

Gateway Access to PowerFlex EtherNet/IP Drives

Step 1: Configure the parameters of the drive with the EtherNet/IP-PCCC protocol.

Step 2: Review the N-Files section of the Rockwell publication for the EtherNet adapter in the drive you are accessing.

- Review Appendix C of Rockwell publication 750com-UM001G (starting on PDF page 164).
- Review Appendix C of Rockwell publication 520COM-UM001B (starting on PDF page 136).

You will need to select the registers you are interested in exchanging between the drive and the PLC.

Settings provided by a PowerFlex 755 drive Device Properties dialog box:

Device Properties

Device Name: ★

Protocol: EtherNet/IP-PCCC ▼

TCP Port: ★

Address: ★

Example of 2 Tags added to the PF755 device (notice the addresses of the tags):

Tags + ✎ 🗑️ ↕️ ↔️			
Name	Description	Data Type	Address
Adapter_Port_#		DINT	N42:7
Timeout_Value		DINT	N42:3

The other device in this example is an Allen-Bradley 1756-L83E. It has 2 tags to exchange with the drive:

Tags + ✎ 🗑️ ↕️ ↔️			
Name	Description	Data Type	Address
Update_Adapter_Port		DINT	Update_Adapter_Port
Update_INT		INT	Update_INT
Update_Timeout_Value		DINT	Update_Timeout_Value

Associated Tag Map configuration:

Tag Map Editor

Copy Tags + 🗑️ ↕️	
Source	Destination
① L83E.Update_Timeout_Value	① PF755.Timeout_Value
① PF755.Adapter_Port_#	① L83E.Update_Adapter_Port

In the above example, the map is sending the timeout value to the drive from the PLC, and sending the adapter port value from the drive to the PLC.

How the Live Tag Map Viewer appears after being activated but before the map is initialized:

How the Live Tag Map Viewer appears after being activated and initialized:

This process works because Rockwell reveals the N File registers of the drive through the EtherNet/IP PCCC protocol and gives you a list of all the available registers. These are directly useable in the Gateway.

The following image shows the beginning of the listing of registers available for access in the drive. See Appendix C of Rockwell publication 750com-UM001G (starting on PDF page 164):

N-Files

N-File	Description										
N42	This N-file lets you read and write some values configuring the port.										
N42:3	Time-out (read/write): Time (in seconds) allowed between messages to the N45 file. If the adapter does not receive a message in the specified time, it does the fault action configured in its [Comm Flt Action] parameter. A valid setting is 1...32767 seconds (5...20 seconds is recommended).										
N42:7	Adapter Port Number (read only): Drive Port 13 in which the adapter resides.										
N42:8	Peer Adapters (read only): Bit field of devices with peer messaging capabilities.										
N45	<p>This N-file lets you read and write control I/O messages. You can write control I/O messages only when all following conditions are true:</p> <ul style="list-style-type: none"> The adapter is not receiving I/O from a scanner. For example, there is no scanner on the network, the scanner is in Idle (program) mode, the scanner is faulted, or the adapter is not mapped to the scanner. The adapter is not receiving Peer I/O from another adapter. The value of N42:3 is set to a non-zero value. 										
	<table> <tr> <th>Write</th><th>Read</th></tr> <tr> <td>N45:0</td><td>Logic Command (least significant)</td></tr> <tr> <td>N45:1</td><td>Logic Command (most significant)</td></tr> <tr> <td>N45:2</td><td>Feedback (least significant)</td></tr> <tr> <td>N45:3</td><td>Feedback (most significant)</td></tr> </table>	Write	Read	N45:0	Logic Command (least significant)	N45:1	Logic Command (most significant)	N45:2	Feedback (least significant)	N45:3	Feedback (most significant)
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