

■ **TECHNICAL BULLETIN FOR: MTR 360 TYRE MONITORING SYSTEM- TROUBLESHOOTING PROCEDURE**

1. INTRODUCTION.

The following is troubleshooting information / procedure for resolving problems / maintenance associated with LSM Technologies MTR360 Multi- Tow Tyre Monitoring Systems. This procedure should be followed to assist maintenance personnel in correctly maintain and trouble shooting the TMSystem.

2. REFERENCES / MANUALS.

The following references are required for you to assist with trouble- shooting and maintaining your MTR360 TMSystem primarily:

- a) **02-06-0002-B MTR360 Prime Mover:** Layout and Electrical Drawing for Prime- Mover.
- b) **02-06-0004-B-MTR360 Trailer A:** Layout and Electrical Drawing for Trailers and Dolly's.
- c) **Doran-360SL-programming-tool-manual.**
- d) **TB- 0009- Sensor Seal Replacement Procedure 301016**

All Manuals / Drawings etc are available on our Web Site at this link: [Tyre Monitoring / Manual / MTR360 Multi- Tow - Manuals+Tech Bulletins+Videos](#)

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3. MONITOR / DISPLAY NOT WORKING.

Problem	Possible Causes	Check & Resolve
TMSystem Monitor / Display not powering up	<ul style="list-style-type: none"> No ignition power (blue wire) or no direct battery power (Red wire). Blown fuse(s) 	<ul style="list-style-type: none"> Check fuses and power wiring connections Use 3 Amp or 5 Amp fuses only Red Wire is direct battery power 12/24 VDC Blue wire is after ignition power 12/24 Volts Black Wire is Earth / Negative Check vehicle wiring for possible causes for a blown fuse and rectify.
Monitor / Display shows "NSP" No Sensors Present	<ul style="list-style-type: none"> Sensors have not yet been programmed into the MTR HUB and Transceivers. Data Cable not connected to Monitor / Display. No power to MTR360 HUB. Monitor / Display and MTR HUB not able to receive a RF signal from the Sensors. 	<ul style="list-style-type: none"> Program Sensors into MTR HUB and Transceivers as per programming instructions. Check Y-Split data cable connection between MTR360 HUB and display – connect as per instructions. Check there is power to MTR HUB (There is a Red light to indicate power ON). Check fuses and power wire connection to HUB via battery Power Junction Box (LSM 2-to-3 wire box) Check external antenna cable and antenna is connected – replace antenna.
No Green indicator light ("Green Means Good").	<ul style="list-style-type: none"> There is a current alarm – i.e. Low Pressure or Lost Signal. 	<ul style="list-style-type: none"> This is a normal function; the green light will come on when a signal from all programmed Sensors has been received. Rectify current alarmstate.
Display emits a continuous "Beeeeep" sound	<ul style="list-style-type: none"> Vehicle has a flat battery or very low battery power (<5 V) to the display (TMS) when also giving an audible alarm. 	<ul style="list-style-type: none"> Fix low battery power issue and restore normal power – 12/24VDC. Disconnect all power and data wires to reset. <p>Ensure latest Y-split cable is use between TPMS and SAFETRACS GPS</p>

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Problem	Possible Causes	Check & Resolve
		device.
<p>“Lost Sensor” warning on display</p>	<ul style="list-style-type: none"> This is a normal alarm function; if the monitoring unit does not receive a signal from any particular sensor for 18 minutes then it will create a “Lost Sensor” warning on the display. 	<ul style="list-style-type: none"> Visually check if the sensor is fitted on the valve. If sensor is fitted, the sensor battery maybe at ‘End of Life’ and a new sensor will need to be programmed and fitted. Or, remove the sensor and check for physical damage which maybe have caused a failure. Check that the valve is in working order and air pressure is passing through the valve. The Sensor will stop transmitting if there is no air pressure passing through the valve.

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4. TRAILER PLUGS AND SOCKETS.

Problem	Possible Causes	Check & Resolve
<p>No power to MTR Trailer Transceiver</p>	<ul style="list-style-type: none"> Trailer plug not connected Loose wire terminal / connection or damaged trailer plug or socket. Broken trailer plug or socket. Dirt or corrosion in plugs or sockets. 	<ul style="list-style-type: none"> Check trailer plug is connected... If not then connect trailer plug into trailer socket. Ensure pins and contacts are clean and no corrosion evident. Check for loose wire terminal connections in the plug and socket - Clean and seal socket and plug terminals- Spay with "Battery Terminal anti-corrosion Protectant" Fit new connection and trailer plug and sockets as per instructions / drawing - 02-06-0004-B-MTR360 Trailer A. If fitted, the screw-on Plug Cap should always be used anytime the plug is disconnected from a socket to prevent water, mud and dust ingress, and prevent corrosion and damage.
<p>No power to Delay Timer Unit.</p>	<ul style="list-style-type: none"> Input power not connected Failed Delay Timer Unit Water ingress / Contamination. 	<ul style="list-style-type: none"> Check electrical plug pin connections into Delay Timer Unit - both indicator lights should be on when powered. Check for water ingress - if you find water / contamination - Fit new Delay Timer Unit as per instructions / drawings - 02-06-0004-B-MTR360 Trailer A.

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5. MTR HUB & MTR TRAILER TRANSCEIVERS

Problem	Possible Causes	Check & Resolve
<p>No power on MTR HUB (in Truck)</p>	<ul style="list-style-type: none"> Loss of battery power - Blown fuse to MTR HUB / LSM 2-3 wire junction box. No battery power to HUB or Trailer Transceiver (There is a Red light to indicate power ON). LSM 2-3 wire junction box or Delay Timer Unit disconnected. LSM 2-3 wire junction box or Delay Timer Unit failure. 	<ul style="list-style-type: none"> Check fuses and power wire connection to HUB via battery and 2-3 wire Junction Box fitted near vehicle battery (LSM 2-to-3 junction box) - There is a Red light on the MTR HUB to indicate power ON – refer to drawing - 02-06-0002-B MTR360 Prime Mover for wiring. Check LSM 2-to-3 junction box (12/24VDC) is plugged in correctly regarding power input and output - There is an Orange light to indicate power ON. Refer to drawings - 02-06-0002-B MTR360 Prime Mover. Using a multi-meter, check continuity and voltage on + power wire(s) to MTR HUB - >10 volts required. Check power wiring connections/ plug pins - Use a 5 Amp fuse.
<p>No power on Trailer Transceiver</p>	<ul style="list-style-type: none"> Trailer plug not connected No power getting to Trailer Transceiver (There is a Red light to indicate power ON). No power getting to Delay Timer Unit or Delay Timer Unit failure. Trailer Transceiver failure/ electrical short. Interference from external volage source. 	<ul style="list-style-type: none"> Check trailer plug is connected... If not then connect trailer plug into trailer socket. Check the Transceiver to see if the Red power indicator light is ON (12/24VDC). Check vehicle wiring for possible causes of a blown fuse to system – break in power harness, Delay Timer Unit disconnected and rectify. Check power indicator light on the Timer Delay Unit (Trailer)... if no power or not switching... Check as per section (4) above, replace unit. Using a multi-meter, check if any voltage is leaking in to the

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Problem	Possible Causes	Check & Resolve
<p>Have power to Trailer Transceiver, but No TPMS data from Trailer Transceiver on the MTR Display</p>	<ul style="list-style-type: none"> No or low power (<9.8 volts) to Trailer Transceiver unit. Incorrect trailer plug and/or socket pin out. Poor or loose pin / socket contact inside pugs. Incorrect plug connection of Timer Delay Unit. (The Timer Delay Unit in the wiring harness is used to automatically sequence the order which the trailer transceivers are connected and to protect TMS Data Circuit). Trailer Transceiver failure/ electrical short. Interference from external voltage source. 	<p>Transceiver via the External Antenna cable/ mounting bracket/ chassis – use a rubber mount to insulate the External Antenna.</p> <ul style="list-style-type: none"> Check plug and sockets are pinned out correctly- all 3 wire circuits must have continuity. Refer to - 02-06-0004-B-MTR360 Trailer A. Red wire – TMS Data Circuit must have clean and solid connection in plus and sockets 12/24 VDC; White wire – triggers Timer Delay Unit to switch on power to Transceiver- 12/24 V and open Data Circuit ; Brown wire is Earth / Negative. Check correct input and output connection to Timer Delay Unit – input plug , wiring comes from the front of trailer and output plug wiring continues towards back of trailer. Refer to drawings - 02-06-0004-B-MTR360 Trailer A. Check Delay Timer Unit - both indicator lights should switch on 10 seconds after power up – if not fit a replacement unit. Using a multi-meter, check continuity and voltage on + red wire power wire to Trailer Transceiver (>10 volts required). Using a multi-meter, check if any voltage is leaking in to the Transceiver via the External Antenna cable/ mounting bracket/ chassis – use a rubber mount to insulate the External Antenna.

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6. WHEEL SENSORS

Problem	Possible Causes	Check & Resolve
"Lost Sensor" warning on display	<ul style="list-style-type: none"> If the monitoring unit does not receive a signal from a particular sensor for 18 minutes then it will create a "Lost Sensor" warning on the display. 	<ul style="list-style-type: none"> Physically check if the sensor is fitted on the valve. If sensor is fitted, the sensor battery maybe at 'End of Life' and a new sensor will need to be programmed and fitted. Or, remove the sensor and check for physical damage which maybe have caused a failure. Check that the valve is in working order and air pressure is passing through the valve. The Sensor will stop transmitting if there is no air pressure passing through the valve.
Incorrect pressure reading	<ul style="list-style-type: none"> Damaged malfunctioning valve or valve pin Incorrectly fitted / cross threaded Sensor Faulty Sensor 	<ul style="list-style-type: none"> Replace malfunctioning valve Incorrectly fitted / cross threaded Sensor Replace with new Sensor - Program using SL Tablet
Incorrect pressure reading	<ul style="list-style-type: none"> Manually checking pressure in the wrong tyre, Sensor may be refitted to incorrect wheel position 	<ul style="list-style-type: none"> Pressure check both inside and out wheels on a dual set. Check with Sensor ID and positon with programming tool
Rubber Sensor seal pulled out	<ul style="list-style-type: none"> Sensors screwed on too tight causing rubber seal stick/ fuse to the end of the valve 	<ul style="list-style-type: none"> DO NOT OVER TIGHTEN SENSORS – JUST FINGER TIGHT TO ¼ - ½ TURN PAST WHEN AIR IS SEALED AND FIRM Smear a small "dob" of Petroleum Gel/ Vaseline into the thread end on each Sensor. This will lubricate the seal and prevent sticking

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7. SAFETRACS GPS DEVICE.

Problem	Possible Causes	Check & Resolve
Device not tracking or data not updating "Online"	<ul style="list-style-type: none"> No ignition power (white wire), no direct battery power (Red wire). 	<ul style="list-style-type: none"> Check fuses and power wire connections - Use 3 Amp or 5 Amp fuse. Red – direct battery power 12/24 VDC White – after ignition power 12/24 Volts Black – Earth (Do not connect the green wire – it is PTO only) Check vehicle wiring for possible causes for a blown fuse.
TPMS data not showing / updating "Online"	<ul style="list-style-type: none"> Loss of data connection between MTR HUB and SAFETRACS GPS device 	<ul style="list-style-type: none"> Check data Y-split cable connection and serial cable is connected – Replace Y-split cable

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