

1. Uniop Operator Display Panel

1.1 Overview

The following instructions apply to the configuration and communications setup of a Uniop MD02R series display panel communicating with a Kingfisher Series II RTU via a serial port using the Modbus protocol.

Configuration of the Uniop panel uses the Vendor's Designer programming utility (version 6) running under MS Windows in a PC environment. A Uniop configuration cable (catalog no. CA-2) is required for connection between the PC's serial port and the PC/Printer Port on the Uniop panel for configuration of the Uniop panel.

1.1.1 Communications Setup between the PC and the Panel

Connect the serial port of a PC to the PC/Printer Port on rear of the Uniop panel using a Uniop Configuration Cable (CA-2).

Use the Uniop Designer 6 software (under windows) to connect to the Panel.

Open the Designer 6 software program and select <transfers>, <options>, <serial ports>. Set the communications as follows:-

Port: COM 1 (or other per PC port)
Parity: NONE
Stop Bits: 1
Baud: 9600

1.1.2 Communications Setup between the RTU and the Panel

Using the designer software open a new file, name and save.

Select <Project>, <Configure Controller>, and select "External Controller Only"

Select <Controller 1 – Modbus Controller>, <Controller Setup> set as follows:-

Slave ID: The address of the RTU connected to the panel (1 – 249).
PLC Model: 984

Select <PLC Comms> and set as follows:-

Baud Rate: 9600
Parity: NONE
Data: 8 bit
Stop Bits: 1

1.1.3 Configuring a Uniop panel

Open the configuration file for the site to be configured or create a new configuration file. Each panel to be configured will have a unique configuration file with the .DPR extension.

The configuration files contain pages configured for display of digital and analog data. Pages can be added or deleted. The “Page Up” and Page Down” keys are used to cycle through the screens.

Fixed text appears as black text which can be directly overwritten by left clicking with the mouse and typing in new text. Fixed text can be added to a page by selecting <insert>, <text>.

Variable data fields are coloured red and are displayed in the following format:-

9999	Numeric field display of 4 digit integer
99.99	Numeric field display of real value with fixed decimal location
MMMM	Message based field with variable message field of up to 4 characters.

Variable data can be added by selecting <insert>, <data field> and type of data (numeric. message etc)

Double clicking on the red field provides a pop-up window which allows setting up the “tag” properties.

All data read from the RTU uses Holding Registers (HREG) which are set in the ‘Data Type Field’. The ‘Address Offset’ field is the actual address to be read from the RTU in standard Modbus format. The RTUs register address will be offset by 41000 in standard Modbus format. This means that register #R1 will be addressed with an ‘Address Offset’ of 41001. Register #R10 would use 41010 as the offset. A description of the Modbus addressing and their use in the Kingfisher RTUs is contained in the Toolbox Manual Section 6.11 starting on page 176. The number of digits to use is set in the ‘Field Dimensions’ setup. Normal integer values (eg Accumulator values) will use the DBLEWORD(Bin) setup in the ‘Data Format’ setup. Real data types (floating point format)(eg 16 bit Analog values or BCD values) use the ‘Data Format’ of FLOAT.

Using a BIT type for ‘Data Format’ the RTU address mapping appears as follows:

Address Offset	Bit Index	RTUs Address	Notes
41001	0	#R1.1	
41001	1	#R1.2	
41001	15	#R1.16	
41010	8	#R10.9	
41100	15	#R100.16	

As can be seen the Least Significant Bit (LSB) of the Modbus message is 0 with the Most Significant Bit (MSB) being 15. The RTUs LSB is 1 with the MSB being bit 16. This gives a bit offset of 1 for mapping data between the 2 devices.

Note that the use of DNP3 protocol (for comms to other devices) maps hardware registers to specific local registers and requires a greater understanding of how DNP3 is implemented in a Kingfisher RTU.

A Message Field can be used to substitute a text message for either state of a binary input. By clicking on the ‘Edit Message’ button the message to be displayed when the input state is 0 and 1 can be defined. The maximum message size is limited to the ‘Field Width’ which has been defined in the ‘Field Dimensions’ section.

1.1.4 Uploading and Downloading Configurations between a PC and a Uniop panel.

An existing Uniop configuration can be uploaded to a PC (from a Uniop panel) for editing and reuploading.

Select <transfers>, <upload>.

Once the Panel configuration has been completed and saved the configuration can be downloaded to the Panel via the 'Transfers' and 'Download' Menu. The Panel must be in configuration mode before a new configuration can be downloaded. To put the Panel into configuration mode press and hold down the 'ENTER' key in the bottom right hand corner of the Panel.

This will bring up the setup menu. Press the left arrow key '←' on the display to cycle through the choices until the 'CFG' is selected. Hit the ENTER button again and the Panel will go into configuration mode. Once in configuration mode the configuration can be downloaded.

Once the download is complete the Panel will automatically go into run mode. In run mode the Panel will continually request the required data from the RTU. If comms is lost to the RTU a Comms Fail message will be displayed on the Panel display until communications has been re-established.

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TECHNICAL PAPER – UNIOP DISPLAY PANEL (MD02R SERIES)



KINGFISHER TELEMETRY
