MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE INTELLIGENT PLATFORMS

IC695FTB001

FIBER I/O TERMINAL BLOCK

Used with the applicable PACMotion PMM345 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: PACMotion PMM345 User Manual GFK-3140A

1.3.4 Open and Integrated to Improve Engineering Productivity

- Single software development environment with shared tag database for logic, motion, I/O and operator interface.
- Motion and machine logic in a common program greatly simplifies programming.
- Motion function blocks and state model designed to comply with the PLCopen programming standard to reduce learning curve and training costs.
- Buffer mode allows program logic to queue motion command sequences and specify or change the velocity transition between buffered moves on-the-fly.
- Advanced diagnostic tools included in PACSystems software speed diagnostics and machine time-to-market.

1.3.5 Flexibility and Scalability

- Four servo axes per module; Up to 40 axes in a single PACSystems RX3i rack.
- Built-in faceplate I/O and optional fiber I/O terminal block supports extensive user configurable digital and analog I/O.
- Servo Drives and motion I/O can be physically distributed. Virtual (time-based) or real (encoder) master axes over the backplane support advanced CAM and electronic gearing applications for flexible electronic line shaft applications.

1.4 Fiber Terminal Block I/O

The DIN rail mounted FTB, IC695FTB001, allows you to connect 5-volt, 24-volt, and analog I/O to motion specific devices, such as limit switches and encoders, over a full-duplex fiber optic link up to 100m from the PMM345. FTB I/O can be configured as overtravel switch, home switch, quadrature encoder and high-speed touch probe position capture inputs, digital CAM switch outputs or general purpose I/O. The FTB's analog outputs can be used as general-purpose analog outputs or configured for closed position loop (velocity interface) or velocity loop (torque interface) control of up to two analog servos.

A robust serial protocol encodes and decodes the data as it sent between the PMM and the FTB. In the event of a system malfunction, such as loss of communication with the PMM, the FTB sets its I/O to the user-configured state.

Note: For order info, please consult the FTB IPI, GFK-2467.

3.2 Fiber Terminal Block I/O

The FTB provides the ability to locate I/O connections near motors and controlled devices. The FTB contains an external I/O controller that communicates axis control and status data, including signals from incremental quadrature encoders, touch probes, home switches and overtravel switches, through a noise immune fiber optic serial link.

Fault detection for the 5Vdc differential inputs includes open wire and loss of encoder power. Fault detection is enabled or disabled in hardware configuration.

The PME hardware configuration tool allows you to assign I/O functions to specific terminal block I/O points based upon how connections to the module are wired. Sample connection diagrams that assign the resources for a typical application are provided in Section 3.2.4, FTB Wiring Diagrams and Pin Assignment.

The FTB uses two removable 36-pin spring-style or screw-style terminal blocks. These must be ordered separately. Each terminal type is available with an extended wiring shroud. Part numbers for each terminal block type are shown below.

Shielded wiring is required for 5Vdc and analog I/O lines to provide noise immunity.

3.2.1 IC695FTB001 Fiber Terminal Block I/O Specifications

Power requirements	19.2Vdc —28.8Vdc main power, 0.45A at 24Vdc
Physical dimensions	141.2 mm wide x 125.5 mm tall x 62.5 mm deep (5.56” x 4.94” x 2.46”)
24Vdc Outputs (differential)	8, 2 groups of 4 optically isolated @ 4A max per group
24Vdc Inputs (general purpose)	16, 4 groups of 4 optically isolated
5Vdc Input/Outputs	4, differential inputs or 4, differential outputs
5Vdc Inputs	8, differential (6 can be used as Single-ended)
Analog Inputs	2, ±10Vdc differential
Analog Outputs	2, ±10Vdc single-ended
5Vdc Power Output	0.5A max.
Quad Encoder Open Circuit Detection	Yes
Encoder Power output	5Vdc at 0.5A max

For RX3i environmental specifications, refer to the PACSystems RX3i System Manual, GFK-2314.

3.2.2 Terminal Header and Cable Options

The following types of terminal blocks are available for use with the FTB. For information on the use of these terminal blocks, refer to the PACSystems RX3i System Manual, GFK 2314.

High Density Terminal Header Options	
36-point Spring Clip Terminals	IC694TBS032
36-point Captive Screw Terminals	IC694TBB032
Spring Clip Terminals, Extended Shroud	IC694TBS132
Captive Screw Terminals, Extended Shroud	IC694TBB132
[optional] Sheathed Fiber Optic Cable[1]	
1 meter	ZA66L-6001-0026#L1R003
5 meter	ZA66L-6001-0026#L5R003
10 meter	ZA66L-6001-0026#L10R03
20 meter	ZA66L-6001-0026#L20R03
50 meter	ZA66L-6001-0026#L50R03
100 meter	ZA66L-6001-0026#L100R3
[optional] Unsheathed Fiber Optic Cable[2]	
0.30 meter	ZA66L-6001-0023#L300R003
1 meter	ZA66L-6001-0023#L1R003
2 meter	ZA66L-6001-0023#L2R003
3 meter	ZA66L-6001-0023#L3R003

⚠ WARNING

Power to I/O devices must be turned off when installing or removing a terminal block assembly.

[1] For fiber optic lengths less than 10 meters, unsheathed cable is recommended.
For fiber optic lengths from 10 to 100 meters, sheathed cable is required.

3.2.3 FTB Input Power

Each terminal accepts one AWG #14 (2.1mm2) or two AWG #16 (1.3mm2) copper 75°C (167°F) wires. The suggested torque for the input power terminals is 12 in-lbs (1.36 Newton-meters). Each terminal can accept solid or stranded wires. Both the wires in a terminal should be the same type.

Figure 36: FTB Input Power Wiring

