CoProcessor Modules

Basic CoProcessor Modules

F4-CP128-1
F4-CP512-1
F4-CP128-T
F4-CP128-R
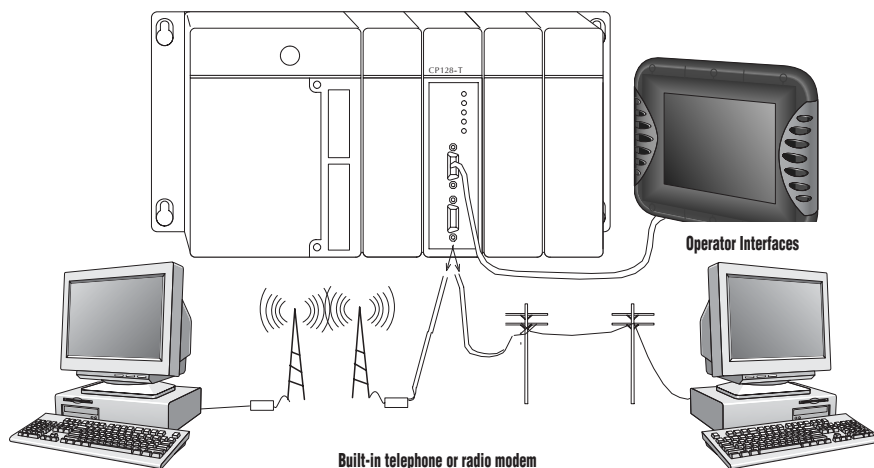
Built-in telephone or radio modem

Operator Interfaces

Overview

The FACTS CoProcessor Module interfaces the *Direct*LOGIC 405 family of programmable controllers with bar code readers, operator interface terminals, instrumentation equipment, computers, and other serial devices. The three ports offer a range of communication interfaces and baud rates. Please consult the port descriptions to see which module is best suited for your needs.

Features

• FACTS Extended BASIC and ABM Commander for Window software makes program development fast and simple. Allows ONLINE, full-screen BASIC program editing and the ability to programs on disk (software on CD included with each module)
• Non-volatile memory of up to 512K bytes allows multiple program storage and execution, DL405 register expansion, and retentive data storage and retrieval
• 16MHz or 26MHz CoProcessor provides fast program execution independent of the DL405 CPU scan
• Three buffered ports permit communication from module to three or more external devices
• Programmable from either port for complete serial port utilization without having to switch cables
• A real-time clock/calendar maintains time/date with battery backup when power outages occur. Programmable time-based BASIC interrupts to .005 of a second
• Directly access up to 254 bytes of DL405 CPU memory per scan. No supporting ladder logic is required
• Floating point math solves complex formulas to eight significant digits
• Options include a built-in 300/1200/2400 baud telephone modem or a leased-line radio modem
• Includes Modbus master/slave BASIC examples and other application examples on CD

CoProcessor applications

The CoProcessors are designed for use with intelligent devices such as:

• Barcode readers
• Welders
• Board level controllers
• Serial printers
• Intelligent sensors
• Almost any device with an RS-232C/422/485 port

CoProcessors are also good solutions for applications requiring large amounts of complex math.

CoProcessor Modules

Specifications	
Module Type	CoProcessor, intelligent
Modules per CPU	Eight Maximum, any slot in CPU base
Communication	256 character type-ahead input buffer on all ports. Ports are independently programmed by software. seven or eight data bits, 1 or 2 stop bits, even, odd or no parity. XON/XOFF software flow control and RTS/CTS handshake.
F4-CP128-1	128K bytes of battery-backed RAM. 26MHz clock rate. Runs BASIC programs two to three times faster than 16MHz CoProcessors. Port 1, RS232C/422/485 selectable, maximum baud rate of 115.2K baud. Port 2, RS232C/422/485 selectable, maximum baud rate 57.6K baud. Port 3, RS232C, maximum baud rate of 19.2K baud. Port 3 is available by using the RTS/CTS pins on Port 1. If you use these lines on Port 1, then Port 3 is not available.
F4-CP512-1	512K bytes of battery-backed RAM. 26MHz clock rate. Port 1, RS232C/422/485 selectable, maximum baud rate of 57.6K baud. Port 2, RS232C/422/485, maximum baud rate of 9600 baud. Port 3, RS232C, maximum baud rate of 9600 baud. Port 3 is available by using the RTS/CTS pins or Port 1. If you use these lines on Port 1, then Port 3 is not available.
F4-CP128-T	128K bytes of battery-backed RAM, 16 MHz clock rate. Port 1, RS232C/422/485 selectable, maximum baud rate of 57.6K baud. Port 2, RS232C, maximum baud rate 9600 baud. An optional use for port 2 is a built-in full-duplex, 300/1200/2400 baud PSK/FSK, asynchronous telephone modem. The modem is Bell 212A/103 & CCITT V.22/V.21 compatible. Automatic dialer with call progress monitoring detects no dial tone, ring and busy. Automatically answer calls. Can be used for remote data acquisition and diagnostics. Allows remote reprogramming of both BASIC CoProcessor and DirectLOGIC 405 CPUs. Exceeds FCC part 68 hazard protection requirements. Port 3, RS232C, maximum baud rate of 9600 baud. Port 3 is available by using the RTS/CTS pins on Port 1. If you use these lines on Port 1, then Port 3 is not available.
F4-CP128-R	128K bytes of battery-backed RAM, 16 MHz clock rate. Port 1, RS232C selectable, maximum baud rate of 57.6K baud. Port 2 features a built-in 300/600/1200 baud FSK, asynchronous leased-line/data radio modem (no RS-422/485). The modem is Bell 103/113/108, Bell 202, CCITT V.221 and V.23 compatable, with fast response times for direct connection to leased-line networks and radios. Full or half-duplexed operation, 4-wire or 2-wire connection. Transmit and receive 600 ohm transformers provide 1500VDC isolation and common-mode rejection. Adjustable transmit level and receive sensitivity for non-standard interfaces. Port 3, RS232C, maximum baud rate of 9600 baud. Port 3 is available by using the RTS/CTS pins on port 1. If you use these lines on Port 1, then Port 3 is not available.
ABM Commander for Windows (CD-ROM included with module)	Programming/documentation software for FACTS Engineering BASIC module. Key features include: • Runs under Windows 95/98/2000 or Windows NT 3.51 or later. • Command Mode allows the user to program and debug with a "Point and Click" or Command Line Interface. • Uses standard Windows applications for off-line edited (Notepad) and terminal emulation (Hyperterminal) • Text Upload and Download BASIC programs • Binary Upload and Download BASIC programs • Extensive help file contains full user manual information • Includes Modbus master and Modbus slave BASIC programs and other application examples
Field Termination	9 pin D-sub connectors for port 1 and port 2. Port 3 uses electrical connections from port 1. (F4-CP128-T uses an RJ12 phone jack located under the module)
Power Consumption	F4-CP128-1 — 305mA maximum at 5VDC, (supplied by base power supply) F4-CP512-1 — 235mA maximum at 5VDC, (supplied by base power supply) F4-CP128-T — 350mA maximum at 5VDC, (supplied by base power supply)
Operating Environment	0°C-60°C (32°F-140°F), 5% to 95% humidity (non-condensing)
Manufacturer	FACTS Engineering