MPU-32 DEVICENET SET-UP GUIDE (BASED ON RSNETWORX 7.0)

MPU-32 DeviceNet Message Definitions

The MPU-32 supports Polled I/O messages and Explicit messages. Polled I/O messages are typically used by DeviceNet scanners to access fixed blocks of memory from the device at a pre-defined rate. Explicit messages are used by configuration software tools such as RSNetWorx to setup the device and also used by the PLC's MSG instruction to access device parameters. The MPU-32 supports both Polled I/O and Explicit messages simultaneously.

MPU-32 DeviceNet Communication Settings

Use the operator interface to access the *Setup | Hardware | Network Comms* menu. Set the *Network ID* for the device and the *Baud Rate as DN 125K, DN 250K, or DN 500K*. Select *DeviceNet* from the *Network Type* menu.

RSNetWorx

Start RSNetWorx for DeviceNet and register the MPU-32 EDS file. Use the MPU-32 icon file so that RSNetWorx displays the MPU-32 icon when the MPU-32 device is selected. With the EDS file registered, the MPU-32 can be added in the network configuration.

Once the MPU-32 device is added to the network configuration, select MPU-32 properties:

Parameter Tab:

This is a list of all the parameters in the MPU-32. Most of these can also be changed using the MPU-32 menu system except for Polled Consumption (Parameter 10), and Polled Production (Parameter 11).

Note: Changing parameter 10 or 11 does not change the value in the I/O Tab. This value is the eds default value only. Ignore this value.

I/O Tab:

Ignore this value. The I/O byte size is defined by the size of the assembly selected by Parameter 10 and 11. All assemblies are a byte size of 1 except for the User Register assembly which is fixed at 64 bytes. See DeviceNet manual section 3.5 "Assembly Object".

Note: The User Register assembly size is fixed at 64 bytes. When using this assembly with a 124 DINTs Rockwell scanner, only 7 MPU-32's can be connected to a single scanner.

The DeviceNet configuration and MPU-32 set points are saved with the File | Save option. They can then be recalled and downloaded to the MPU-32 as required. This allows the system configuration to be performed online or offline.

Example 1756-DNB/A Setup

Example Requirement: Configure the MPU-32 and scanner to access the three phase currents, local RTD, Trip/Alarm, and MPU-32 status information. Use the Basic Overload byte to provide fault-reset capability to the MPU-32.

MPU-32 Settings:

The User Register assembly is used to generate a custom assembly, and the Basic Overload assembly is used to provide fault reset capability. The user register parameters are set to the required MPU-32 registers. When the scanner polls the MPU-32, a 64-byte assembly is sent to the scanner consisting of the data from the user-registers.

Right click on the MPU-32 and select Properties.

Select the *Parameters* tab and set the values based on the following table:

PARAMETER	DESCRIPTION/CONTENT	SET TO
10	Consumption (data from network)	Basic O/L(0x02)
11	Production (data to network)	User Registers (0x64)
380	User register 0	860 (Phase A low)
381	User register 1	861 (Phase A high)
382	User register 2	862 (Phase B low)
383	User register 3	863 (Phase B high)
384	User register 4	864 (Phase C low)
385	User register 5	865 (Phase C high)
386	User register 6	900 (RTD low)
387	User register 7	901 (RTD high)
388	User register 8	1096 (Trip and Alarm)
389	User register 9	1097 (Status)

For this example, the first 20 bytes of the assembly contain the required data starting with the Phase A current and ending with the status. The remaining 44 bytes of the 64-byte assembly can be ignored.

1756 Settings:

The scanner must be configured for Polled I/O and the input and output assembly sizes must be set. Some manual adjustment may be required so that data is aligned for ease of PLC programming.

Right-click on the 1756-DNB/A and select Properties.

From the Scanlist tab select the MPU-32's and add them to the list.

Highlight the MPU-32 in the Scanlist and press the Edit I/O Parameters button.

Select the Polled I/O box, set the input size to 64, and output size to 1.

Select YES for the connection size warning.

Select YES for the Unmapped warning.

Select YES to Automap.

The *Input* tab should indicate the mapping of 16, 32 bit words. Data[0], Data[1], and Data[2] are the 3-phase currents in float (real) format, and Data[3] is the float value of the RTD temperature. Data[4] contains the trip/alarm and status information (Bits 0-15 is Trip/Alarm, Bits 16-31 is Status). All remaining bytes are not used in this example but the total number of bytes transferred is 64.

When mapping multiple units, individual unit mappings may have to be adjusted so that float values fall on 32-bit boundaries.

The *Output* tab should indicate a Data[0] mapping of one 8-bit byte.

MSG Instruction

A PLC program can use the MSG instruction to access any parameter in the MPU-32. The Rockwell document DNET-UM004 provides details on how to configure the message instruction. The Class-Instance-Attribute information required to access a parameter is listed in the MPU-32 DeviceNet Interface Manual and also in Appendix E of the MPU-32 manual. The EDS file can also be viewed to obtain parameter details.