DL305 Specialty CPUs

Your application may require an unconventional PLC solution. For instance, you may need computer-controlled I/O (the PLC I/O is controlled directly by your personal computer), or maybe you would like a PLC that executes a control program written entirely in BASIC instead of RLL. AUTOMATIONDIRECT offers three specialty CPUs that provide solutions for each of these applications.

Computer I/O CPUs

Three CPUs are available for the DL305 family that allow DL305 I/O (with DL305 bases) to function as computer-controlled I/O. These CPUs (F3-OMUX-1, F3-OMUX-2 and the F3-PMUX-1) are similar in functionality, but offer different communication options. Each CPU allows DL305 modules of most types (see restrictions on types) to be interfaced with a host computer. The entire control program for the DL305 I/O is executed on the host computer, which uses an OPTOMUX or PAMUX driver.

I/O module restrictions

The specialty CPUs can make use of almost all DL305 modules, but they do not support the D3-HSC, or D3-02DA modules. These modules can only be used with the regular CPUs (D3-330 and D3-340).

F3-OMUX-1 <--->
F3-OMUX-2 <--->

The F3-OMUX (-1, -2) CPU plugs into the first slot of a DL305 base. It acts as a serial interface to the control program in the host computer and up to 184 DL305 I/O per CPU. Multiple CPUs can be daisy-chained together to increase I/O count. The host computer must use an OPTOMUX serial communication driver. The host can execute a custom program or use a standard software package that supports OPTOMUX drivers such as Intouch-Wonderware, Iconics-Genesis, U.S. Data FactoryLink, Metra-Skyhawk Lt, etc.

General Specifications
- Two serial ports that support the OPTOMUX protocol

  F3-OMUX –1
  RS232C/RS422/RS485

  F3-OMUX-2
  RS422/RS485 (isolated)
- Max of 184 I/O points per CPU (with expansion base unit)
- Scan time is dependent on the communication speed, number of commands sent, type of commands sent, the size of the response and the speed of the host computer.

F3-PMUX-1 <--->

The F3-PMUX is similar in operation to the F3-OMUX (-1, -2). It uses a parallel interface instead of serial interface. As a result, it requires the host computer to use a PAMUX communication board (OPTO 22 part number AC28 or equivalent). With this board, you can use PAMUX communication drivers in your host software. Scan time constraints are similar to the OMUX units.

The –1 version has a 26Mhz processor and replaces the F3-PMUX CPU.

The following charts show the various features found on the DL305 specialty CPUs:

F3-OMUX-n
Communication port specifications

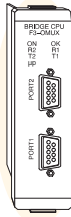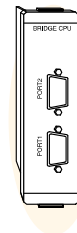|	
Interface	F3-OMUX-1: RS232C/422
	F3-OMUX-2: RS422/485 (isolated)
Connector	Two 9-pin D-sub sockets (female)
Baud Rate	Port 1: 300, 1200, 2400, 4800, 9600, 9200, 38400, 57600, 115200
	Port 2: 9600
Protocol	OPTO 22 serial communications

F3-PMUX-1
Communication port specifications

Interface	Parallel
Connector	50-pin ribbon cable connector
Protocol	OPTO 22 parallel communications

Host computer

Control program resides in host computer

OPTOMUX or PAMUX protocol

F3-OMUX and F3-PMUX CPUs read and write to DL305 I/O as requested by host computer