

MPRNet I/O Control Protocol – 041305

Every AWID's Network (TCP/IP) based Multi-Protocol RFID (MPR) reader provides four (4) general purpose Input and Output controls. It's a separate software unit from the RFID reader module. The TCP port number for the I/O control is 4001. After making a connection the I/O server will start monitoring the Inputs status and send out an event whenever the status changes. The scan rate is 10 ms.

I. Output Command

1. Dedicated On/Off control

Command: 0x06 0x00 On/Off Pin xx xx

On/Off: 0x00 – On
0x01 – Off

Pin¹: 0x00 – Output 1
0x01 – Output 2
0x02 – Output 3
0x03 – Output 4

Example:

Output 1 On: 0x06 0x00 0x00 0x00 0x5C 0xA6

Output 1 Off: 0x06 0x00 0x01 0x00 0x6F 0x97

Output 2 On: 0x06 0x00 0x00 0x01 0x4C 0x87

Output 2 Off: 0x06 0x00 0x01 0x01 0x7F 0xB6

Output 3 On: 0x06 0x00 0x00 0x02 0x7C 0xE4

Output 3 Off: 0x06 0x00 0x01 0x02 0x4F 0xD5

Output 4 On: 0x06 0x00 0x00 0x03 0x6C 0xC5

Output 4 Off: 0x06 0x00 0x01 0x03 0x5F 0xF4

Ack: 0x00 – command accepted for execution
0xFF – command received in error

¹ This refers to value of "Pin ID" in the command and it does not represent the physical pin number in the terminal block of the reader.

Response:

0x06 0xFF 0xFF 0x00 0x6F 0xC5 – Success on command execution
0x06 0xFF 0xFF 0xFF 0x71 0x35 – Command execution failed

2. Flash On/Off Control

Command: 0x09 0x00 0x02 Pin OnTime OffTime TotalCount xx xx

Pin: 0x00 – Output 1
0x01 – Output 2
0x02 – Output 3
0x03 – Output 4
OnTime: 0x01~0xFF – Number x 100ms ON
OffTime: 0x01~0xFF – Number x 100ms OFF
TotalCount: 0x01~0x64 – Total ON Counts (#times to flash)

Example:

Output 1 flashes at 300ms On, 200ms Off rate and flashes 10 times

0x09 0x00 0x02 0x00 0x03 0x02 0x0A xx xx

Output 2 flashes at 200ms On, 300ms Off rate and flashes 15 times

0x09 0x00 0x02 0x01 0x02 0x03 0x0F xx xx

Ack: 0x00 – command accepted for execution
0xFF – command received in error

Response:

0x06 0xFF 0xFF 0x00 0x6F 0xC5 – Command execution succeeded
0x06 0xFF 0xFF 0xFF 0x71 0x35 – Command execution failed
0x06 0xFF 0xFF 0x80 0xFE 0x4D – Pin busy (Previous flash command not yet finished)

II. Input Response

- a. Input 1 Hi: 0x06 0xFF 0x00 0x01 0x7C 0x1B
- b. Input 2 Hi: 0x06 0xFF 0x01 0x01 0x4F 0x2A
- c. Input 3 Hi: 0x06 0xFF 0x02 0x01 0x1A 0x79
- d. Input 4 Hi: 0x06 0xFF 0x03 0x01 0x29 0x48
- e. Input 1 Lo: 0x06 0xFF 0x00 0x00 0x6C 0x3A
- f. Input 2 Lo: 0x06 0xFF 0x01 0x00 0x5F 0x0B

g. Input 3 Lo: 0x06 0xFF 0x02 0x00 0x0A 0x58

h. Input 4 Lo: 0x06 0xFF 0x03 0x00 0x39 0x69

III. GPIO Status

The following command can be issued to obtain the current statuses of Inputs and Outputs.

Command: 0x05 0x00 0x03 xx xx

Ack: 0x00 – command accepted for execution

0xFF – command received in error

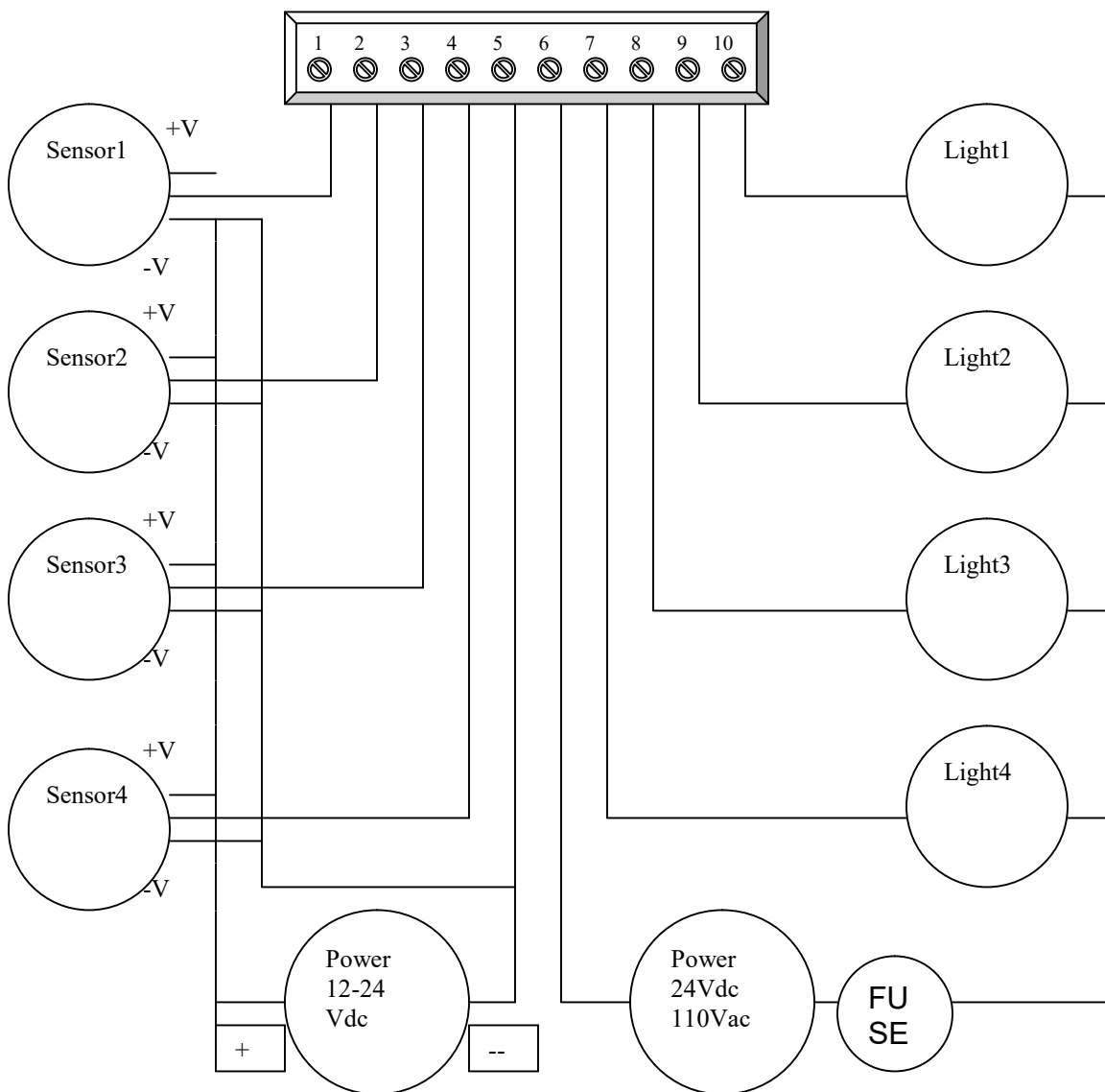
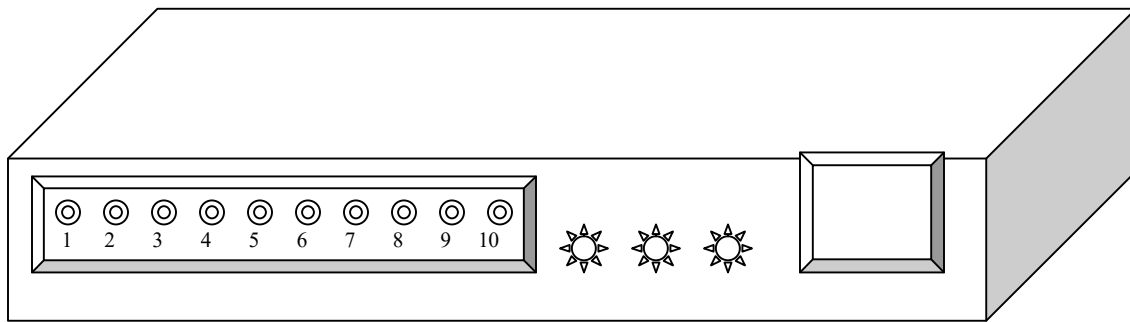
Response:

0x0D 0x00 0x03 In_1 In_2 In_3 In_4 Out_1 Out_2 Out_3 Out_4 xx xx

Where each of the In_1, In_2, In_3 and In_4 takes a value of either 0x01 or 0x00 denoting the High or Low status of the corresponding Input and Out_1, Out_2, Out_3 and Out_4 a value of 0x01 or 0x00 for On or Off² of the corresponding Output.

² It should be noted that this convention is opposite to what is used for the Output pin Dedicated On/Off command where 0x00 specifies the “ON” setting and 0x01 for “OFF”.

IV. Wiring Diagram for an application where photo sensors (input) and lights (output) are used.



*Sensor: OC, PNP, NO

*Light: Current <80mA