PACMotion I/O Fiber Terminal Block

The optional Fiber Terminal Block enables PACMotion controller to connect remote I/O over a fiber cable. The Fiber Terminal Block is DIN-rail mounted and can be up to 100 meters away from the PACMotion module. The module is configurable per point for 5 VDC, 24 VDC and analog I/O. The Fiber Terminal Block provides a unique ID that prevents connection to wrong PACMotion modules. The module supports up to 5 incremental encoders without marker or 4 encoders with marker pulse.

IC695FTB001	
Product Name	PACMotion I/O Fiber Terminal Block
Lifecycle Status	Active
Module Type	I/O Terminal Block for PACMotion
Mounting/Dimensions	35 mm DIN-rail (5.56 W x 4.94 H x 2.46 D inches; 141.2 W x 125.5 H x 62.5 D mm)
Interface to PACMotion Module	Fiber Optic Cable. Maximum cable length is 100 meters; Interface uses a unique ID for each PMM/FTB pair to prevent cross-connection.
Power Requirements	19.2 VDC —28.8 VDC; 0.45 Amps @ 24 V
24 V Outputs (differential)	Eight optically isolated; source; open load & short detection. 2 groups of 4; 0.5 A max. per point; 4 A max. per group
24 V General Purpose Inputs	Sixteen optically isolated; source/sink 4 groups of 4
5 V Outputs (differential)	Four RS422 Line Driver with short circuit protection; 48 mA max.
5 V Inputs (differential/single-ended)	Six RS422 / RS485 Line Receiver with fault detection
5 V Inputs (differential)	Six RS422 / RS485 Line Receiver with fault detection
Analog Inputs	Two, ±10V differential 14 bit resolution
Analog Outputs	Two, ±10V differential 14 bit resolution
24 V Power Output	Reverse polarity protected by replaceable fuse
5 V Power Output	0.5 amp max. electronic overload protected
Quad Encoder Open Circuit Detection	Yes
I/O Function Assignment	Configurable I/O functions are assigned during module hardware configuration
Terminal Header Options	IC694TBxx32

Motion Control (High Speed Counting)

The High Speed Counters can be used for a wide range of applications. The following types are supported.

Type A - Up or Down-Independent Pulse-4 counters

Type B - Both Directions-A QUAD B Encoder Inputs-2 Counters

Type C - Difference Between 2 changing values-A QUAD B Encoder Inputs -1 Counter

Type D - provides homing capability with count inputs and a Home Marker input. In A quad B mode, the counter detects quadrature errors

Type E - Pre-defined Counter Type that occupies two of the module's internal counters, primarily a down counter, but can handle up counts to account for A quad B jitter

Type E counter counts down to zero, it uses a second counter block to turn on a dedicated output for a configurable time. Type E can be set up for sequenced strobing, which links all four strobes on so that they are all triggered by strobe input 1

Type Z - Two regular Clock inputs, a software controlled Preload and a special Clock Input Z. The Z input triggers a store of the Accumulator value to the Strobe 1 register. After the store, the counter can optionally reset the Accumulator to 0. It can then either restart immediately or after wait until the Clock Input Z is no longer set User-Defined Counter Type - Create a customized counter type by selecting High-Speed Counter features that are suited to the application. This counter type provides a Clear input that can be used to immediately reset the Accumulator to the starting value.

	IC694APU300	IC695HSC304	IC695HSC308	IC694APU305
Product Name	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i I/O Processor Module**
Lifecycle Status	Active	Active	Active	Active
Module Type	High Speed Counter (*Enhanced Mode support: 1Mhz input frequency, expanded filtering, single ended, differential encoders, 32 bit counters, Z counter and windowing)	High Speed I/O Processing (4 counters) Module supports High Speed Counting, PLS (Programmable Limit Switch), Camming, Input Interrupts and Pulse Width Timing	High Speed I/O Processing (8 counters) Module supports High Speed Counting, PLS (Programmable Limit Switch), Camming, Input Interrupts and Pulse Width Timing	I/O Processor Module
Backplane Support	No Backplane Restrictions	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Input/Output Type	Positive Logic	Positive Logic	Positive Logic	N/A
Off State Leakage Current	10 µA per point	200 µA	200 µA	10 µA per point
Output Protection	3 Amp Fuse for all points, Enhanced Module will have ESCP protection	1.5 A maximum per channel, 10.5 A maximum per module	1.5 A maximum per channel, 10.5 A maximum per module	5 A Fuse for all points
Counter Operation	Type A, Type B, and Type C Enhanced Mode Type Z	Type A, Type B, Type C, Type D, Type E, Type Z and User-Defined Counter	Type A, Type B, Type C, Type D, Type E, Type Z and User-Defined Counter	Gray Code Encoder or A Quad B Encoder every 500 microseconds
CPU Interrupt Support	No	Yes	Yes	N/A
PLS and Camming Support	No	Yes	Yes	N/A
Input Filters (Selectable)	High Frequency Filter - 2.5 µs; Low Frequency Filter - 12.5 ms; *Enhancement Mode: 5 ms, 500 µs, 10 µs and no filter	30 Hz, 5 KHz, 50 KHz, 500 KHz, 5 MHz	30 Hz, 5 KHz, 50 KHz, 500 KHz, 5 MHz	N/A
Count Rate	High Frequency - 80 kHz; Low Frequency - 20 Hz; *Enhanced Mode Up to 1MHz with 2MHz internal Oscillator	High Frequency 1.5 MHz (internal 2 MHz oscillator)	High Frequency 1.5 MHz (internal 2 MHz oscillator)	30 kHz (Absolute Encoder) 200 kHz (A Quad B Encoder)
Counter Range	-65,535 to 65,535 ; *Enhanced Mode -2,147,483,648 to 2,147,483,647 with roll over detection	-2,147,483,648 to 2,147,483,648	-2,147,483,648 to 2,147,483,648	N/A
Selectable On/Off Output Presets	Each Counter has 2 present points, On and Off; *Enhanced Mode up to 4 configurable outputs	Each Counter has 4 present points, On and Off	Each Counter has 4 present points, On and Off	N/A
Counters per Timebase	Each counter stores the number of counts that have occurred in a specified time. A timebase value measurement from 1 ms to 65535 ms is configurable.	A Timebase from 100 nanoseconds to 429,496 milliseconds can be selected for each counter.	A Timebase from 100 nanoseconds to 429,496 milliseconds can be selected for each counter.	N/A
Strobe Register	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	N/A
Local Fast Inputs	(12) 5 VDC or 10 to 30 VDC	(8 inputs) 5 VDC nominal: 4.7 VDC to 5.5 VDC 12 to 24 VDC nominal: 10 VDC to 26.4 VDC Inputs are mapped to any counter or to the controller as interrupts.	(16 inputs) 5 VDC nominal: 4.7 VDC to 5.5 VDC 12 to 24 VDC nominal: 10 VDC to 26.4 VDC Inputs are mapped to any counter or to the controller as interrupts.	(12) 8.0 VDC (non-VTTL), 1.5 VDC (TTL)
Local Fast Outputs	(4) 10 to 30 VDC @ 500 mA maximum; *Enhanced Mode: 1.5 A with ESCP 4.75 to 6 VDC @ 20 mA maximum	(7 outputs) 4.7 to 40 VDC 1.5 A maximum per channel, 10.5 A maximum per module Outputs can be used by the counters or as standard outputs from the controller.	(14 outputs) 4.7 to 40 VDC 1.5 A maximum per channel, 10.5 A maximum per module Outputs can be used by the counters or as standard outputs from the controller.	Continuous Output Current (10°V30 VDC supply) 1.0 A (each output 1-V4) 0.5 A (each output 5-V8)
Connector Type	Terminal Block (20 screws), included with module.	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	250 mA @ 5 VDC	64 mA maximum @ 5 V; 457 mA maximum @ 3.3 V	94 mA maximum @ 5 V; 561 mA maximum @ 3.3 V	360 mA @ 5 VDC