Protected by US Patent Nos. 8,183,992; 7,940,164; 7,944,347 and Other Pending Patents

Manufacturing LLC

Please read this manual carefully before using this product.

360HD

Monitors up to 36 different wheel positions

(This manual can be referred to the HD/HDR/HDRB/HDJ/HDJB models)

USER MANUAL

The DORAN 360HD is designed solely to monitor tire pressure. It is not designed to provide warning of a potential or actual tire blowout.

The National Highway and Traffic Safety Administration considers a tire flat when the pressure is 25% below the tire manufacturer's recommended operating pressure.

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I. INTRODUCTION

The DORAN 360HD is a real-time, wireless, electronic tire pressure monitoring system designed for heavy duty trucks. The DORAN 360HD can monitor pressures from 10 to 188 psi and is capable of displaying current tire pressures, whether the vehicle is moving or stationary. Although the 360HD will not prevent tires from losing pressure or failing, low pressure is the leading cause of premature tire failure. Additionally, the DORAN 360HD has a built in high temperature alarm, activated at 175°F, that can provide excessive heat warnings which can identify other potential wheel problems. The 360HD can be used on all pneumatic tires and can provide an early notification of potential problems and assist with proper tire pressurization maintenance.

The DORAN 360HD System consists of two basic components: Valve Stem Tire Sensors and a Monitor. The wireless sensors transmit coded RF signals to the monitor.
The monitor will then interpret the data, display current tire pressure readings, and alert the driver with audible and visual feedback if there is a pressure drop or excessive heat. The system will provide pressure alerts at 2 levels: 12.5% below baseline pressure and greater than 25% below baseline pressure. The high temperature alarm is activated at temperatures of 175°F and above. When used properly, the DORAN 360HD will inform the driver of tire pressure or temperature issues so the operator has the opportunity to make necessary adjustments before a serious problem occurs.

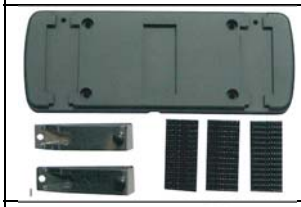
Tires and valve stems should be inspected thoroughly prior to installation of the DORAN 360HD System to ensure that they are in good condition. It is not uncommon to find valve stems that need replacing or low tire inflation when installing the DORAN 360HD system. DORAN recommends that rubber valve stems be replaced with brass or stainless steel stems as some rubber stems have been found to be inferior and can cause premature failure.

> Regular tire and valve stem visual inspections are recommended. A damaged sensor, tire, or valve stem can cause pressure loss. Inspect regularly. If faults are repeatedly observed, discontinue use of the system and contact DORAN Mfg. Toll Free 1-866-816-7233.

The 360HD cannot prevent tire/wheel overload. Overloading any tire is **extremely** dangerous and can cause the failure of **any suspension component**, not just tires! The **only** way to detect overloading is to weigh the vehicle. A vehicle should **never** be operated if the weight on any wheel is greater than the design specification. Even a correctly inflated tire can fail if overloaded.

Tires can fail for other reasons besides low pressure or overloading. Stay alert and watch for **other** tire problems that may be indicated by unusual noises, vibrations, uneven tread wear, or bulges on the tire. If any of these symptoms occur, have the tires checked **immediately** by a professional!

SYSTEM COMPONENTS

	Hook & Loop pads for installing Monitor	√	×
	Nylon wire tie kit	√	√
	Sensor for each tire purchased	×	×
	Antenna Kit (purchased Separately)	×	×

If you are missing <u>any</u> of these components, DO NOT proceed with the installation. Contact the manufacturer for any missing or replacement parts.

GLOSSARY OF TERMS

Normal Mode: When the monitor is monitoring all programmed sensors and there are not any faults, the monitor will display a Green Means Good™ indicator light and the display will show "on" (Black box products don't have the Green Means Good™ indicator light).

Alert Mode: When the monitor has received a signal that is outside of the parameters of the "Normal Operation" an alert will be displayed with icons describing the fault along with an audible beeping sound (Audible alarm is not available on the "black box" products). Pressing the Set or Program buttons can turn off the audible alarm.

Baseline Air Pressure: The normal operating pressure setting that is programmed into the monitor for each tire position. The monitor will calculate all alarms from this setting. The baseline pressure should ALWAYS be set when tires are at ambient temperature as temperatures directly affect pressure levels.

RF: The term used to identify Radio Frequency signals.

II. SETUP AND INSTALLATION

DORAN suggests that all users install a remote antenna to receive maximum performance from the system

1. INSTALLING THE MONITOR

The 360HD (Standard display) comes with a hook and loop mounting option. Other mounting options include: sun visor mount, windshield mount, dash mount, and pedestal mount. If you are using the hook and loop pads, clean all mounting surfaces thoroughly with alcohol to remove any grease, dust, or oils that could prevent proper adhesion. Choose the monitor back panel which will work best for the mounting configuration and remove the appropriate breakaway tab to allow the cord to exit in the desired direction. (**see Figure 1-1**).

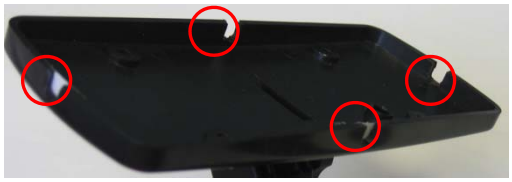


Figure 1-1

In order for the monitor to operate as intended, all monitor connections should be hard wired from the monitor to the vehicle's electrical system. There are three wires in the monitor harness. **Red** is 12/24-volt positive constant connection. This should be connected to a 12/24-volt power source that is always "On". The **Blue** wire is the "Switched" 12/24-volt positive connection or "Ignition". This wire should only be "On" when the key is in the "On" position. The **BLACK** wire is to be connected to ground. These connections will allow the monitor to receive signals when the vehicle is not running and update the monitor in real time. When "Ignition" is turned on, you will have the most up to date information for all tire conditions before the next trip is started.

The monitor is fused internally, however some installers would still prefer to install an inline fuse for precautions. We suggest an optional 2-amp slow blow fuse be used for this purpose.

"S" is used to lock in selections during programming. Used to turn on and off the backlight.

(4) Arrow buttons are used to navigate the screen and select values in the program mode

"P" is used to enter the program modes. Also used to silence alarms.

2. PROGRAMMING THE MONITOR

In order for the monitor to report tire information the user, sensor serial numbers and baseline pressures for each tire location need to be programmed. This is done by following the steps below. **Note, "black box" products do not have an audible alarm or feedback.**

Do not install sensors until all programming is completed and the monitor is returned to the normal operation mode.

A. PROGRAMMING THE SENSOR LOCATION

1) Ensure that the power is on. Upon first power up, the display will show "nSP which stands for "No Sensors Programmed". Note that this message can also appear if programmed sensors have not transmitted to the monitor. It could take up to 8 minutes for all sensors to transmit their information. The Programming mode will need to be accessed to add sensors to the monitor. Be sure to leave the sensors off the valve stems until the programming is completed to facilitate the process.

2) Press and hold the "P" button for approximately 5 seconds. When the monitor screen displays the program mode, the "P" button can be released. All available tire positions will now be displayed on the screen. See **Figure 2-1**. The monitor can be set up to display a motor home pulling a car or trailer, or a car / truck pulling a trailer.

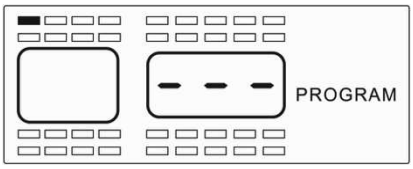


Figure 2-1

3) Be sure to properly program sensors to the desired positions. Use the diagram in **Figure 2-3** to record the three digit serial numbers (See **Figure 2-2** for the three digit number location) and corresponding tire positions for programming.

Figure 2-2

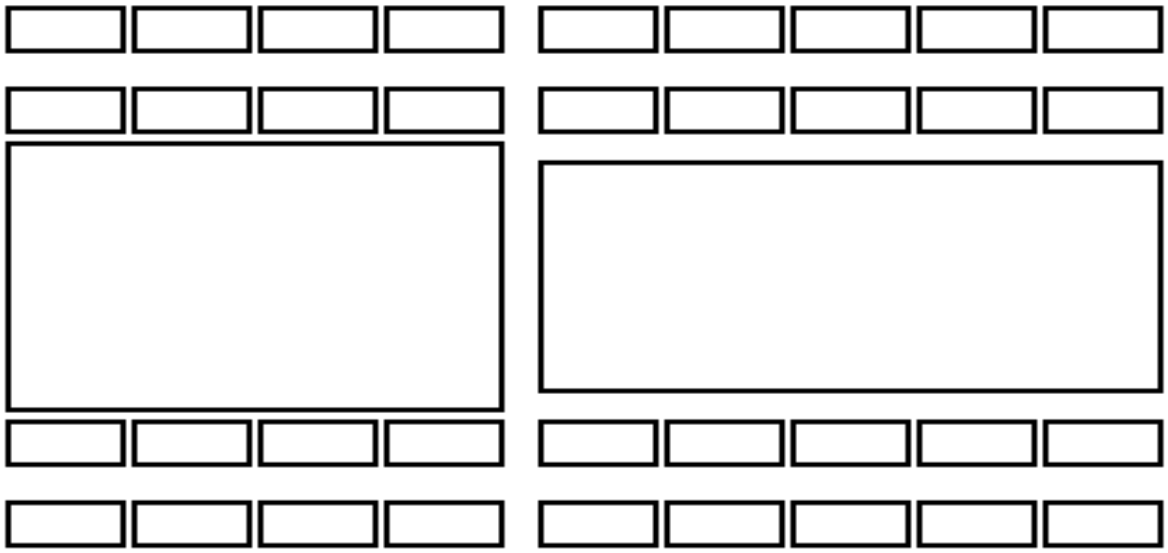


Figure 2-3

4) Select the desired tire position using the arrow buttons. Hold down the “S” button until the first of the three dashes begins to blink (See Figure 2-4).

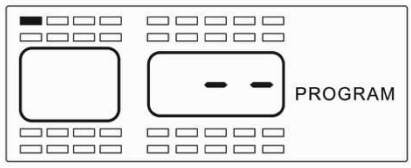


Figure 2-4

5) Input the three digit sensor serial number located on the sensor using the “Up” and “Down” arrows to adjust the numeric value and the “Left” and “Right” arrows to change the digit being adjusted (See **Figure 2-2** for the three digit number location). Once the serial number is entered, press and hold the “S” button for 3 Seconds until the number flashes and audible beeps are heard. See **Figures 2-5, 2-6,** and **2-6a**.

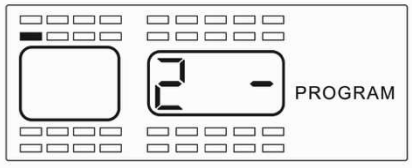


Figure 2-5

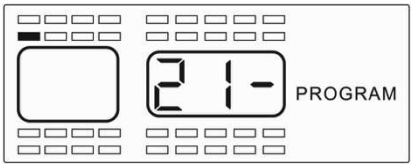


Figure 2-6

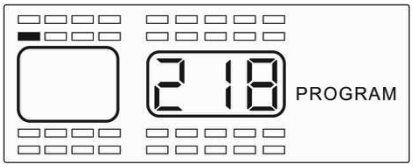


Figure 2-6a

6) Once the tire serial number has been programmed successfully, a new position will be highlighted to input another sensor serial number. Continue to program the remaining sensors by repeating the above steps 4 and 5.

7) Once all sensors have been programmed, press the “P” button momentarily to move to the Baseline Pressure Settings. The monitor will now display the screen shown in **Figure 2-7**. Note, press and hold “P” for 5 seconds to exit programming mode and return to normal operating mode at any time.

B. BASELINE PRESSURE PROGRAMMING

NOTE: To enter into Baseline Pressure Programming Mode from the Normal Operation Screen, press and hold the “P” button for 5 seconds until the “PROGRAM” screen is displayed. Then press the “P” button once to access the Baseline Pressure Programming screen “PRESSURE PSI PROGRAM” (See Figure 2-7).

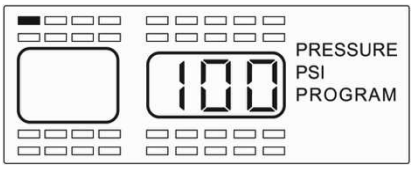


Figure 2-7

The baseline pressure has been set in the factory at 100-psi for all wheel positions.

DORAN recommends that all baseline pressures are set to the same pressure levels recommended by the tire manufacturer. If baseline pressures need to be changed, or a new sensor is programmed, then follow the procedure below. Otherwise, press “P” once to proceed to Date and Time Settings.

The monitor should now be displaying the wheel positions available for Baseline Pressure adjustment (See **Figure 2-8**). The text on the screen will contain different units of measure (PSI, Bar, or kPa) depending on which pressure unit is selected in the settings of the monitor. The Baseline Pressure may be set anywhere from 10 to 188 PSI. Each wheel position can be set with a different Baseline Pressure if needed.

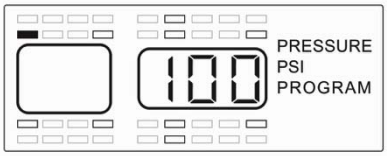


Figure 2-8

1) Using the same controls as sensor serial number programming, use the arrow buttons navigate to the desired tire position. Press and hold the “S” button for 3 seconds. This will cause the first dash or number to blink (See **Figure 2-9**). Use the “Up” and “Down” arrows to adjust the numeric value and the “Left” and “Right” arrows to change the digit being adjusted. Once the Baseline Pressure has been set, press and hold the “S” button for 3 Seconds until the number flashes twice and audible beeps are heard. (Audible alarm is not available on the “black box” products)

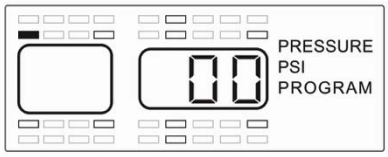


Figure 2-9

2) For values less than 100, the first digit will need to be 0 followed by the two digit Baseline Pressure value. Example: For a Baseline Pressure of 95 PSI, the value would be entered as “095”.

3) If additional Baseline Pressures need changed, use the arrow keys to navigate to the next position to be programming and repeat step 1. If all Baseline Pressure have been set, press “P” once to move to the Date and Time Settings. Note, press and hold “P” for 5 seconds to exit programming mode and return to normal operating mode at any time.

4) To set the a global Baseline Pressure, press and hold “S” on any tire position, enter in the desired global Baseline Pressure, and press “S” and “P” simultaneously for 3 seconds.

C. PROGRAMMING THE DATE AND TIME FOR STORED ALARM HISTORY INFORMATION

NOTE: To enter into the Date and Time Programming Mode from the Normal Operation screen, press and hold the "P" button for 5 seconds until the "PROGRAM" screen is displayed. Then press the "P" button twice to access Date and Time Programming Mode (See Figure 2-10).

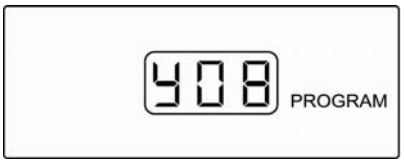


Figure 2-10

NOTE: Stored alarms are not available on the "black box" products.

1) To adjust the Year (Y), Press and hold the "S" button for 3 seconds until the first digit begins to flash (See **Figure 2-11**). Use the "Up" and "Down" arrows to adjust the numeric value corresponding to the last two digits of the calendar year. The "Left" and "Right" arrows are used to change the digit being adjusted. Once the Year (Y) has been entered, press and hold the "S" button for 3 seconds to proceed to the Month (M) setting (**See Figure 2-12**).

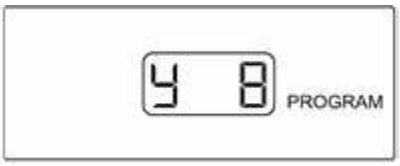


Figure 2-11

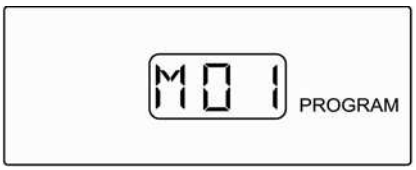


Figure 2-12

2) To adjust the Month (M), Press and hold the "S" button for 3 seconds until the first digit begins to flash. Use the "Up" and "Down" arrows to adjust the numeric value and the "Left" and "Right" arrows to change the digit being adjusted. Once the Month (M) has been entered, press and hold the "S" button for 3 seconds to proceed to the Day (D) setting (See **Figure 2-13**).

Figure 2-13

3) To adjust the Day (D), Press and hold the "S" button for 3 seconds until the first digit begins to flash. Use the "Up" and "Down" arrows to adjust the numeric value and the "Left" and "Right" arrows to change the digit being adjusted. Once the Day (D) has been entered, press and hold the "S" button for 3 seconds to proceed to the Hour (H) setting (See **Figure 2-14**).

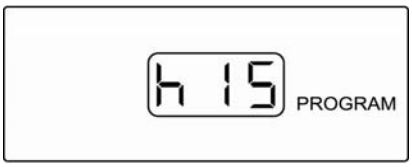


Figure 2-14

4) To adjust the Hour (H), Press and hold the “S” button for 3 seconds until the first digit begins to flash. Note: The Hour (H) will be displayed in a 24-Hour Format. Use the “Up” and “Down” arrows to adjust the numeric value and the “Left” and “Right” arrows to change the digit being adjusted. Once the Hour (H) has been entered, press and hold the “S” button for 3 seconds to proceed to the Minute (M) setting (See **Figure 2-15**).

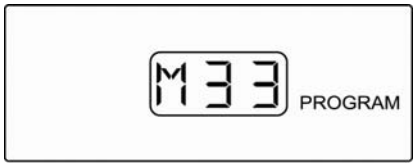


Figure 2-15

5) To adjust the Minutes (M), Press and hold the “S” button for 3 seconds until the first digit begins to flash. Use the “Up” and “Down” arrows to adjust the numeric value and the “Left” and “Right” arrows to change the digit being adjusted. Once the Minute (M) has been entered, press and hold the “S” button for 3 seconds to proceed back to the beginning of the Date and Time Programing screen starting at the Year (Y) setting (See **Figure 2-10**). To proceed to the Unit of Measure Programming screen, press the “P” button once. Note, press and hold “P” for 5 seconds to exit programming mode and return to normal operating mode.

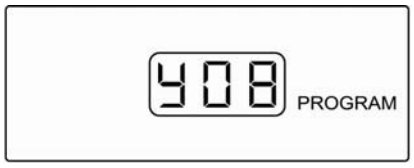


Figure 2-16

D. PROGRAMMING THE UNIT OF MEASURE

NOTE: To enter into the Unit of Measure Programming Mode from the Normal Operation screen, press and hold the “P” button for 5 seconds until the “PROGRAM” screen is displayed. Then press the “P” button three times to access the Unit of Measure Programming Mode (See Figure 2-17).

Figure 2-17

The default unit of measure is factory set to PSI. The Doran monitor can also display pressure in BAR and kPa (See **Figure 2-18** and **2-19**). Use the “Left” and “Right” arrow keys to select the desired units. Press and hold the “S” button the selection blinks and audible beeps are heard. To proceed to the Delete Tire Sensor Programming screen, press the “P” button once. Note, press and hold “P” for 5 seconds to exit programming mode and return to normal operating mode.

Figure 2-19

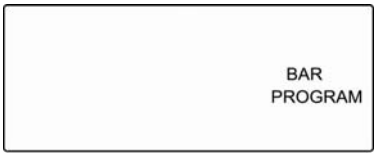


Figure 2-18

E. DELETE SENSOR LOCATION

This step is only used when a sensor is to be removed from the memory of the monitor. This would also be used to remove a sensor from one position and locate it to a different position.

NOTE: To enter into the Delete Sensor Location Programming Mode from the Normal Operation screen, press and hold the "P" button for 5 seconds until the "PROGRAM" screen is displayed. Then press the "P" button four times to access the Delete Sensor Location Programming Mode (See Figure 2-20).

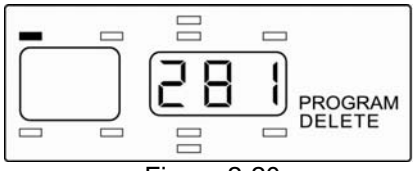


Figure 2-20

In the Delete Sensor Location Programming Mode, all programmed sensors will be displayed. If no sensors need to be deleted, proceed to the next screen by pressing the "P" button once.

To delete a sensor, select the sensor using the arrow buttons (**Figure 2-21**). Hold down the "S" button until the three digits blink and audible beeps are heard. The sensor will now be removed (**Figure 2-22**). When all desired sensors are deleted, proceed to the High Pressure Alarm Programming Mode by pressing the "P" button once. To program a deleted sensor to a different location, or add new sensors to the monitor's memory, press the "P" button twice to enter into the Programming Sensor Location mode.

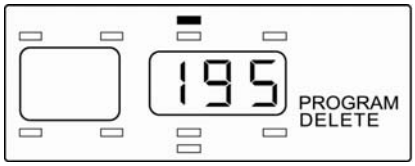


Figure 2-21

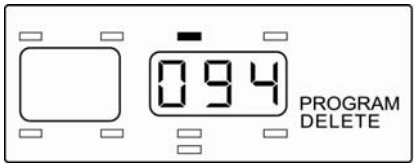


Figure 2-22

F. HIGH PRESSURE ALARM PROGRAMMING

NOTE: To enter into the High Pressure Alarm Programming Mode from the Normal Operation screen, press and hold the "P" button for 5 seconds until the "PROGRAM" screen is displayed. Then press the "P" button five times to access the High Pressure Alarm Programming Mode (See Figure 2-23).

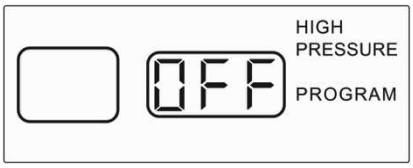


Figure 2-23

The High Pressure Alarm Programming mode allows the user to enable (**Figure 2-24**) or disable (**Figure 2-23**) the high pressure alarm. A high pressure alarm will occur when a pressure is recorded at 25% higher than the baseline pressure setting. High temperatures can cause elevated pressures. This alarm can provide early detection of a possible temperature issue. Use the "Left" and "Right" arrows to enable or disable the high pressure alarm. Press and hold the "S" button until the screen flashes and audible beeps are heard.

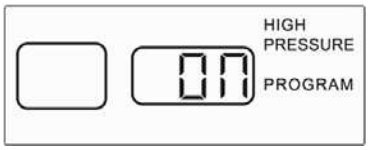


Figure 2-24

G. BAUD RATE SELECTION (J1939 PRODUCTS ONLY)

NOTE: To enter into the Baud Rate Selection Mode from the Normal Operation screen, press and hold the "P" button for 5 seconds until the "PROGRAM" screen is displayed. Then press the "P" button six times to access the Baud Rate Selection Mode (See Figure 2-25).

The Baud Rate Selection mode allows the user to select a 250k or 500k baud rate for J1939 products. It is very important that the selected baud rate matches the vehicle's baud rate. Failure to do so could cause operational issues with the vehicle. Use the "Left" and "Right" arrows to select the b25 for 250k (Figure 2-25) or b50 for 500k (Figure 2-26). Press and hold the "S" button until the screen flashes and audible beeps are heard.

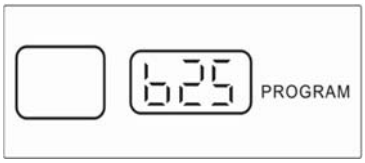


Figure 2-25

Figure 2-26

III. INSTALLING THE SENSORS ON THE VEHICLE.

The monitor should now be turned on and it should be in the normal operation mode.

Note, it could take up to eight (8) minutes after power up for the monitor to receive all of the updated signals from the tire sensors.

Before installing tire sensors, inspect all of the valve stems. Replace any cracked or defective valve stems. If replacements are necessary, Doran suggests replacing the valve stems with brass or stainless steel components for improved life.

If sensors have not been programmed to the monitor, or signals are not received by the monitor after first installed the screen will display "**nSP**" (**see Figure 3-1**).

Figure 3-1

1. Once all sensors have been programmed into the monitor, they will need to be installed in the proper tire positions on the vehicle.

   The sensor should be tightened only by hand. Never use a tool to tighten the sensors as this could cause damage to the valve stems and/or the tire sensors. If needed, leaks can be identified using a soapy solution. The monitor should now begin to display wheel positions and tire pressures.

2. If all sensors are reporting pressures within the baseline settings, the monitor will display "on". The Green Means Good™ indicator light will also illuminate (See **Figure 3-2**). Note, the "black box" products do not have a Green Means Good™ indicator light. The Doran 360HD Tire Pressure Monitor System is now ready for use.

Figure 3-2

3. If any of the tire pressures are outside of the baseline pressure settings, an alarm will be displayed, and audible alarm will sound, and the red alarm LED will illuminate. See section IV for all alarm mode scenarios. Note, "black box" products do not have an audible alarm.

IV. ALARM MODES

NOTE: **Alerts indicate that the vehicle is being operated in a dangerous condition. When an alarm is triggered, STOP and check the tire(s) as soon as safely possible and investigate. The warning will continue to be reported as long as the malfunction exists.**

NOTE: **When an alarm occurs, the audible alarm will sound. Pressing any button will silence the audible alarm but will not clear it (Audible alarm is not available on the "black box" products).**

The DORAN 360HD has six types of alarm modes. The warning levels are:

- Under Pressure – Tire pressure is 12.5% or more below the programmed baseline air pressure.
  - When an Under Pressure alarm is reported, the backlight of the monitor screen will illuminate. The Green Means Good™ indicator light will turn off, the red warning LED will begin to flash, and the audible alarm will sound at a rate of one flash/beep per second. The tire position with the alarm condition will be highlighted, the current pressure reading displayed, and the words "LOW PRESSURE" will be displayed on the monitor (See **Figure 4-1**)

Figure 4-1

- Extreme Under Pressure – Tire pressure is 25% or more below the programmed baseline air pressure.
  - The National Highway and Traffic Safety Administration considers a tire flat when the pressure is 25% below the tire manufacturers' recommended operating pressure
  - When an Extreme Under Pressure alarm is reported, the backlight of the monitor screen will illuminate. The Green Means Good™ indicator light will turn off, the red warning LED will begin to flash, and the audible alarm will sound at a rate of two flashes/beeps per second. The tire position with the

alarm condition will be highlighted, the low pressure displayed, and the words “LOW PRESSURE” will be displayed on the monitor (See **Figure 4-1**).

- Driving on a significantly under-inflated tire can cause the tire to overheat and lead to tire failure. Under-inflation also reduces fuel efficiency and tread life which can potentially affect the vehicle’s handling and stopping ability.

- Fast Leak Warning – Occurs when 4.5 PSI or more is lost from the tire in less than 16 seconds.
  - When a Fast Leak alarm is reported, the backlight of the monitor screen will illuminate. The Green Means Good™ indicator light LED will turn off, the red warning LED will begin to flash, and the audible alarm will sound at a rate of one flash/beep per second. The tire position with the alarm condition will be highlighted and the words “FAST LEAK” will be displayed on the monitor (See **Figure 4-2**). This alarm will only be displayed during the fast leak and will be cleared when the air ceases to leak from the tire.

Figure 4-2

- High Pressure (Optional Alarm) – Tire pressure is 25% or more above the programmed baseline air pressure.
  - If the High Pressure alarm is activated and occurs, the Green Means Good™ indicator light will turn off, an audible alarm will sound at a rate of one beep per second, and HIGH PRESSURE will be displayed on the monitor screen.
  - This alarm can be generated by a dragging brake, bad wheel bearing, extreme temperature conditions, or other mechanical failures.

- Lost Signal – Occurs when the monitor does not receive the RF signal from a sensor.
    - If the monitor is unable to receive a signal from a sensor for more than 60 minutes, an alarm will be displayed for that sensor (See **Figure 4-3**).

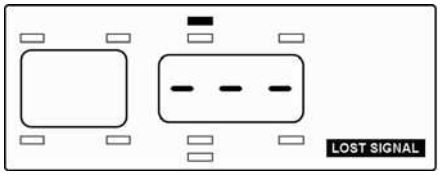


Figure 4-3

- Hot – Sensor temperature is above 175℉ (80℃). This could indicate suspension or wheel component malfunction.
    - When a Hot alarm occurs, HOT will be displayed on the monitor (See **Figure 4-4**). NOTE, an Under Pressure or Extreme Under Pressure alarm will over-ride a “HOT” alarm because of the potential danger of a low pressure tire.

Figure 4-4

When the HOT warning appears, STOP and check your tire(s) as soon as safely possible, and check for the possible cause.

NOTICE: A “LOW PRESSURE” warning will over-ride a “HOT” warning because of the potential danger of a low pressure tire.

V. NORMAL MODE ACCESSORY FUNCTIONS

1. DROP AND HOOK FEATURE

The Drop and Hook feature allows the operator of the vehicle to customize which sets of tire sensors the monitor displays. This is useful when a trailer or towed car are not attached to the vehicle and do not need displayed. The following steps are used to adjust the display configuration:

1) Press and hold the “Left” and “Rear” arrow buttons for 3 seconds to enter the Drop and Hook Programming Mode.
2) All of the programmed wheel positions will be displayed (see **Figure 5-1**).
3) Use the “Left” and “Right” arrow buttons to cycle through the display configuration (see **Figure 5-2 and 5-3**).
4) When the desired display configuration is selected, press and hold the “Left” and “Right” arrow buttons for 5 seconds. This will confirm the configuration and return the monitor to Normal Operation mode. Note, when you change the display configuration it may take up to 8 minutes for the monitor to receive all of the sensor transmissions and update the display.

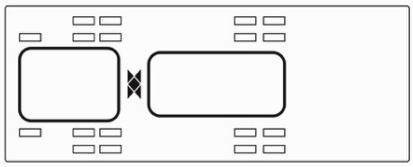


Figure 5-1

Figure 5-2

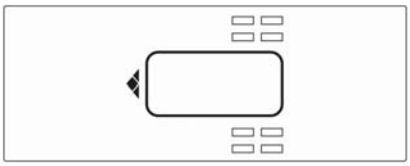


Figure 5-3

2. FACTORY RESET

Warning, this will return the monitor to the factory default settings and erase all programming! Verify that this is desired before proceeding. To return the monitor to factory default settings, press and hold the “P” button for 30 seconds.

Be sure this is what you want to do before you proceed!

3. STORE ALARM INFORMATION

The Doran 360HD Monitor has the ability to store the last 31 alarm faults. These recorded faults cannot be erased; they will only be replaced by new alarms. This can be a very useful tool for the over the road trucking industry or any application where an alarm history is necessary.

To access the stored alarms, press and hold the “P” and “S” button together for 3 seconds. A number 0 will be displayed on the screen (See **Figure 6-1**) indicating the latest fault. You can cycle through the other stored alarms by using the “Left” and “Right” arrow keys. If no buttons are pressed within 1 second, the monitor will begin to show the alarm details. See an example stored alarm below:

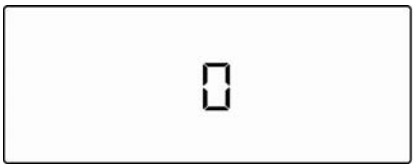


Figure 6-1

Figure 6-2 - Air pressure of the alarm

Figure 6-3 - M07 represents the 7th Month of the Year or July.

Figure 6-4 - d04 represents the 4th Day of the Month

Figure 6-5 - Y06 represents the Year 2006

Figure 6-6 - h14 represents 2:00 PM (24-hour clock)

Figure 6-7 - m33 Represents 33 minutes

To return to Normal Operating mode press and hold the “P” and “S” buttons together for three seconds.

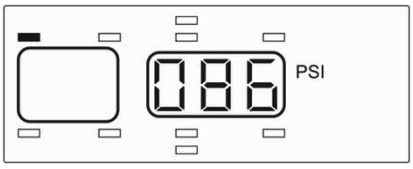


Figure 6-2

Figure 6-3

Figure 6-4

Figure 6-5

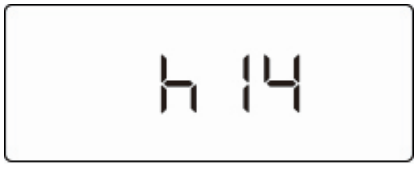


Figure 6-6

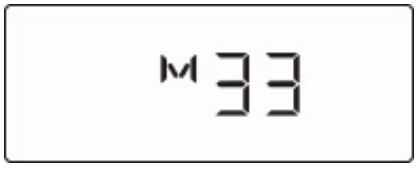


Figure 6-7

4. BACKLIGHT OPERATION

The backlight will automatically illuminate for any alarm or if wheel positions are being selected in the Normal Operating mode. The backlight will not remain on in the Normal Operating mode. To toggle the backlight on or off, press the “S” button.

VI. FAQs AND TIPS

1. FREQUENTLY ASKED QUESTIONS

WHY DID THE MONITOR FAIL TO GET A SIGNAL FROM A SENSOR DURING INSTALLATION?

Higher radio frequency (RF) transmissions travel mostly via straight lines and along line-of-sight pathways. The 360HD sensors are required to accomplish the difficult task of transmitting a low power FCC approved signal from vehicle tires to the monitor. First, verify that the sensor has been programmed correctly. If the sensor is programmed correctly, the vehicle could be in what is known as a “Dead Zone” and the signal cannot transmit properly to the monitor. Check the surroundings (pole barn siding, metal fence, side of a building, etc.). Moving the vehicle just a few feet can sometimes overcome this problem. Note, the sensor can be removed and re-installed to facilitate the sensor’s transmission to the monitor. Otherwise, the sensor should transmit to the monitor in 8 minutes or less. If the optional signal booster or remote antenna kit is being used, reposition the booster or remote antenna for a possible better reception.

WHY DOESN’T MY MONITOR TURN ON?

Verify the fuse on all power lines is not blown. If needed, replace the fuse with a 2 amp fast-blow fuse. Be sure the ignition switch is on.

HOW DO I MUTE THE AUDIBLE ALERT?

Press any button after the alert sounds. This will put the alert in the **Quiet Mode**. The Green Means Good™ indicator light will have turned off, the alert will be displayed on the screen, and the backlight will be lit. This will continue until the alarm has been corrected.
(Black box products don’t have audible alert or Green Means Good™ indicator light.)

WHAT IF THE GREEN LED ON THE MONITOR DOES NOT ILLUMINATE?

The Green Means Good™ indicator light will not illuminate if there are issues with the programmed sensors or if there is an active alarm. Review the information on the display and verify that the baseline pressure settings are correct (“Black Box” products do not have a Green Means Good™ indicator light). The Green Means Good™ indicator light will also not illuminate if a sensor is programmed but has not yet sent an activation signal.

CAN THE MONITOR BE USED INDEPENDENTLY ON VEHICLE ONLY, TRAILER ONLY, OR TOW VEHICLE ONLY?

Yes – See the Drop and Hook Instructions on page 19.

CAN I STORE MY VEHICLE LONG TERM WITH THE MONITOR ON?

The monitor draws 60mA to 125 mA of amperage when it is powered and fully functional. The monitor could drain the vehicle's battery over an extended period of time. Hooking the monitor up to enable the sleep mode will drastically reduce the power consumption over a long period. If storing a vehicle for over 3 months, consider unplugging the monitor and removing the sensors when the vehicle will be in storage. (TIP: Clean egg cartons or plastic bags work well for storing the sensors.) Each Sensor has its own serial number laser etched into the cover. Be sure to enter these ID numbers in the diagram on page 7 so sensors will be replaced on the same tire when reinstalling them, eliminating the need for reprogramming. If a low-pressure alert is given while in storage, the sensor will transmit the alert until the pressure is corrected. This constant transmission could dramatically affect the battery life of the sensor. Note, sensors will shut down and stop transmitting when the air pressure reaches 5 PSI or less. When reinstalling the system, power the monitor first, and then screw sensors onto their original wheel locations. Pressure readings will be displayed within 8 minutes and the 360HD system will now be active.

HOW DO I CHECK THE TIRE PRESSURES?

The pressures are updated to the 360HD Monitor every 8 minutes under normal circumstances. While the monitor is in Normal Operation mode, use the “Left”, “Right”, “Up”, and “Down” buttons to navigate to the desired tire. Note, press the “S” button to toggle the backlight on and off.

WHAT HAPPENS IF A SENSOR IS REMOVED TO INFLATE OR CHECK THE PRESSURE OF A TIRE?

It is recommended that tire pressures be checked regularly using a quality pressure gauge when the tires are at ambient temperatures. Remove the sensor, check pressure, and inflate if necessary. When you return the sensor to the valve stem, the sensor will begin to read the current pressure and return to its normal operation. With the 360HD system you can air up a low tire with the tire being warm and replace the sensor without worrying about the sensor giving a false alarm, unlike some of the other systems available on the market.

HOW DO I DELETE A SENSOR?

See page 13 for full details on sensor deletion.

WHAT SHOULD BE DONE IF AN ALERT IS DISPLAYED?

Alerts indicate that the vehicle is being operated in a dangerous condition. When an alarm is triggered, STOP and check the tire(s) as soon as safely possible and investigate. Be sure to check the valve stem for damage. Soapy water can be used to identify leaks.

WHAT MAKES MY SYSTEM SENSORS TRANSMIT?
Sensors will transmit data to the monitor under the following conditions:

1) Sensors update with a signal every 8 minutes.

2) Sensors transmit any change of pressure recognized from the static pressure.

WHAT CAUSES THE MONITOR TO DISPLAY ALARMS?
See Section IV on Page 16 through18.

DO I NEED TO REBALANCE MY TIRES WHEN USING A SENSOR?
The ⅔ oz. sensor should not affect a large truck tire. Smaller tires may require rebalancing.

WHAT SHOULD I DO IF A SENSOR IS LOST OR DAMAGED?
If a Sensor is lost or damaged and needs replacing, call DORAN Mfg. LLC Toll Free at 1-866-816-7233 to order a new Sensor.

MY SENSOR WAS BLOWN OFF, (BLOWOUT) WITH NO ALERT GIVEN
An instant tire failure is rare in comparison to the more common failures caused by gradual tire deflation. It is possible, during an instantaneous blowout, to have the sensor blown off the tire before it has had a chance to send a signal to the monitor. The 360HD is not designed to provide blowout alarms. This type of failure is commonly due to low tire pressure resulting in an overheating of the tire sidewalls to the point of disintegration. The DORAN 360HD is designed solely to monitor tire pressure.

2. TIPS

TIRE CONDITION: Conduct a regular visual inspection of the vehicle's tires. **The sensors are not a substitute for proper tire maintenance and it is the user's responsibility to maintain proper amounts of tire pressure and respond accordingly to warnings and alerts**. Low tire pressure is not the only type of problem associated with tires. Symptoms such as bulges, uneven tread, abnormal noise, etc. should **immediately** be brought to the attention of a professional.

ROTATING/REPLACING TIRES: When rotating or replacing tires, mark each wheel location for each sensor. Remove sensors and store in bags or in an egg carton until work is done. Return each sensor to their original wheel location. You may also delete the sensor positions on the Monitor (page 13), and reinstall the sensors per the instructions on page 7 through 9.

RF (Radio Frequency) PRODUCTS: The **DORAN 360HD** utilizes RF technology to transmit a signal between the sensor and the monitor. RF signals are subject to interference from many types of signals and products, which can cause errors in the operation of the product. As with cell phones and other types of electronics using RF signals, signal interruption can occur and cause a lost signal transmission.

REMOTE ANTENNA or INTERIOR / EXTERIOR BOOSTER FOR UNIQUE APPLICATIONS: Due to the unique features of RF signals and the construction and interference from electronics on some Trucks, a coaxial antenna or RF Booster is recommended. If needed, contact DORAN Mfg., LLC at: 1-866-816-7233.

COOL TEMPERATURES AND HIGH ALTITUDE: Colder temperatures will cause pressure levels to fall. If a tire's pressure is already close to a low-pressure alarm level, a change in temperature could cause an alarm to trigger. This can also happen when pressure drops overnight due to cooler temperatures. Increasing altitude can also cause a decrease in tire pressure. Keep these properties in mind while using the Doran 360HD system

NORMAL OPERATING TIRE TEMPERATURE: Tire pressures will increase as the vehicle is driven. When tires are in motion, the sidewalls are under stress carrying the load of the vehicle. The tires will heat up and cause an increase in tire pressure. This can cause an air pressure increase of up to 10 psi in certain applications. Always adjust air pressure when tires are cold or at ambient temperatures.

3. LIMITED WARRANTY

ONE YEAR LIMITED WARRANTY: Subject to the limitations and exclusions set forth in this Limited Warranty, the DORAN 360HD is warranted against defects in material or workmanship that result in a product failure under normal use during the one-year period following the date of purchase by the original end-user. This Limited Warranty applies only to claims made by the original end-user and cannot be assigned, transferred or conveyed to any subsequent users. The exclusive remedy for any product determined by DORAN Mfg. LLC to be defective within such period shall, at the sole option of DORAN Mfg. LLC, be the repair or replacement of such defective product, or the refund of the purchase price therefore. No other remedy shall be available.

EXCLUSIONS FROM COVERAGE: This Limited Warranty does not apply to any claims arising from misuse, abuse, unauthorized repair or alteration, circumstances where the DORAN 360HD is improperly installed or improperly wired contrary to the DORAN 360HD product instructions; or damage or defect attributable to fire or other casualty, including, without limitation, acts of God or exposure to abrasive or corrosive materials or pollutants, or attributable to collision or other accidents involving motorcycles upon which the DORAN 360HD is installed.

LIMITATIONS: **THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ALL OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF DORAN MFG. LLC. THIS LIMITED WARRANTY SPECIFICALLY EXCLUDES ALL INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES. IN NO EVENT, AND FOR NO CAUSE WHATSOEVER, SHALL DORAN MFG. LLC HAVE ANY LIABILITY TO ANY PARTY IN EXCESS OF THE ORIGINAL PURCHASE PRICE OF THE PRODUCT IN QUESTION.**

EXCLUSIVE AGREEMENT: This Limited Warranty is a complete and exclusive statement of the warranties which apply to the DORAN 360HD. There are no express or implied warranties beyond those expressly stated above. No employee, agent, dealer or other person is authorized to give any warranties on behalf of DORAN Mfg. LLC, except as authorized in writing.

STATUTE OF LIMITATIONS: In purchasing the DORAN 360HD you agree that any action for breach of contract or warranty must be commenced within one year after the cause of action has accrued.

PROCEDURE: Products determined to be defective within the terms of this Limited Warranty should be returned to DORAN Mfg. LLC, transportation prepaid. Call DORAN Mfg. LLC for return authorization. No unauthorized returns shall be accepted. Sender is responsible for all costs incurred in the removal or reinstallation and shipping of the returned product. A copy of the invoice from the point of purchase must accompany the returned product.

APPLICABLE LAW: The internal laws of the State of Ohio, U.S.A. shall govern this Limited Warranty, and the exclusive venue for any dispute in connection with the purchase or use of the product shall be the state and federal courts of general jurisdiction located in Hamilton County, Ohio U.S.A.

SPECIAL NOTICE TO CONSUMERS: If you have purchased this product for person, family or household use:

(1) Some states do not permit disclaimers or term limitations of implied warranties so that the disclaimers and limitations in this Limited Warranty may not apply to you;
(2) Some states do not permit the exclusion or limitation of incidental or consequential damages so that the exclusions and limitations in this Limited Warranty may not apply to you; and
(3) This Limited Warranty gives you specific legal rights and you may have other rights that vary from state to state.

For Warranty Return Authorization
Call Toll Free: 1-866-816-7233

4. SPECIFICATIONS

TPMS Technical Specificaitons--Truck&Trailer (HD)

Specification	Standard Monitor	Black Box Monitor	Booster	Truck Sensor
Operating Power	12-24VDC			2.2~3.5VDC (Battery*)
Operating Frequency	434.1Mhz (FSK)			
Transmition Range †	N/A		150ft	150ft
Maximum Tires Supported	36		N/A	N/A
Pressure Range	5-188 psi			
Pressure Accuracy	±2 psi			
Operating Tempeature	-22°F～167°F		-40°F～185°F	
Storage Tempeature	-40°F～185°F		-58°F～203°F	
Dimensions	5.70" L 2.17" W 1.10" H	6.10" L 3.54" W 0.98" H	4.33" L x 3.94" W x 1.97" H	1.31"h x 1.16" ø
Weight	5.40 oz.	7.15 oz.	7.04 oz.	0.76 oz.
EMC Compliance	FCC Part 15 B / EN301 489-1 &-3 / ISO7637			
Radio Compliance	FCC 15.209 / EN300 220-1&-2 / IC RSS-210			
Safety Compliance	EN60950 / EN62479			
Qualifications	Doran Equipment was Tested to Select SAE J1455-AUG 2012 Mechanical and Environmental Testing			

*Lithuim Battery-non-rechargeable
†Distance is tested by line of sight. Environment will affect performance.

VII. COMPLIANCE AND DISPOSAL INFORMATION

1. FCC COMPLIANCE STATEMENT

DORAN 360HD systems comply with Part 15
Class B of the FCC Rules.

This device complies with part 15 of the FCC rules.
Operation is subject to the following two conditions
(1) This device may not cause harmful interference, and
(2) This device must accept any interference that may cause undesired operation

The DORAN 360HD is a device for displaying tire pressures. As with all devices that use RF signals, the signal can be interrupted. The DORAN 360HD has been designed to work optimally to overcome the interference that can block RF signals. As with all RF products, no signal guarantee can be made.

2. CANDIAN REGULATORY STATEMENT

DORAN 360HD systems comply with Industry Canada CAN RSS-Gen/CNR-Gen standard(s). Operation is subject to the following two conditions:
(1) This device may not cause interference, and
(2) This device must accept any interference that may cause undesired operation.

3. DISPOSAL AND RECYCLING INFORMATION

In some areas, the disposal of certain electronic devices is regulated. Make sure you dispose of or recycle DORAN devices in accordance with your local laws and regulations.

VIII. OPTIONAL ACCESSORIES

Optional Products Available		
Part #	**Description**	**Qty to Order**
3602	HD Sensor	
3604	HD Sensor with LF Activation	
3623	Remote Antenna kit	
3624	Interior Signal Booster	
3625	Exterior (Waterproof) Signal Booster	
3627	Sensor Locking Kit (2 locks and 2 wrenches)	
3629-S	Brass Locking Jam Nut	
3639	Flow-thru Adapter	
3646	Visor clip/hook & loop mounting kit	
3647	Pedestal Mount for Monitor	
3649	Flow-thru Extension (straight)	
3650	Flow-thru Extension (bent)	
3651	Small Extension Bracket (24mm)	
3652	Large Extension Bracket (35mm)	

DORAN MANUFACTURING CO. LLC

Tel: 866-816-7233
Website: www.doranmfg.com
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#3675-HD V4