Product Information: ExTR Reference No. GB.FME.ExTR11.0006-00

Experion Series C input/output chassis-less mounted modules and field level network gateways provide the physical connection between an automation system and the process when used with the C300 Controller. Input/Output Modules and field terminations are combined in the same area. The Input/Output Modules are plugged into Input /Output Termination Assemblies to eliminate the need for a separate chassis to hold the electronics assemblies.

C300 Controller

The C300 Controller is constructed using the Series C form factor that employs an Input Output Termination Assembly (IOTA) and an electronics module which mounts and connects to the IOTA. One C300 Controller contains all of the control functionality and the communications functions with plug-in modules.

The C300 Controller may operate in both non-redundant and redundant configurations. Redundant operation requires a second identical controller and connecting cables, which is the typical configuration. The C300 Controller is connected to the associated I/O hardware by a pair of I/O Link Interface cables

The table below identifies the C300 Controller components and its associated components. TheC300 Controller supports non-redundant and fully redundant operation. Redundancy is built in to the controller, so that just adding another controller and a redundancy cable; a redundant controller pair is achieved.
Note that the 'CC' designation on the model number indicates the printed wiring boards are conformally coated for additional protection from the environment, (CU = uncoated).

Components	Description	Model No.
C300 Controller Module	A distributed process controller and I/O gateway for the Experion system. Module contains printed circuit assemblies, status indicators and a display, inside in a plastic housing. Module mounts to its Input Output Termination Assembly (IOTA). Supply Rating: 0.311A @ 24VDC	CC-PCNT01 CU-PCNT01
C300 Controller Input Output Termination Assembly (IOTA)	Provides the connection point for theC300 Controller module and all cable terminations to the controller, (FTE, IO Link, Redundancy, Battery and Time Source cable terminations). Provides 24Vdc power distribution to the controller module. Supply Rating: 0.311A @ 24VDC Note: The C300 Controller IOTA supports only one controller module.	CC-TCNT01 CU-TCNT01
9 Port FTE Control Firewall Module	Provides FTE distribution to in-cabinet network nodes. (C300 Controllers and Series C Modules) Supply Rating: 0.112A @ 24VDC	CC-PCF901 CU-PCF901
9 Port Control Firewall IOTA	Provides connection for eight FTE cables from in-cabinet controllers and Series CFIMs. The 9th port provides an uplink to the FTE supervisory network. Provides 24Vdc power distribution to the control. Ethernet: 9 RJ-45 Connections Fiber-Optic: Model Ca-FSMx01 FTE Single Mode Fiber Module Supply Rating: 0.30mA@24VDC Model Ca-FMMx01 FTE Multi-Mode Fiber Module Supply Rating: 0.30mA@24VDC	CC-TCF901 CU-TCF901

The Series C modules comprise:

- **Input Output Termination Assembly (IOTA):** An assembly that holds the IOM and the connections for field wiring,
- **Input Output Module (IOM):** A device that contains most of the electronics required to perform a specific I/O function. The IOM plugs onto the IOTA.

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Temperature Multiplexer (64pt):

Provides thermocouple (TC) and resistance temperature device (RTD) inputs. The Multiplexer supports up to four, field proven PMIO FTAs.

Parameter		Specification
Input / Output Model		CC PAIM01, CU PAIM01
PMIO IOTA Models		CC-TAIM01, CU-TAIM01
PMIO FTA Models (1)		CC-TAMR04, CU-TAMT04 CC-TAMR04, CU-TAMT04 MC-TAMR04, MC-TAMT04 MU-TAMR04, MU-TAMT04
Input Type		Thermocouple and / or RTD
Input channels		64 fully-isolated channel-to-channel, channel-to-PM, and channel-to-power supply common in 16 channel increments.
Input scan rate		1 Second fixed by IOM (up to 64 channels/sec max.)
Channel bandwidth		0 to 4.7 Hz (-3 dB)
Nominal input range (TC only)		-20 to +100 millivolts
Maximum normal mode continuous input non-damaging (any thermocouple type configured)		-10 to +10 volts (TC) -1 to +2 Volts @ 100 milliamps (RTD)
Gain error (-20 to +100 millivolt range)		0.050% full scale max
Temperature stability		
	TC, Millivolt inputs	+/-20 ppm per deg C max
	RTD inputs	+/-20 ppm per deg C max
Long term drift		500 ppm
Input impedance		1 megohm at dc (TC only)
CMV with respect to Power System common, dc to 60 Hz		+/-250 VDC or VAC RMS
CMRR, 50 or 60 Hz (with 1000 ohms source impedance max.)		120 dB min
Voltage, channel-to-channel, dc to 60 Hz		+/-250 VDC or VAC RMS
Crosstalk, dc to 60 Hz		80 dB (120 dB at 50 and 60 Hz)
NMRR at 50/ 60 Hz		60 dB min
Line frequency integration		Fixed selection of 50 Hz or 60 Hz
RTD sensor excitation current		1 milliamp
Cold junction compensation range		-20 to +60 deg C (+/-0.5 deg C typical)
TC Linearization Accuracy (2)		± 0.05 Ω / deg C
Open Thermocouple Detection		Each conversion qualified, ≤ 1000 Ω = guaranteed no-trip ≥ 1500 Ω guaranteed trip.
RTD Max Lead Resistance		15 Ω
Surge protection (sensor terminals)		EN 61000-4-5 (for Industrial locations, 1kV line to line, 2kV line to gnd.)
Surge protection (power/serial link with cable adapter option)		EN 61000-4-5 (for Industrial locations, 1kV line to line, 2kV line to gnd.)
Maximum cable distance IOTA to FTA using cable adapter		1000 feet 16 gauge wire, two twisted pair per FTA
Supported types (RTD)		
	Pt: 100 ohm DIN 4376	-180 to +800 deg C
	Pt: 100 ohm JIS C-1604	-180 to +650 deg C
	Ni: 120 ohm ED #7	-45 to +315 deg C
	Cu: 10 ohm SEER	-20 to +250 deg C
Supported thermocouple types		
	ANSI specification **J**	-200 to +1200 deg C
	ANSI specification **K**	-100 to +1370 deg C
	ANSI specification **E**	-200 to +1000 deg C
	ANSI specification **T**	-230 to +400 deg C
	ANSI specification **B**	+100 to +1820 deg C

Parameter		Specification
	ANSI specification **S**	0 to +1700 deg C
	ANSI specification **R**	0 to +1700 deg C
	JAPAN TYPE **R'**	0 to +1770 deg C
Supported millivolt types		-20 to +100 millivolts
FTA dimensions (1)		2.5 D x 4.9 W x 12.1 L (inches) 63.5 D x 124.46 W x 307.34 L (millimeters)
(1) : FTAs are PMIO FTAs. These must be installed in FTA channels. These are similar to but not identical to Series C channels. The TPC will support this configuration. Refer to PM20-660 for FTA power, environmental and approval certifications details not covered in this document. (2): Linearization polynomials are 4th order and based on NIST Monograph 175, ITS90 and JIS C-1602-1995.		

Fieldbus – 4 Nets:

Parameter	Specification	
Input / Output Model	CC-PFB401 – Fieldbus 4 – Nets CU-PFB401 – Fieldbus 4 – Nets	
IOTA Models	CC-TFB402, CU-TFB402	Non Redundant
	CC-TFB412, CU-TFB412	Redundant
Load Voltage	24 VDC	
Load Current	0.196A	
Other Technical Information	Ethernet: 2 RJ-45 Connections (Redundant version contains 4) FF Wiring: 24VDC (external) / 350 mA total	