RS232 Operation Instructions

The PressurePro RS232 Monitor is an upgraded model of our current Monitor. It offers all of the features of the current PressurePro Monitor while adding the capability of real-time RS232 data feed. With the addition of the RS232, users can monitor tire pressures via downloads of sensor data to their data acquisition and/or asset tracking type products or can store to a PDA or computer. The upgraded RS232 interfaces with current Sensors.

RS232 Operating Instructions

1. The RS232 monitor functions the same as the current PressurePro Monitor System. The difference lies in the ability to transfer, in real time, by way of an RS232 data feed, the raw data transmissions that the Monitor receives from programmed Sensors.

2. A special power cord with a data cable plugs into a laptop for data transmission. When hooked up to the user's device the data transmission is automatic.

3. The user provides software in their laptop or other device to accept the data, store it, and send or analyze it in any manner. (PressurePro is available to assist with communication protocol.)

4. Plug in the Monitor using the power cord provided and follow the standard PressurePro Instructions for installation and monitoring of the desired Sensors for that vehicle.

RS232 Operation

The factory can enable RS-232 packet output PressurePro monitor. The communication out of the Monitor serial link (when enabled by appropriate hardware installation) is as follows (38400, N, 8, 1), for the sensor serial numbers that are recognized as 'programmed' by the monitor: Pressure is in PSI, temperature is nominally (n-2)*20C. Checksum is such that all bytes 0 thru 7 inclusive add to 0 (8-bit sum).

The communication out of the Monitor serial link is as follows (38400, N, 8, 1), for the sensor serial numbers that are recognized as 'programmed' by the monitor:

Sensor to Receiver								
Byte 0 Preamble	1	0	0	0	0	1	0	0
Byte 1	sn 23	sn 22	sn 21	sn 20	sn 19	sn 18	sn 17	sn 16
Byte 2	sn 15	sn 14	sn 13	sn 12	sn 11	sn 10	sn 9	sn 8
Byte 3	sn 7	sn 6	sn 5	sn 4	sn 3	sn 2	sn 1	sn 0
Byte 4	Pressure (PSI)							
Byte 5	TX Reason			Low Bat	Rptr	Temperature		
Byte 6	Matched Tire Location							
Byte 7	Checksum							

RS232-unit pin out is:

1-9 to 16VDC
2-TXD
3-RXD, not used
5-GND

Pressure is in PSI, temperature is nominally (n-2)*20C.
Checksum is such that all bytes 0 thru 7 inclusive add to 0 (8-bit sum).

In normal 'steady state' operation, the sensor will send the pressure reading to the monitor approximately every 5 minutes to alert the driver of current tire pressure as two sets of two packets, spaced about 14 seconds apart.

If a low-pressure event occurs, the transmitter will send the pressure readings to the monitor receiver at a more frequent rate. For a 12.5%-low condition, packets are immediately sent 8 times with about 14 seconds between each transmitted pair of packets, and thereafter the condition is reported at the 'normal' 5-minute rate. If a 25%-low condition is sensed, packets are immediately sent every 14 seconds for about 16 hours, and thereafter the condition is reported at the 'normal' 5-minute rate. Pressure restoration will cancel the transmissions, but the 'new' pressure will not be transmitted until the next regular update. This will not change the alarm levels.

If the pressure drops below 'minimum' (6psi), the sensor will transmit this information 21 times (once every 14 seconds) and then stop transmitting.

When the air pressure is again above 8psi, the next stable (within 2psi on two consecutive 7-seconds-apart measurements) measured pressure is stored as the 'reference pressure', and a 'New Air' message is transmitted 8 times at 14 second intervals, then a 'regular' message 7 times also at 14 second intervals, before changing to 'normal' updates.

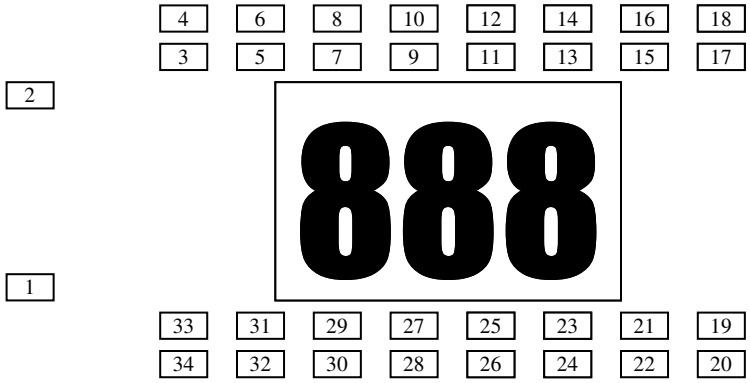
A Hall Effect trigger will cause one pair of transmissions (spaced 14 seconds) with code 'new magnet'.

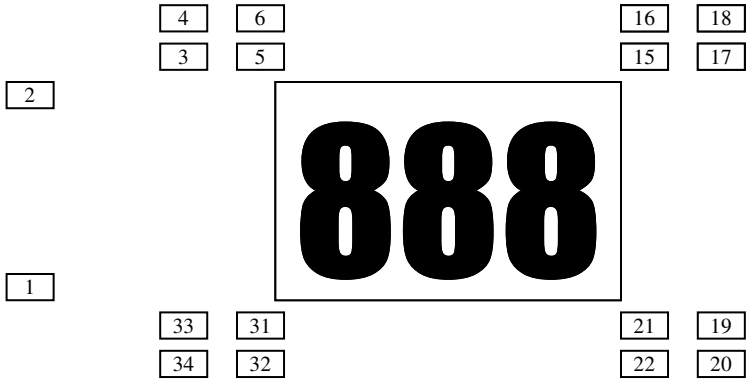
TX			
Regular Update Interval	0	0	0
Pressure Loss >= 12.5%	0	0	1
Pressure Loss >= 25%	0	1	0
TBD	0	1	1
TBD	1	0	0
TBD	1	0	1
New Air	1	1	0
New Magnet	1	1	1

1 TIRE LAYOUTS & LOCATION NUMBERS

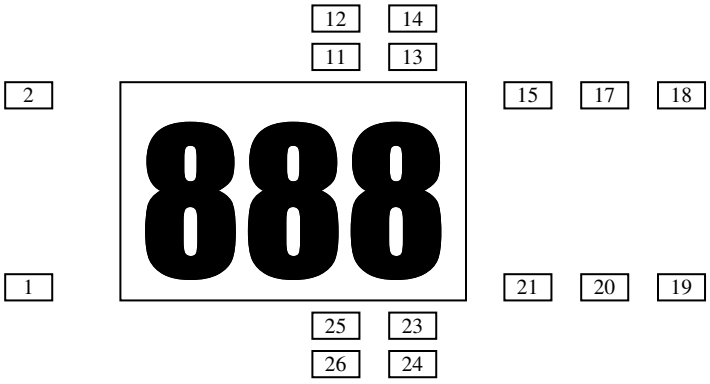
Full Tractor&Trailer (#1):

18-wheel Tractor&Trailer (#2):





RV/Tow (#3):



Auto/Truck (#5):