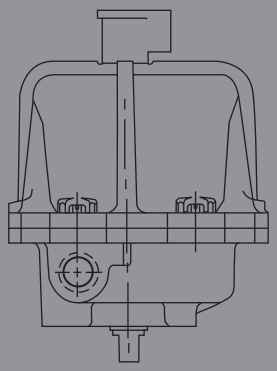

Supplement 2
75 DeviceNet PLC

FCD WCENIM2062-01 AQ (Part 14142)

Installation, Operation and Maintenance

Test and Operation Example Using an Allen Bradley SLC-Programmable Logic Controller

Assumption: working knowledge of Allen Bradley SLC processor and software

⚠ **CAUTION:** The PLC/Process Controller logic **should never** set bits 5 and 6 on (1) at the same time in output word 1. These bits control actuator CCW and CW rotation and damage to the relay interface module and motors will result if these bits are set on (1) simultaneously. The output word 1 corresponds to an actuator at Address 1.

Hardware and Software Used in this Example

WORCESTER CONTROLS

- 75 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 1747-SDN (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
- PC to SLC/PLC Cable—1747-CP3

OTHER

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

Flowserve Worcester Control Series 75 Actuators

FLOWSERVE®

Worcester Actuation Systems

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 wiIl 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 and power is cycled, LED2 will flash to indicate that the current network does not agree with what had previously been loaded to the master/scanner.

   b) Set Switch 3 to the desired communication Baud Rate, i.e., Position O = 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, LED1 should be steady and LED2 will be flashing green until this node has been mapped into the PLC Master/ Scanner.

   A red LED-D2 indicates that there is an address conflict. See step 13.

5. Using RS-LINX Configure Drivers

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

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

6. Using RS-Networx: Configure network, 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 75 actuator module) in the left window. Using the right arrow move the device into the right window.

11. At the scanner module screen, select “input.” The display will show the default mapped location of the 11 bytes of slave (01) 75 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 1:4.1 through 1:4.6 (1st byte). Note that the “4” represents the scanner slot number.

12. At the scanner module screen, select “output.” The display will show the default mapped location of the 1 byte of slave (01) 75 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 has to be activated with the processor in the program mode to download the changes to the scanner.

13. A red LED-D2 indicates that 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 on-line, and upload the network to the scanner. Select the correct scanner “slot.” In the “scanlist” delete the slave(s) that have been removed from the network and add the new slave(s) to the network. Put the processor in the Program mode and select “apply.” Download the new data to the scanner. When this is complete both LEDs D1 and D2 should be on steady green.

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

PLC Input Table: 11 bytes of data (output data from the slave)

BYTE-I

1:4.0 (word-O-not used)

1:4.1/0 Bit 0 Actuator Closed CW Switch

1:4.1/1 Bit 1 Actuator Open CCW Switch

1:4.1/2 Bit 2 Not used

1:4.1/3-Bit 3 Actuator CCW Relay (Coil 1) Continuity

1:4.1/4 Bit 4 Actuator CW Relay (Coil 2) Continuity

1:4.1 Bits 5-7 Not used

BYTES-2,3,4,5

1:4.1/Bit 8 to 1:4.3/Bit 7 Maintenance Counter Binary Format

BYTES-6,7,8,9

1:4.3/Bit 8 to 1:4.5/Bit 7 Cumulative Counter Binary Format

BYTE-10

Not used

BYTE-11

Not used

PLC Output Table: 1 byte of data (input data to the slave)

0:4.0/0- 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 PLC proqram 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 PLC program control.

⚠ **CAUTION:** The PLC/Process **Controller logic *should never* set bits 5 and 6 on (1) at the same time in output word 1.**

These bits control actuator CCW & CW rotation. Damage to the relay interface module and motors will result if these bits are set on (1) simultaneously. The output word 1 corresponds to an actuator at Address 1.

O:4.1/0 Bits 0,1,2,3,4 Not Used

O:4.1/5 Bit 5 CCW Relay (Coil 1) Actuator goes in CCW direction when =1 and stays in position when =0.

O:4.1/6 Bit 6 CW Relay (Coil 2) Actuator goes in CW direction when =1 and stays in position when =0.

O:4.1/7 Bit 7 Resets Maintenance counter when =1.

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Worcester Actuation Systems

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