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Micromod Extended Modbus

Information Sheet for Crimson v2.0

Compatible Devices

- Micromod Devices using Modbus, with or without command 65

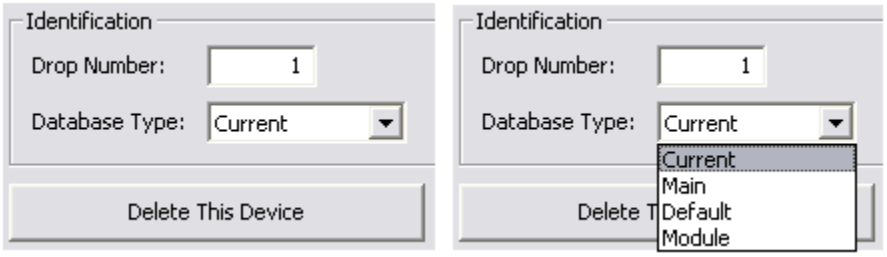
Verified Device

- MOD 30ML

Device Options

Drop Number: Select the node address for the device.
Database Type: Select the database to access.

Figure 1: Device Selections

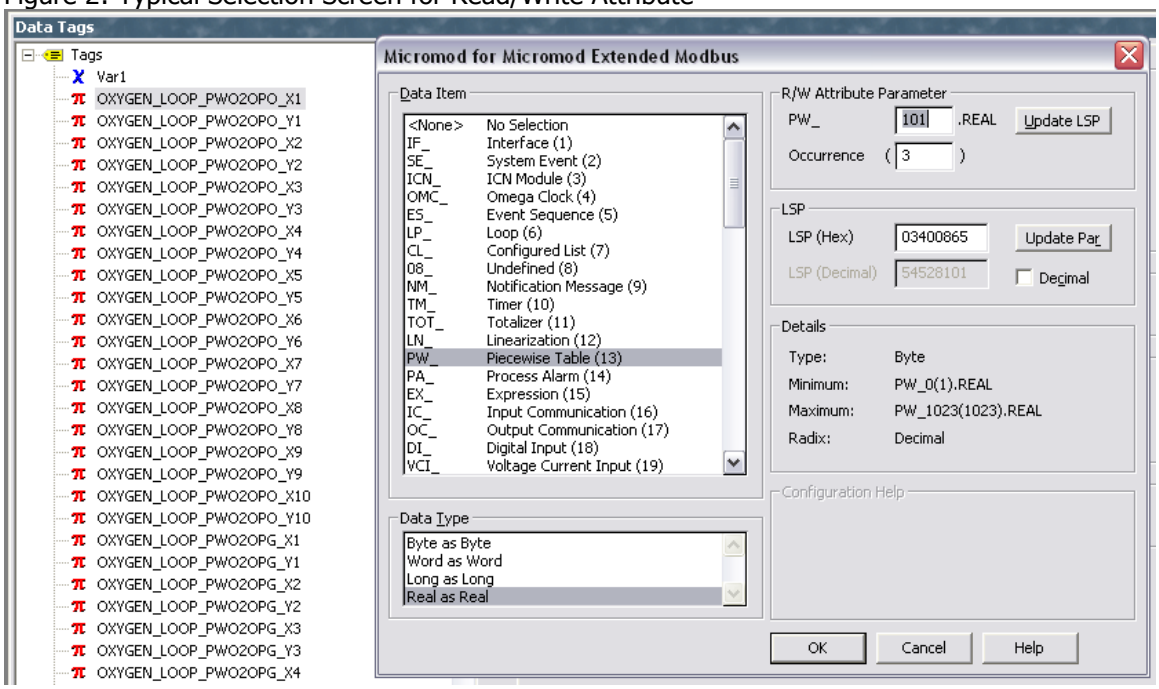


Accessible Data

Prefix	Description	Min Size	Max Size	Notes
Read Attribute Selections				
IF_	Interface (1)	Byte	Real	
SE_	System Event (2)	Byte	Real	
ICN_	ICN Module (3)	Byte	Real	
OMC_	Omega Clock (4)	Byte	Real	
ES_	Event Sequence (5)	Byte	Real	
LP_	Loop (6)	Byte	Real	
CL_	Configured List (7)	Byte	Real	
08_	Undefined (8)	Byte	Real	
NM_	Notification Message (9)	Byte	Real	
TM_	Timer (10)	Byte	Real	
TOT_	Totalizer (11)	Byte	Real	
LN_	Linearization (12)	Byte	Real	
PW_	Piecewise Table (13)	Byte	Real	
PA_	Process Alarm (14)	Byte	Real	
EX_	Expression (15)	Byte	Real	
IC_	Input Communication (16)	Byte	Real	
OC_	Output Communication (17)	Byte	Real	
DI_	Digital Input (18)	Byte	Real	
VCI_	Voltage Current Input (19)	Byte	Real	
CJI_	Cold Junction Input (20)	Byte	Real	
TI_	Thermocouple Input (21)	Byte	Real	
TTI_	TC Transmitter Input (22)	Byte	Real	
DIM_	Digital Input Module (23)	Byte	Real	
DOM_	Digital Output Module (24)	Byte	Real	
DDOM_	Dual Digital Output Module (25)	Byte	Real	
WDOM_	Wide Digital Output Module (26)	Byte	Real	
VCIM_	Voltage/Current Input Module (27)	Byte	Real	
CJIM_	Cold Junction Input Module (28)	Byte	Real	
TIM_	Thermocouple Input Module (29)	Byte	Real	
AOM_	Analog Output Module (30)	Byte	Real	
RTI_	RTD Input (31)	Byte	Real	
RIM_	Resistance Input Module (32)	Byte	Real	
RTTI_	RTD Transmitter Input (33)	Byte	Real	
WRIM_	Wide Resistance Input Module (34)	Byte	Real	
PID_	PID Control (35)	Byte	Real	
RI_	Resistance Input (36)	Byte	Real	
MSC_	Modbus Slave Communication (37)	Byte	Real	
ML_	Modbus List (38)	Byte	Real	

SM_	Supervisory Message (39)	Byte	Real	
SEQ_	Sequence (40)	Byte	Real	
RIO_	CS31 Interface Module (41)	Byte	Real	
RDIM_	Remote Digital Input Module (42)	Byte	Real	
RDOM_	Remote Digital Output Module (43)	Byte	Real	
44_	Undefined (44)	Byte	Real	
45_	Undefined (45)	Byte	Real	
46_	Undefined (46)	Byte	Real	
47_	Undefined (47)	Byte	Real	
AIN_	Onboard Analog Input (48)	Byte	Real	
AOUT_	Onboard Analog Output (49)	Byte	Real	
DISP_	Display (50)	Byte	Real	
DIF_	Display Interface (51)	Byte	Real	
PAD_	Process Alarm Display (52)	Byte	Real	
TL_	Tuning List (53)	Byte	Real	
ST_	State Table (54)	Byte	Real	
TMPL_	Template (55)	Byte	Real	
RSK_	Ramp/Soak (56)	Byte	Real	

Figure 2: Typical Selection Screen for Read/Write Attribute

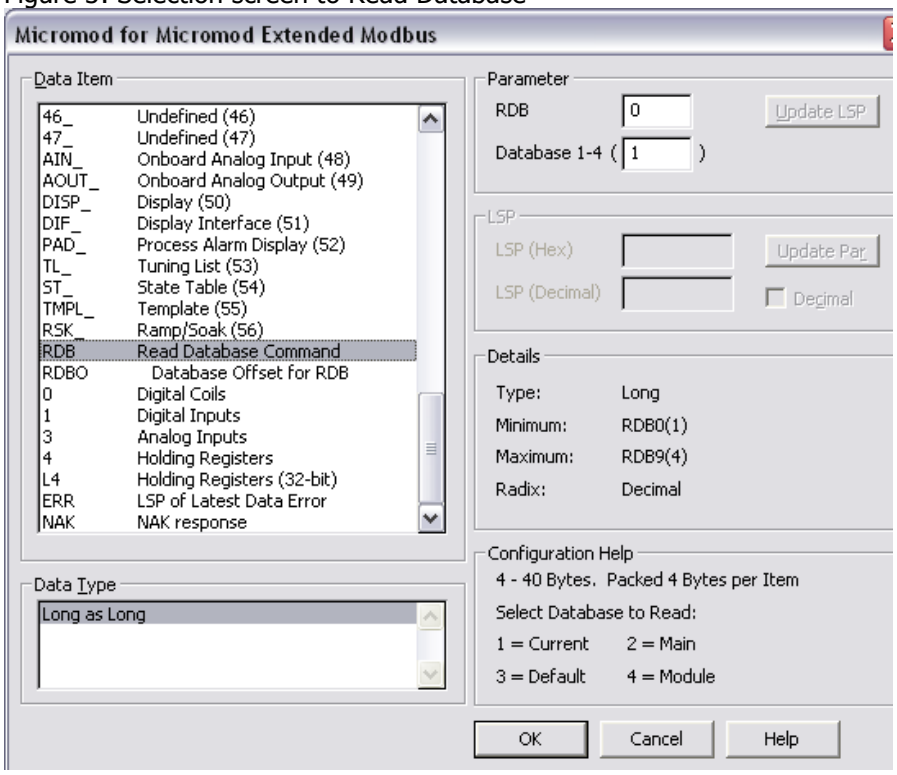


If programming or modifying a tag manually, select the block type on the left of the dialog box. On the right, the programmer may enter the parameter number, and occurrence in the top section. Selecting "Update LSP" will show the new LSP in the 2nd box. The programmer may also enter a known LSP in the 2nd block, either in Hex, or in Decimal if the "Decimal" box is checked. If that is done, the new value will not be saved until "Update Par" is selected.
The "Details" section shows the Parameter and (Occurrence) limitations.
The Data Type, at lower left, must be at least the size of the data being returned.

Read Database Selections

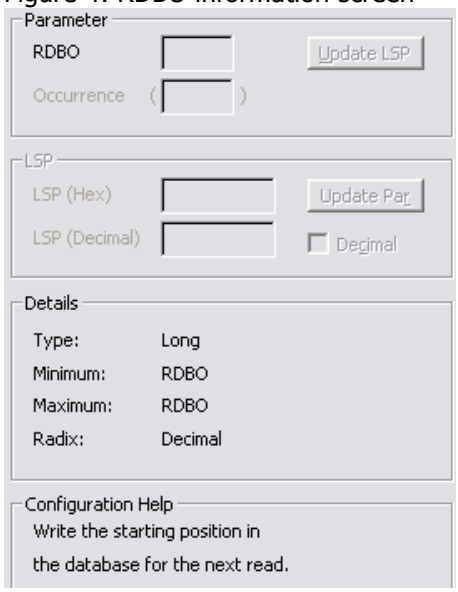
RDB	Read Database Command	Long		
RDBO	Database Offset for RDB	Long		

Figure 3: Selection screen to Read Database



Each value of RDB, 0 – 9, holds 4 bytes of the database. The programmer writes a value to RDBO to set the offset into the database to get those 4 to 40 bytes. By transferring the received bytes to internal storage, the programmer can increment RDBO appropriately, and collect as many database bytes as necessary. Select the database by the number in "Database 1-4".

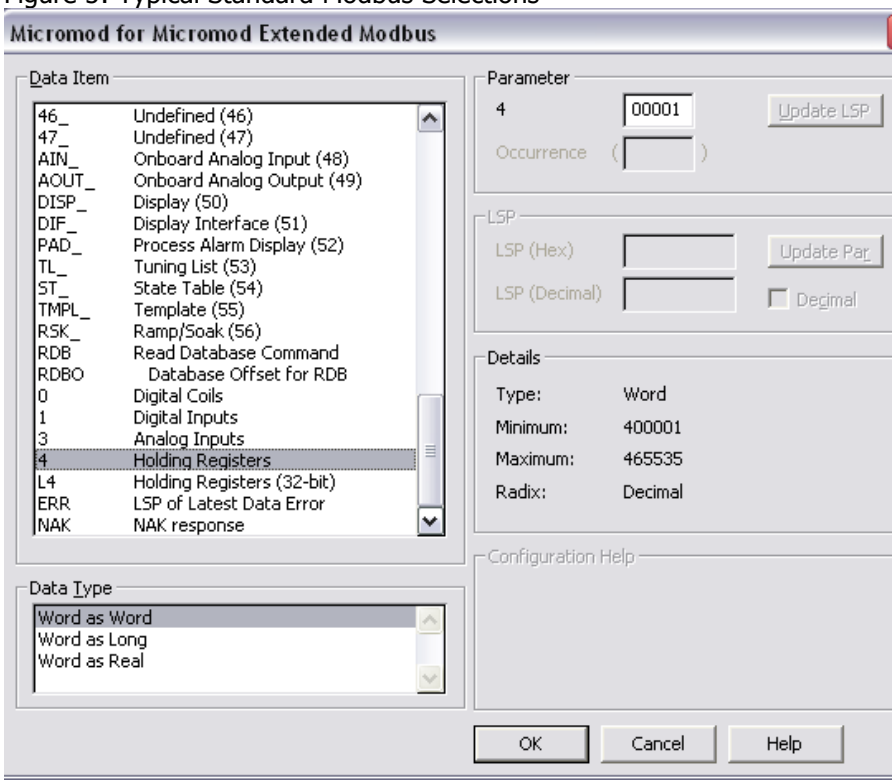
Figure 4: RDBO information screen



Standard Modbus

0	Digital Coils	Bit		
1	Digital Inputs	Bit		
3	Analog Inputs	Word	Real	
4	Holding Registers	Word	Real	
L4	Holding Registers (32-bit)	Long	Real	

Figure 5: Typical Standard Modbus Selections

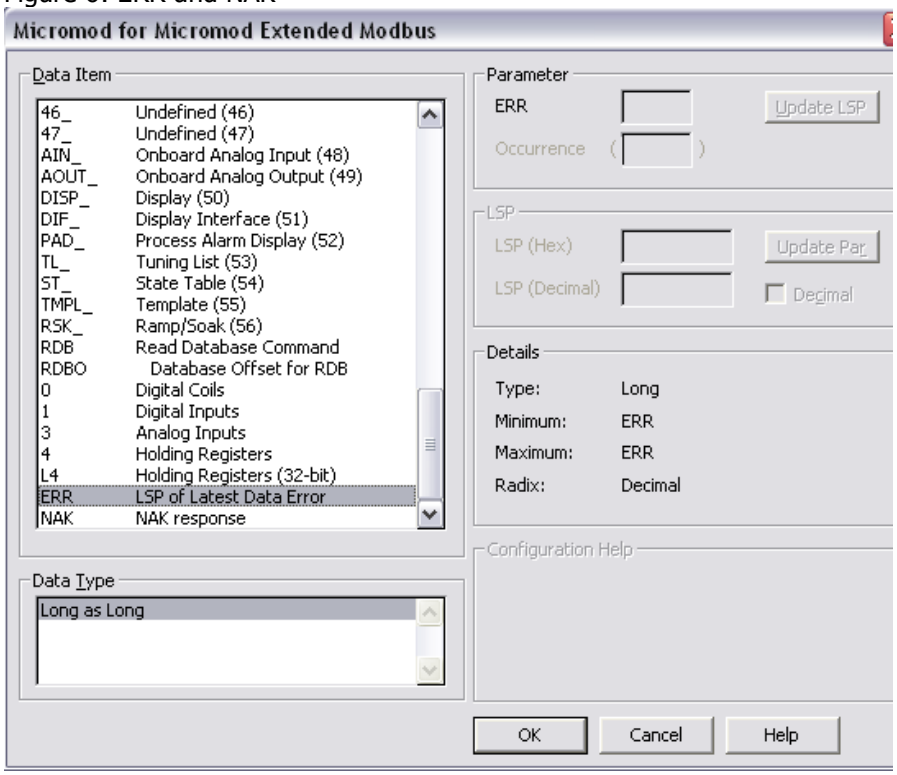


Note that selections 0-4 will read a single word per parameter, therefore a Long, or Real requires 2 separate addresses. L4 will return a 32-bit value using a single address.

Internal Error Indicators

ERR	LSP of Latest Data Error	Long		
NAK	NAK response	Byte		

Figure 6: ERR and NAK



ERR contains the value of an LSP that is in error. Any write will reset ERR to 0.
NAK contains the code if a request cannot be executed. Any write will reset NAK to 0.

Importing MIF Files:
An MIF file may be imported. The data necessary to execute the Read Attribute command will be assigned to tags.

Characters in the name that are not alphabetic and not numerals, will be converted to underscores, so a name such as OXYGEN LOOP.PWO2OPO.X1 will display as OXYGEN_LOOP_PWO2OPO_X1.

Names exceeding 24 characters will be processed to reduce their size. First, underscores will be removed. If that is insufficient, vowels will be removed, working from right to left, until the name is 24 characters or fewer.

It is important to note that the Device will use the name of the imported file, so that name must be entered as a device before importing, or the tags will all be set to internal.

Exporting Tag Names:
The exported file is not an MIF file, but a .csv in the standard Red Lion Controls format. All information required to reconstruct the tag is exported.

RS232 Connections to rear panel of MOD 30ML

Kadet 04	Kadet 06/08	Kadet 06/08 Aux	G3	Signal	30ML
6	2	1	5	Tx – Rx	2
9	3	6	2	Rx – Tx	3
5	5	5	3/4	0V	1