Monroe Electronics Model 177A Modbus Protocols

Communication via RS-485, 8 data bits, No parity, 1 stop bit

Read Relay or LED (using Read-Coil command):

From Master (PC software or PLC):

Byte 1	2	3	4	5	6	7	8
Station#	Command	CoilAdrHi	CoilAdrLo	dataLenH	dataLenL	CrcH	CrcL
1-255	0x01	0	0-24	0	1	xx	xx

The request consisted of a Station# and the command code 01 followed by a 2-byte starting address, specifying the relay or LED to be read.
dataLenH (data length high byte) must be 0, dataLenLow byte is 1.
CoilAdrH (Coil address high byte) is 0
CoilAdrL (Coil address low byte) is as follows:

    0   Channel 1 Alarm (red) LED
    1   Channel 2 Alarm (red) LED
    2   Channel 3 Alarm (red) LED
    3   Channel 4 Alarm (red) LED
    4   Channel 1 Warning (Amber) LED
    5   Channel 2 Warning (Amber) LED
    6   Channel 3 Warning (Amber) LED
    7   Channel 4 Warning (Amber) LED
    8   Channel 1 OK (Green) LED
    9   Channel 2 OK (Green) LED
    10   Channel 3 OK (Green) LED
    11   Channel 4 OK (Green) LED
    12   Channel 1 Alarm Relay
    13   Channel 2 Alarm Relay
    14   Channel 3 Alarm Relay
    15   Channel 4 Alarm Relay
    16   Channel 1 Warning Relay
    17   Channel 2 Warning Relay
    18   Channel 3 Warning Relay
    19   Channel 4 Warning Relay
    20   Channel 1 OK Relay
    21   Channel 2 OK Relay
    22   Channel 3 OK Relay
    23   Channel 4 OK Relay
    24   System Alarm Relay

177A reply to Read-Coil:

Byte 1	2	3	4	5	6
Station#	Command	# of data	Coil Value	CrcH	CrcL
1-255	0x01	1	0=Off 0xff=On	xx	xx

Set Relay or LED (using Write-Coil command):

From Master (PC software or PLC):

Byte 1	2	3	4	5	6	7	8
Station#	Command	CoilAdrHi	CoilAdrLo	Data1	Data2	CrcH	CrcL
1-255	0x05	0	0-24	0=Off 0xff=On	0	xx	xx

The request consisted of a Station# and the command code 05 followed by a 2-byte starting address, specifying the Relay or LED to be set, a data byte, specifying the binary value to set (0=Off, 0xff=ON) and an additional byte always set to 0.

177A reply to Write-coil is identical to the received packet:

Byte 1	2	3	4	5	6	7	8
Station#	Command	CoilAdrHi	CoilAdrLo	Data1	Data2	CrcH	CrcL
1-255	0x05	0	0-24	0=Off 0xff=On	0	xx	xx

Read Channel display (using Read-Register command):

From PC or PLC:

Byte 1	2	3	4	5	6	7	8
Station#	Command	RegAdrHi	RegAdrLo	DataLenH	DataLenL	CrcH	CrcL
1-255	0x03	0	0 = Channel1 1 = Channel2 2 = Channel3 3 = Channel4	xx	xx	xx	xx

RegAdrL (Register Address Low byte) is as follows:
- 0   Channel 1
- 1   Channel 2
- 2   Channel 3
- 3   Channel 4

177A reply to Read-Register:

Byte 1	2	3	4	5	6	7
Station#	Command	# of data	DataHiByte	DataLoByte	CrcH	CrcL
1-255	0x03	1	xx	xx	xx	xx

Write Channel display (using Write-Register command):

From PC or PLC:

Byte 1	2	3	4	5	6	7	8
Station#	Command	RegAdrHi	RegAdrLo	DataHi	DataLo	CrcH	CrcL
1-255	0x06	0	0 = Channel1 1 = Channel2 2 = Channel3 3 = Channel4	xx	xx	xx	xx

177A reply to Write-Register is identical to the received packet.

Note:
1) 177A must be in Group-Disable mode to retain the written value. The Group-Disable can be accessed by pressing the front panel button or from pc software Monitor.
2) If the command packet has 0 for Station#, the 177A will execute the Write-Coil and Write-Reg commands, but with No reply.