FLOWSERVE

Worcester Controls

WCAIM2021

(Part 13952)

Supplement 2
ACCESS I and M DeviceNet PLC Example
Installation, Operation and Maintenance Instructions

MAPPING AND OPERATION EXAMPLE USING AN ALLEN BRADLEY SLC-PROGRAMMABLE LOGIC CONTROLLER

ASSUMPTION: WORKING KNOWLEDGE OF ALLEN BRADLEY SLC PROCESSOR AND SOFTWARE

HARDWARE AND SOFTWARE USED IN THIS EXAMPLE

WORCESTER CONTROLS/McCANNA:

- ACCESS 39 Actuator with Integral DeviceNet Interface Module
- Computer Disk of Electronic Data Sheet (.eds) – Supplied with ACCESS Actuator

ALLEN BRADLEY:

- SLC-503 – Processor
- Four-Slot Rack
- P2 Power Supply
- DeviceNet Scanner Module – (located in slot 4)
- KF2-RS-232 Communication Interface Module
- PC TO Processor Cable 1747-CP3
- RS LOGIC Software
- RS LINX Software
- RS Networx for DeviceNet Software

OTHER:

- Regulated – 24 VDC Power Supply
- DeviceNet System of Cables and Connectors
- 120-ohm Network Terminating Resistors

TEST PROCEDURE

1. **Installing Electronic Data Sheet (.eds) File:**

    Install the .eds file (disk supplied with actuator) from the disk to the Rockwell .eds folder found on the hard drive as follows: Rockwell Software \ rs common \ eds

    With the .eds file placed as above the RS Networx program will automatically load the ACCESS .eds file parameters when a network browse is performed. The .eds file-access actuator (07159) can be found in the vendor category when running RS Networx.

2. Connect the SLC-Processor to the PC-COM-1 Port and the KF2 module to PC-COM-2 port.

3. **On the Actuator DeviceNet Board:**

    A) Set Switch 1 and 2 to the desired address, i.e., for Address 1 set Switch 1 to 1 and Switch 2 to 0. It is important that the address is set correctly prior to turning 24 VDC power on to the network. If the address is changed while power is applied LED 2 will flash to indicate a communication problem.

    B) Set Switch 3 to the desired communication Baud Rate, i.e., Position 0 =125K Baud Rate.

4. With the equipment installed and connected and with power turned on to the SLC and 24 VDC turned on to the DeviceNet Network, LEDs D1 and D2 should be steady green.

    A flashing LED-D2 indicates that the slave address connected to the network does not agree with what the scanner had previously mapped. See step 13.

5. **Using RS-LINX - Configure Drivers:**

    PC-COM-1 Port– to SLC- DF1-1-DH485 – To be running

    PC- COM-2 Port– to KFD-1 – To be running

6. Using RS-Networx, configure Network that should consist of scanner at node – 00; actuator 07159(1) at node-01; KFD module at node-62.

7. Go online with the Network and upload the slave parameters to the scanner module.

8. Double click the scanner module and select "module" and upload scanner parameters.

9. At the scanner module screen select "module" and set the slot number to the value that the scanner module resides in, i.e., the scanner was installed in slot 4 in this example.

10. At the scanner module screen select "scanlist" and highlight 01,07159(1)-(which is the access actuator module) in the left window and using the right arrow move the device into the right window.

11. At the scanner module screen select "input" and the display will show the default mapped location of the 11 bytes of slave (01) ACCESS actuator output (produced) data.

Output data from slaves is input data to the scanner. The default mapped address of 11 bytes of input data starts at I:4.1 through I:4.6(1st byte). Note the "4" represents the scanner slot number.

12. At the scanner module screen select "output" and the display will show the default mapped location of the 1 byte of slave (01) ACCESS actuator input (consumed) data.

Input data to the slaves is output data from the scanner. The default mapped address of 1 byte of output data starts at word O:4.1 (1st byte).

The input/output data can be remapped at these screens which is beyond the scope of this example. It is important to note that whenever any slaves are added or removed or remapping has been performed, the "apply" button must be activated with the processor in the program mode to download the changes to the scanner.

13. A flashing communication LED-D2 indicates that the slave address connected to the network does not agree with the network that the scanner had previously mapped or there is an address conflict.

A slave on the network already has been assigned this address. To correct this problem, assign and set switches 1 and 2 to an unused address for this node and cycle the 24 VDC bus power. Perform a new network browse and go online and upload the network to the scanner. Select the correct slot and in the "scanlist" delete the slave(s) that have been removed from the network and add the new slave(s) to the network. With the PLC in the program mode, select "Apply" and download the new data to the scanner. When this is complete, LED-1 and LED-2 should be on steady green.

14. In this example, with the scanner located in slot 4 the addresses of I/O data in the SLC are as follows:

SLC INPUT TABLE: 11 BYTES OF DATA – (OUTPUT DATA FROM THE ACTUATOR)

BYTE-1

I:4.0- (word-O-not used)

I:4.1/0- Bit 0- Actuator Closed -CW- Switch

I:4.1/1- Bit 1- Actuator Open-CCW- Switch

I:4.1/2- Bit 2- Not used

I:4.1/3- Bit 3- Actuator Solenoid Continuity (Coil 1)

I:4.1/4- Bit 4- Actuator (Coil 2) Continuity - Not used

I:4.1/Bits 5-7- Not used

BYTES-2,3,4,5

I:4.1/Bit-8 to I:4.3/Bit-7- Maintenance Counter- Binary Format

BYTES-6,7,8,9

I:4.3/Bit-8 to I:4.5/Bit-7- Cumulative Counter- Binary Format

BYTE-10

I:4.5/Bit-8 to Bit-15- OPEN -CCW- Cycle Timer-in seconds- Binary Format

BYTE-11

I:4.6/Bit-0 to Bit-7- CLOSE -CW- Cycle Timer-in seconds- Binary Format

SLC OUTPUT TABLE: 1 BYTE OF DATA – (INPUT DATA TO THE ACTUATOR)

O:4.0/0- WORD-0/Bit-0 - Establishes the operating mode of the scanner

Bit-0 =1- Scanner maps I/O from the slaves. **This Bit has to be on for the outputs to be under SLC program control.**

Bit-0 =0- Scanner stops mapping output data to the slaves. Input data is still returned from the slaves. Outputs on the network **are not** under SLC program control.

O:4.1/0 - Bits -01,2,3,4- Not Used

O:4.1/5 - Bit 5- Solenoid-1 Actuator goes CCW when =1 and goes CW when =0.

O:4.1/6 - Bit 6- Coil-2 Not Used

O:4.1/7 - Bit 7- Resets Maintenance counter when =1 (This SLC logic should be a momentary input i.e., a one-shot.

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