

## OPTOISOLATED SERIAL PORT for FULL-ARM-05 and FA-07

The Full-Arm-01, Full-Arm-05, FA-07, FA-15 use an optoisolated port.

Attached is a scheme draft of its output used with a "20mA current loop" interface for the connection to a Repeater.

Here is the information regarding the serial protocol used on the Full-Arm-05 and FA-07 apparatuses:

Serial type: 2400-N-8-1

The apparatuses send out continuously a string of 10 bytes. The string is repeated every about 42msec.

Here is what every byte of the string contains:

1° byte: FFh = Start string

The FFh value identifies the beginning of the string.

2° byte: XXh = Right score

Ex.: if =06h , the right score is 6

3° byte: XXh = Left score

Ex.: if =12h, the left score is 12

4° byte: XXh = Seconds of the time (units and tens)

Ex.: if =56h , the seconds of the time = 56.

5° byte: 0Xh = Minutes of the time (only units)

Ex.: if =02h , the minutes of the time = 2.

6° byte: XXh = Define the state of the lamps (red, green, whites, and yellows). Every bit defines the state of a lamp (zero=OFF, 1=ON).

Following is the correspondence of the 8 bits:

Bit D0 = Left white lamp

Bit D1 = Right white lamp

Bit D2 = RED lamp (left)

Bit D3 = GREEN lamp (right)

Bit D4 = Right yellow lamp

Bit D5 = Left yellow lamp

Bit D6 = 0 not used

Bit D7 = 0 not used

Example: if byte 6° = 14h , we have D2=1 (red light=on) and D4=1 (right yellow light=on)

7° byte: 0Xh = Number of matches and Priorite signals.

The D0 e D1 bits define the number of matches (from 0 to 3):

D1=0 D0=0 Num.Matches = 0

D1=0 D0=1 Num.Matches = 1

D1=1 D0=0 Num.Matches = 2

D1=1 D0=1 Num.Matches = 3

The D2 e D3 bits define the signals of Priorite:

D2 = Right Priorite (if=1 is ON)

D3 = Left Priorite (if=1 is ON)

Example: if byte 7° = 0Ah (D0=0, D1=1, D2=0 D3=1) , the number of Matches is =2 and the Left Priorite lamp is ON.

8° byte: XXh This byte is only for our use. Do not consider this byte.

Its value is always different from FFh.

9° byte: Red and Yellow penalty cards.

The 4 bits D0, D1, D2, e D3 are used on the following way:

D0 = Right RED penalty card

D1 = Left RED penalty card

D2 = Right YELLOW penalty card

D3 = Left YELLOW penalty card

Do not consider the bit D4 and D5 which can be at zero or 1, instead the bit D6 and D7 are always =0.

Example: if byte 8° = 38h , we have D3=1 and so the left yellow penalty card is ON.

10° byte: CRC , it is the sum without carry of the 9 previous bytes.

As example, the string could be:

FFh, 06h, 12h, 56h, 02h, 14h, 0Ah, 00h, 38h, 56h

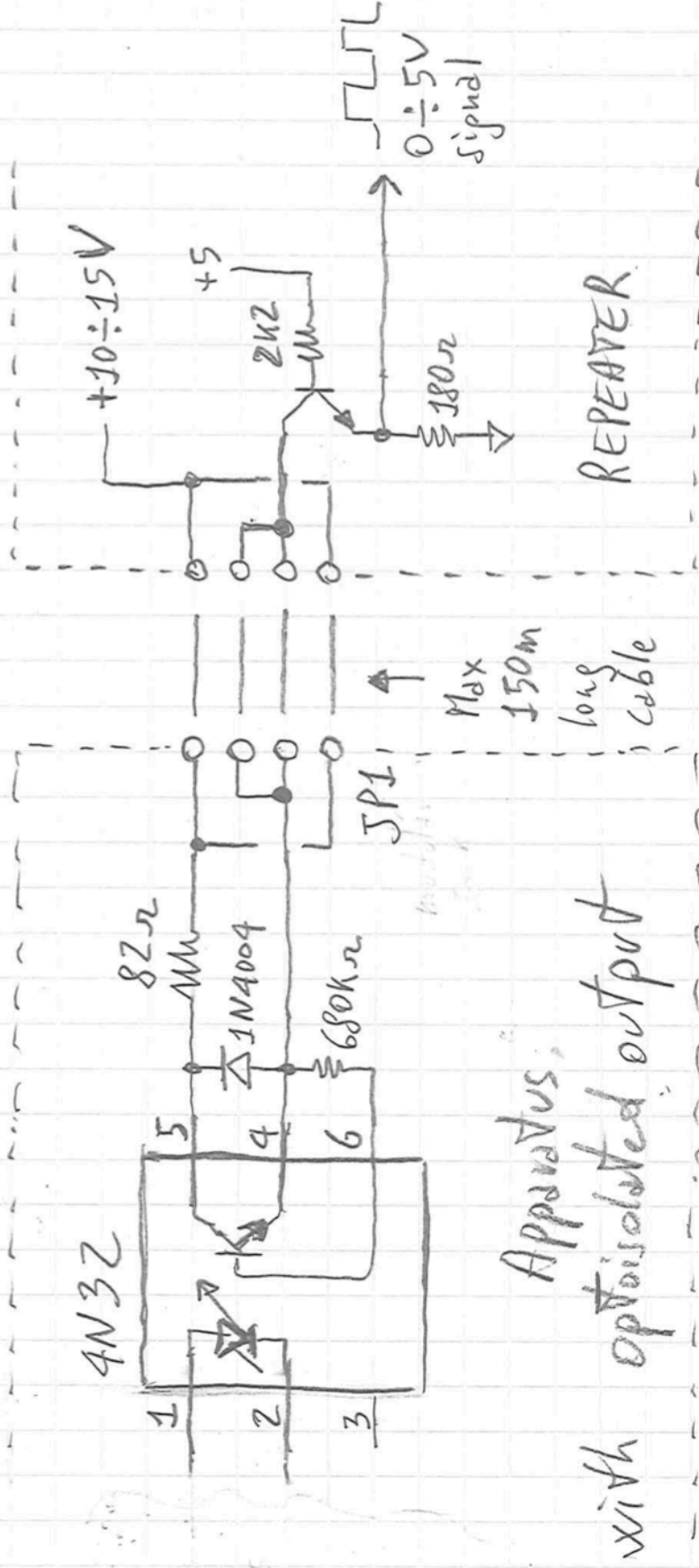
which will display: Right score = 6, Left score = 12, Time = 2:56

The Lamps ON are: Red, Yellow right, Left priorite.

Number of Matches = 2

Left yellow penalty lamp = ON.

Serial port on Full-Arm-01, Full-Arm-05, FA-07  
 for 20mA current loop interface



JPI: Modular jock connector, with 6 position 4 contact  
 for RJ14 plug.