

Receiver Information

Located on top of the receiver unit is an antenna connector, a DB25 connector, eight LED's and two 17 pin connectors. See the receiver drawing, 98565010 for the connector pin outputs. Undefined switch outputs are generally labeled as SW1, SW2, etc. These designations relate to the transmitter input nomenclature on drawings 98565158, and 98565009. A remote antenna suitable for operation at 902 to 928Mhz must be connected to the BNC antenna input. All components of the antenna circuit should have a characteristic impedance of 50 ohms. Antenna type and placement will have a significant influence on the nominal operating distance.

The eight receiver LED's provide basic diagnostics. Each LED shows information that is important to the over all system performance. The LED's and their functions are listed below. The following designations are also labeled on the receiver for easy identification.

PWR – When this LED is on, the receiver unit is receiving the proper supply voltage for operation.

TX Online – This LED comes on when the receiver picks up a transmitter that has been turned on. This light will go off when: 1.) a transmitter is powered down, and 2.) when communication between the transmitter and receiver is lost for a certain time limit.

Enc. Active – Encoder active LED comes on when the enable switch is depressed on the transmitter and the encoders are being used by the operator. When the encoders are set, a 25 second time frame will pass and the LED will turn off. To activate the encoders, the enable switch must be pressed again to reactivate. This feature saves on the transmitter battery life, since the encoders draw a large current they cannot be left on all the time.

Signal Strength – This LED indicates the relative strength of the received signal. When at least a usable amount of signal is coupled to the antenna port this LED will flash 10 times per second. The duty cycle of the flash provides a rudimentary approximation of signal strength. For example a weak signal will result in short blips while a strong signal will keep the LED on for the entire 100mSec. Flash period, i.e. virtually constantly illuminated.

OK msg – OK message LED indicates that the receiver has received a valid message sent by the transmitter. The transmitter on the average will send 10 messages every second. Under ideal conditions, this LED will flash 10 times per second indicating that every message sent was received and verified. As conditions become more adverse, or

multiple transmitters are utilized on the same frequency in the same area, collisions and missed messages will occur resulting in an irregular and inconsistent flash pattern. Gaps in the typical flash rate will result from missed or invalid messages.

1sec – 1 second data loss LED comes on when the receiver has not received a valid message from the transmitter for more than 1 second from the last correct message. At this point all receiver outputs are set to OFF except for the NO COMMS output, which will become active. Concurrently, the E-Stop contact will open. The receiver will reset and enter its power up search mode.

Any Output On – When any transmitter switch is being operated this LED will come on while the command is present.

System Switch Settings

Located on the side of the receiver is a panel door. Behind the door panel are two dip switch units. Each unit consists of eight individual switches. The top dip switch unit is not being used for this application. The bottom unit switches 1 to 5 are used to set the system's address. Switches 6,7, and 8 are used to set the frequency of the receiver.

Note: It is VERY IMPORTANT that the receiver and transmitter dip switch settings 1 to 8 match or the receiver will ignore or not even see the transmitted signal. The receiver switches are designated as OPEN when they are up. Conversely, the receiver switches are CLOSED when pushed down. The OPEN position is printed on the body of the switch. The transmitter switches are low profile and labeled as ON when slid towards the antenna. They are then by default OFF when slid away from the antenna. The ON position is printed on the body of the switch. For this system, CLOSED at the receiver corresponds to ON at the transmitter and an OPEN at the receiver requires an OFF at the transmitter.

Receiver Output Ratings

1.) Open Collector Outputs:
(SW1-SW16, Low Battery, Dead Battery, No Comms)

45VDC Max, 250mA Max, Mosfet Device, Typical "ON" Resistance – 1.3 ohms.

2.) Electro-Mechanical Contacts: (E-STOP, Receiver Health)

5 Amps, 250VAC, 5 Amps, 30VDC

3.) Analog Output: 0 to 10.0 VDC Resolution – 8 bits, 39 mV per step Minimum load resistance – 1000 ohms (10mA MAX continuous) Short term short circuit protection.

4.) Encoder (#1, #2, #3) RS-422 Differential.

Table 1 Frequency Selection Chart

Channel	SW1	SW2	SW3	SW4	SW5	SW6	SW7,8	Freq1
1	OFF	OFF	OFF	OFF	OFF	OFF	N/A	904.00
2	ON	OFF	OFF	OFF	OFF	OFF	N/A	904.44
3	OFF	ON	OFF	OFF	OFF	OFF	N/A	904.88
4	ON	ON	OFF	OFF	OFF	OFF	N/A	905.32
5	OFF	OFF	ON	OFF	OFF	OFF	N/A	905.76
6	ON	OFF	ON	OFF	OFF	OFF	N/A	906.20
7	OFF	ON	ON	OFF	OFF	OFF	N/A	906.64
8	ON	ON	ON	OFF	OFF	OFF	N/A	907.08
9	OFF	OFF	OFF	ON	OFF	OFF	N/A	907.52
10	ON	OFF	OFF	ON	OFF	OFF	N/A	907.96
11	OFF	ON	OFF	ON	OFF	OFF	N/A	908.40
12	ON	ON	OFF	ON	OFF	OFF	N/A	908.84
13	OFF	OFF	ON	ON	OFF	OFF	N/A	909.28
14	ON	OFF	ON	ON	OFF	OFF	N/A	909.72
15	OFF	ON	ON	ON	OFF	OFF	N/A	910.16
16	ON	ON	ON	ON	OFF	OFF	N/A	910.60
17	OFF	OFF	OFF	OFF	ON	OFF	N/A	911.04
18	ON	OFF	OFF	OFF	ON	OFF	N/A	911.48
19	OFF	ON	OFF	OFF	ON	OFF	N/A	911.92
20	ON	ON	OFF	OFF	ON	OFF	N/A	912.36
21	OFF	OFF	ON	OFF	ON	OFF	N/A	912.80
22	ON	OFF	ON	OFF	ON	OFF	N/A	913.24
23	OFF	ON	ON	OFF	ON	OFF	N/A	913.68
24	ON	ON	ON	OFF	ON	OFF	N/A	914.12
25	OFF	OFF	OFF	ON	ON	OFF	N/A	914.56
26	ON	OFF	OFF	ON	ON	OFF	N/A	915.00
27	OFF	ON	OFF	ON	ON	OFF	N/A	915.44
28	ON	ON	OFF	ON	ON	OFF	N/A	915.88
29	OFF	OFF	ON	ON	ON	OFF	N/A	916.32
30	ON	OFF	ON	ON	ON	OFF	N/A	916.76
31	OFF	ON	ON	ON	ON	OFF	N/A	917.20
32	ON	ON	ON	ON	ON	OFF	N/A	917.64
33	OFF	OFF	OFF	OFF	OFF	ON	N/A	918.08
34	ON	OFF	OFF	OFF	OFF	ON	N/A	918.52
35	OFF	ON	OFF	OFF	OFF	ON	N/A	918.96
36	ON	ON	OFF	OFF	OFF	ON	N/A	919.40
37	OFF	OFF	ON	OFF	OFF	ON	N/A	919.84
38	ON	OFF	ON	OFF	OFF	ON	N/A	920.28
39	OFF	ON	ON	OFF	OFF	ON	N/A	920.72
40	ON	ON	ON	OFF	OFF	ON	N/A	921.16
41	OFF	OFF	OFF	ON	OFF	ON	N/A	921.60
42	ON	OFF	OFF	ON	OFF	ON	N/A	922.04
43	OFF	ON	OFF	ON	OFF	ON	N/A	922.48
44	ON	ON	OFF	ON	OFF	ON	N/A	922.92
45	OFF	OFF	ON	ON	OFF	ON	N/A	923.36
46	ON	OFF	ON	ON	OFF	ON	N/A	923.80
47	OFF	ON	ON	ON	OFF	ON	N/A	924.24
48	ON	ON	ON	ON	OFF	ON	N/A	924.68
49	OFF	OFF	OFF	OFF	ON	ON	N/A	925.12
50	ON	OFF	OFF	OFF	ON	ON	N/A	925.56

904-926 MHz