chassis end of multi-core 2 is fitted with a 5-way Weidmuller BLZF 3.5 series connector enabling the cable to be terminated at a T8290 Output Power Distribution Unit. This cable is used for field power return. The non-chassis end of multi-core 3 is fitted with a 6-way AMP plug used to connect power to the field from a T8290 or T8297 and is made up of five individual 2.5 mm wires contained within Rilgain sleeving.

The 0 V connection at the chassis end allows a module reference so that it can measure its output voltage, this must be connected to the field 0 Volts.

The FTA contains isolated power group field 0 Volts which connect to field 0 V supply. Commoning of the reference is obtained by a connection between this field supply and the T8290 Output power distribution unit (TB1 pins 1 and 2).

Multi-core 1 is stripped back 1.5 m at both ends. Multi-cores 1, 2 and 3 are shrouded in nylon Rilgain sheathing. The ends of the sheathing are heated, or over sleeved as required to help prevent fraying.

At both the chassis and remote end, a sheathed braid allows the connector hood to be wired to safety earth. At the remote end, the multi-core screen drain is wired to a green wire to allow connection to screen earth.