CIP Modbus Object Read Example
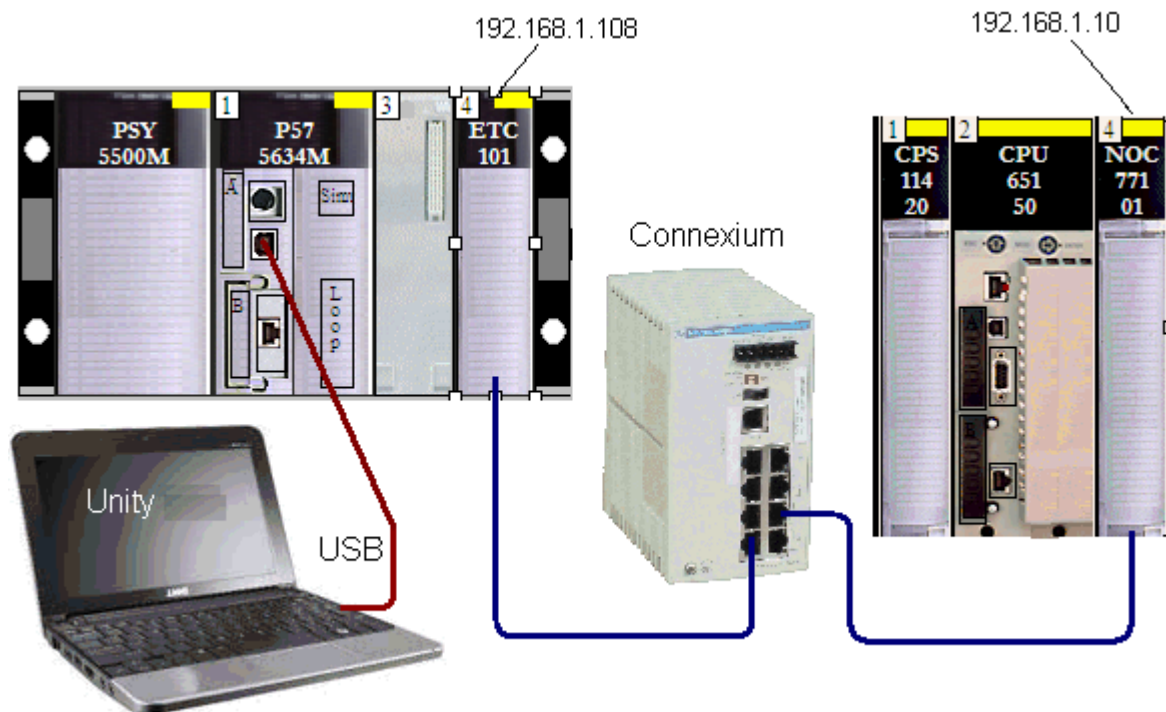
TSXETC101 using
Explicit Messaging via Send_Req

Dec 15, 2012
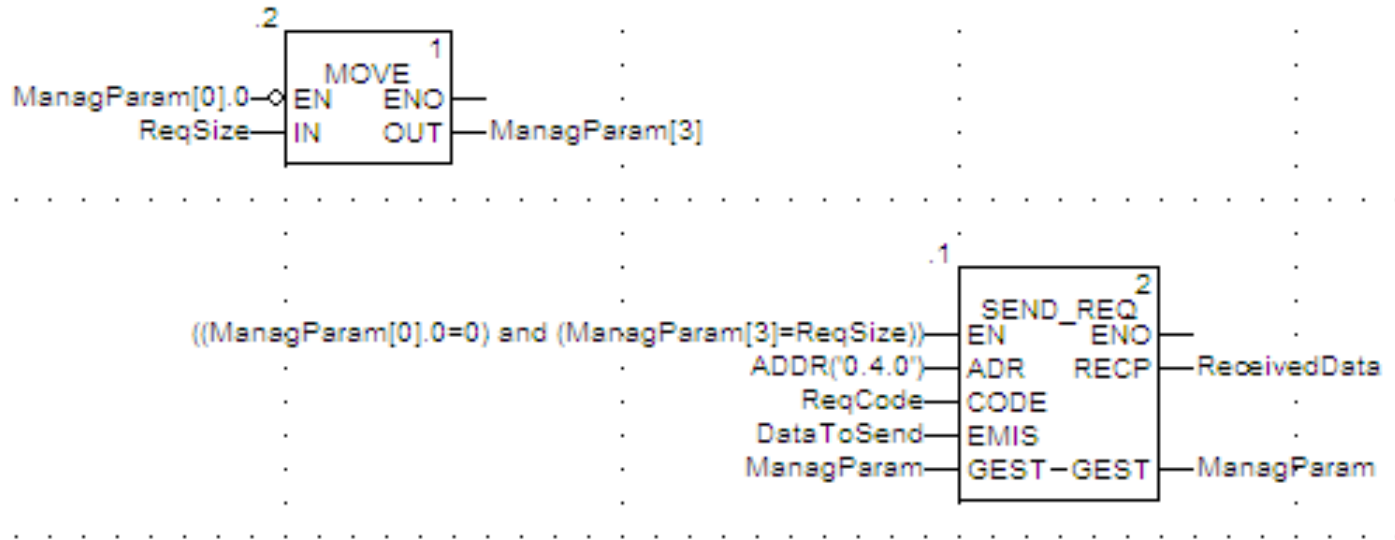
Version 1.0

Schneider Electric

PLC Hardware Configuration

• TSXETC101 (192.168.1.108) to query NOC77101 (192.168.1.10) with Explicit Messaging CIP Modbus Object READ.

• The USB connection is for Unity to PLC communications.

Unity Program

- Note to add the 'Pin negation' on the AND_BOOL IN1 input.

CIP Request
DataToSend and ManagParam

Name	Value	Type	Comment
🔵 managParam[0].0	1	BOOL	1 = Run
🟢 ReqCode	14	INT	Variable that identifies the function type (0E = CIP Request)
🟢 ReqSize	16	INT	DataToSend length=8 words (16 bytes)
⬜ DataToSend		ARRAY[0..7] OF...	
🔵 DataToSend[0]	16#000E	INT	Explicit Message Connected = 0, Connected = 1
🔵 DataToSend[1]	16#C0A8	INT	IP Address: Byte 4 (192), Byte 3 (168)
🔵 DataToSend[2]	16#010A	INT	IP Address: Byte 2 (001), Byte 1 (010)
🔵 DataToSend[3]	16#024E	INT	CIP message (Request Path Size / Service Code)
🔵 DataToSend[4]	16#4420	INT	Class, Class Segment
🔵 DataToSend[5]	16#0124	INT	Instance, Instance Segment
🔵 DataToSend[6]	1	INT	Starting Register
🔵 DataToSend[7]	5	INT	Number of Registers to Read
⬜ ManagParam		ARRAY[0..3] OF...	
🔵 ManagParam[0]	16# 0000	INT	Activity Bit High byte will increment/Low byte = 1
🔵 ManagParam[1]	0	INT	Operation Report, Communication Report
🔵 ManagParam[2]	3	INT	Function Block TimeOut
🔵 ManagParam[3]	16	INT	Length of DataToSend Parameter (in Bytes)

• Set managParam = 1 to start the messaging.

CIP Response Received Data

- The values are read from IP 192.168.1.10, memory words %MW1 through %MW5 and are placed in ReceivedData[2] through ReceivedData[6] respectively, in this example.

	ReceivedData		ARRAY[0..10] O...	
	ReceivedData[0]	16#00CE	INT	
	ReceivedData[1]	0	INT	
	ReceivedData[2]	111	INT	Register 1 Data read from Quantum PLC
	ReceivedData[3]	222	INT	Register 2 Data read from Quantum PLC
	ReceivedData[4]	333	INT	Register 3 Data read from Quantum PLC
	ReceivedData[5]	444	INT	Register 4 Data read from Quantum PLC
	ReceivedData[6]	555	INT	Register 5 Data read from Quantum PLC
	ReceivedData[7]	0	INT	