# **MEB II Setup Video**

## **Companion Manual**

This manual provides more detail on the the MEB II Modbus Plus to Ethernet Bridge Setup Video.

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## System Layout

The Niobrara MEBII is a stand-alone DIN rail mount Modbus Plus to Ethernet Bridge. It features a redundant cable Modbus Plus (MB+) port, a 10/100BaseTX Ethernet port, and two isolated serial ports. The MEB II allows simultaneous pass-through routing data messages from Modbus/TCP Ethernet, MB+, and Modbus serial between all ports. Full support of PLC programming message pass-through is also provided on all communication ports including Unity Pro, Concept, ProWORX, and Modsoft.



The MEBII Quick Setup video demonstrates a simple network setup as shown in Figure 2 Network Layout. The MEBII is connected through an Ethernet switch to a PC running ProWORX32. It is also connected via Modbus Plus to a Quantum PLC at node 17 and a Compact PLC at node 01. The MEBII is to be configured to an IP Address of 192.168.1.60 and a MB+ node of 25.

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#### **IP Settings**

The IP Address of the MEBII is set to 192.168.1.60. The video demonstrates setting this value with the following screens:



Figure 3: Fixed IP Address Screen

The Subnet Mask and Default Gate are also configured through the front panel.

	Main	Config	Comms	Enet	IP Mask	IP Mask
MEBI 192.168 1.60 Duplicate MB+: 1	▶Config Status App Info System	⊫Comms Display	▶Ethernet Serial Modbus+	Address Mask Gate IP Source Protocol Drop MB Routes IP Routes Enet Mode	255.255. 255. 0 ( /24 )	Auto Set Default Gate? No/ <b>Xes</b>

Figure 4: Subnet Mask Screens



Figure 5: Default Gate Screen

### **Modbus Plus Settings**

The MEBII is connected through a single-cable MB+ network to a Quantum PLC at MB+ drop 18 and a Compact 984 PLC at MB+ drop 1. The MEBII is configured to be at node 25.

LUDO D	Main	Config	Comms	MB+ Drop
NK&D	▶Config	Comms	Ethernet	Current:
MEBI	Status App Info	Display	Serial ∳Modbus+	1 New: 25
192.168 1.60	System			Auto-Fix Routing Tables?
Duplicate MB+: 1				No⁄ <b>Yes</b>

Figure 6: Edit Modbus Plus Drop

The Auto-Fix of the Routing Table automatically fixes the Modbus Routing Table for the Ethernet port to reflect the new MB+ address.

As shown below, Modbus/TCP Index 1 will be used to route to the Compact PLC at MB+

Index	Туре	Route	Notes
0	OTHER	NONE	
1	MODBUS	25,1	Compact 984 PLC
2	MODBUS	25,2	
3	MODBUS	25,3	
4	MODBUS	25,4	
5	MODBUS	25,5	
6	MODBUS	25,6	
7	MODBUS	25,7	
8	MODBUS	25,8	
9	MODBUS	25,9	
10	MODBUS	25,10	
11	MODBUS	25,11	
12	MODBUS	25,12	
13	MODBUS	25,13	
14	MODBUS	25,14	
15	MODBUS	25,15	
16	MODBUS	25,16	
17	MODBUS	25,17	Quantum PLC
18	MODBUS	25,18	
19	MODBUS	25,19	
20	MODBUS	25,20	
	MODBUS		
64	MODBUS	25,64	

node 01. Index 17 will be used to connect to the Quantum PLC at node 17. NOTE: The AutoFill also fixes the routing tables for Ports 1 and 2 as well.

Table 1: MB+ part of the Ethernet Modbus Routing Table after Auto-Fix

The "Type" field is set almost always set to MODBUS. It should be set to OTHER when the target devices is SY/MAX.

#### ProWORX32 Setup

In each case, ProWORX32 was simply used to verify the connection to the target PLC.

To connect to the Quantum PLC, a New Project was started with "Online to Controller" chosen for the setup.

New Project (fff) - Select creation method				
Online to Controller	If you need to immediately connect to a select 'Online to Controller.' If you war new controller project offline please sel three offline project creation options.	a controller, ht to create a lect one of the		
C Offline Select Controller Type Base on Existing Projec Read from Controller	T Use as a Macro			
Help	Cancel	< <u>B</u> ack	<u>N</u> ext >	Einish

The selected communication is "Gateway" and the "Gateway Type" is NR&D MEB.

New Project (Quantum) - C	ommunications Setup		
	Select the desired communication m	node:	
Sector Manager	Selected Communication	NR <u>D</u> MEB	
	Modbus Modbus Plus Gatewa		1
	Ethernet Gateway Com	munications Setup	
	Resource Type	Setting	
	🛄 Gateway Type	NR&D MEB	
	index 🛄	1	
	IP Address	0.0.0.0	
	Timeout	3 Seconds	
	Change Setting	Netv	vork Explorer
	Use server to communicate		
Help	Cancel	< <u>B</u> ack <u>N</u> e	xt >Einish

To reach the Quantum PLC, Index 17 is needed:

Edit Gateway Value			
Enter the Index you would like to set f communications mode.	or this		
⊻alue: 17			
ок	Cancel		

Also, the IP Address of the MEBII is required:

Edit Gateway Value		
Enter the IP Add communications	ress you would like to set for this mode.	
<u>V</u> alue:	192 - 168 - 001 - 60	
	OK Cancel	

The new communications setup looks like this:

New Project (quantum) - C	Communications Setup				
	Select the desired communica	ation mode:			
Sec. Viensing	Selected Communica	NR <u>D</u> MEB			
	Modbus Modbus Plus Gateway				
	Ethernet Gateway Communications Setup				
	Resource Type	Setting			
	Gateway Type	NR&D MEB			
	index 🔛	17			
	IP Address	192.168.1.60			
	Timeout	3 Seconds			
	Change Setting	<u>N</u> etw	ork Explorer		
	Use server to communicat	te			
Help	c	ancel < <u>B</u> ack <u>N</u> ex	t > Einish		

The setup to reach the Compact PLC is exactly the same, only choose Index 1.