Technical Note 47
DF1 Tips and Troubleshooting

Overview

This technical note provides solutions to common problems encountered implementing DF1 communications. It is intended as a supplement to the MBX-DF1 help, and not as a replacement. Wherever possible, the appropriate sections of the Orion help system are referenced, and the reader is strongly encouraged to review these sections. The Orion help system also contains a number of programming examples, as well as hardware configuration information.

Common Mistakes

- Make sure that the parameters specified with the DF1.OPEN statement match the configuration for the remainder of the network.
- Before a variable can be accessed over the network, it must be “mapped”. Refer to the MBX-MAP documentation for details.
- After initializing the DF1 interface with the DF1.OPEN statement, the MotionBASIC® program must also set DF1@ equal to TRUE. This enables access to “mapped variables” via the network.
- The ORMEC implementation of DF1 requires that the Orion is the “master” and the PLC is the “slave”. This means that the Orion initiates all data transfers.
- When the Orion is performing reads and/or writes on another device on the network, the program must not perform a second read/write until DF1.MSG@ becomes true. After DF1.MSG@ becomes true, the application should also check DF1.STS@ to verify that the operation completed successfully. If DF1.STS@ is zero, this indicates that no errors were detected. A non-zero value indicates a problem. Refer to the documentation for DF1.STS@ for additional details.
- Electrical noise can cause problems on any high-speed network. Make sure that proper grounding and shielding techniques are followed. An application note detailing the recommended grounding and shielding techniques can be found at http://www.ormec.com.
**Network Problems**

The assumption is made here that the “Common Mistakes” section of this document has already been referenced, and the network still does not function properly. A cabling schematic between the PLC and the Orion is provided on the “DF1 Communications Adapter and Cable” help page. An RS-232 interface is required.

**Register Access Problems**

This section assumes that the network is functional, but there is a problem with register access to/from the Orion.

- Make sure DF1@ is set ON.
- When the Orion is reading and writing registers, make sure that you’re using a correctly formatted address string. Refer to “SLC Addressing” in the MBX-DH help.
- Unprotected reads and writes depend upon whether “Word” or “Byte” addressing has been selected in the PLC. See the “Common Interface File (CIF)” help topic for more details.
- Use DF1.TRACE@ to enable more debugging information.
- Use DF1.STS@ to determine the type of errors that are detected.
- Use DF1.DUMP to get a detailed listing of useful debug information.

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