Genie
A TEREX BRAND

Inspection Instructions

Troubleshooting Guide

Lift Connect™

Original Instructions
First Edition
Third Printing
Part No. 1295927GT
January 2022

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Troubleshooting

Section 1

Visual Inspection

Inspect the M7 module for the following items:

- physical damage
- loose or missing fasteners
- disconnected wires / harnesses
- burnt, chafed or pinched wires and harnesses
- damaged harness connectors
- terminal corrosion in harness connectors
- water in harness connectors

Section 2

Equipment Controls Fault Message

If applicable, to determine if the M7 is present on the machine, Lift Connect **Installed** must be selected on the machines **Models and Options** menu setting.

Genie Controls implements proprietary security measures to ensure the installed M7 operates properly with Genie controls. If the M7 fails or is disconnected the **Telematics Not Detected** fault is displayed.

Control System	Telematics Not Detected Fault Code
ALC600, ALC1000, Plus1	56-13
SmartLink	C078

Equipment TRC Electrical Check

1 Disconnect the M7 telematics module from the machine.

2 Turn the key switch to ground control and pull out the red Emergency Stop button to the on position.

Engine powered models: Start the engine.

- Check power on pins 1, 4 and 5 of machine connector.

⊙ Result: 12V DC on each pin.

DC, FE, Bi-Energy models:

- Check power on pins 1 and 5 of the machine connector.

⊙ Result: 24V DC on each pin.

- Activate any elevate function and check power on pin 4.

⊙ Result: 24V DC on pin 4.

Troubleshooting

Section 3

M7 Troubleshooting Table

Description	Probable Cause	Corrective Action
Control Panel Displays “Telematics Not Detected” Fault Code	M7 Missing / Disconnected	Locate the M7 and verify it is connected to the Telematics Ready Connector.
		M7 module not installed: Install M7 module. Go to **Models & Options** settings, select **Lift Connect**, select **Not Installed**.
		To order replacement parts go to www.gogenielift.com or call 1-800-536-1800.
		For technical support contact your local Genie Dealer. For help finding a dealer go to, https://www.genielift.com/en/support/service.
		Refer to Section 2 for fault details.
		For M7 installation and activation refer to https://www.genielift.com/lift-connect.
Unit Does Not Check In / Not Available On Map	Unit Not Activated	Contact your Lift Connect Product Specialist to confirm the M7 is activated. Or email AWP.LiftConnect@terex.com or call 888-681-1812.
	M7 not powering on	Check M7 LED's. Refer to Section 4 for LED status indicators.
		Check power connections / wiring. Refer to the TRC Function Pin Out in the Lift Connect Service Manual Supplement.
		Check in-line fuse to Pin 1 of the Telematics Ready Connector. Verify there is 12VDC or 24VDC. (models may vary) Replace the M7 if necessary.
		Verify power connections are on. (Un-Switched)
	Faulty M7 module	Replace M7 module.
	Antenna line of site to GPS satellites obstructed	Move machine to area that is free of obstructions.

M7 Troubleshooting Table (cont.)

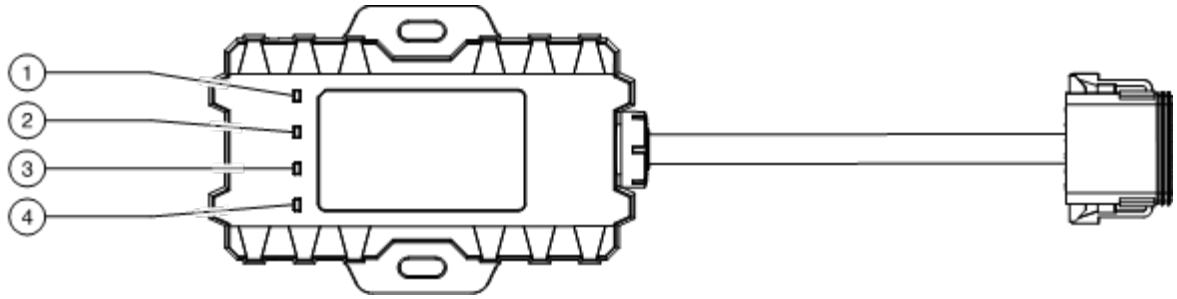
Description	Probable Cause	Corrective Action
Repeated In-line Fuse Failure	Damaged harness	Replace harness.
	Faulty M7 module	Replace M7 module.
No CAN Bus values	CAN Bus not communicating	Refer to TRC Function Pin Out of the SAE J1939 wiring section of the Lift Connect Service Manual Supplement. May need to reverse CAN (+) and CAN (-) signal wires on terminal strip.
	Termination resistance missing	Termination resistor may be disconnected or faulty. Verify terminal plug is properly installed. Terminal plug should measure 120 ohms resistance.
	Control panel issue	If CAN Bus did communicate, but no longer does, refer to machine control panel guide.
Incomplete CAN Bus data	Incorrect M7 configuration	Contact your Lift Connect administrator if you need assistance.
	Customer ECU issue	
Engine is running but M7 data indicates engine not running	Engine data not transmitting	Verify equipment has CAN controlled engine installed. Inspect J1939 harness for connection and/or damage.
	No CAN Bus data	Refer to J1939 wiring section of the M7 Installation Guide to check connections required.

Troubleshooting

Section 4

LED Status Indicators

The M7 is equipped with four status LEDs, one each for GPS, wireless COM, Bluetooth and Diagnostics. The LEDs use the following blink patterns to indicate service:



1. Red 2. Blue 3. Green 4. Orange

COM "Cellular" LED (Orange) Definitions

Condition	**LED**
Modem off	Off
Modem on and searching	Slow blinking
Network available	Fast blinking
Registered but no inbound acknowledgment	Alternates from solid to fast blink every 1 second
Registered and received inbound acknowledgment	Solid

Table 2: Com "Cell" (Orange)

GPS LED (Green) Definitions

Condition	**LED**
GPS Off	Off
GPS On / No GPS Fix	Slow blinking
GPS Time Sync	Fast blinking
GPS Fix	Solid

Table 3: GPS LED Definitions (Green)

Bluetooth LED (Blue) Definitions

Condition	LED
Modem off	Off
Modem on and searching	Slow blinking
Connected to sensor	Solid

Table 4: Bluetooth LED Definitions (Blue)

Diagnostics LED (Red) Definitions

Condition	LED
Machine input off / start up	Off
Normal operation	Blink On/Off every 4 seconds
CAN Bus disconnected	Blink On/Off every 0.5 seconds

Table 5: Diagnostics LED Definitions (Red)

Section 5

Unit Verification

Once all troubleshooting measures are complete, verify the M7 module is powered on and operating.

Using the **Lift Connect web portal**, verify the M7 module is communicating.

Note: The M7 module may take several minutes to establish a connection.

Troubleshooting

Section 6

Diagnostic Capabilities

This section covers the messages that the M7 module will be able to provide to compatible machine controllers. The messages are intended to be used for diagnosis of the M7 module.

Network Status

PGN:		65507 (0xFFE3)
Source Address:		37 (0x25)
Destination Address:		Controller Specific
Broadcast Frequency Interval:		TBD
Start Position	**Length**	**Parameter**
0	1 byte	GPS Position Obtained and Locked (1=True, 0=False)
1	1 byte	GPS Satellites in View (0 to 255)
2	1 byte	Horizontal Dilution of Precision (Percent of 0.1 to 99.0)
3	1 byte	
4	1 byte	Satellite State (0=Not Connected, 1=Connected)
5	1 byte	Satellite Signal Strength (0=No Signal, 1=Low Signal, 5=High Signal)
6	1 byte	GPRS State (0=Not Connected, 1=Connected)
7	1 byte	GPRS Signal Bars (0=No Signal, 1=Low Signal, 5=High Signal)

Time Stamp

PGN:		65508 (0xFFE4)
Source Address:		37 (0x25)
Destination Address:		Controller Specific
Broadcast Frequency Interval:		TBD
Start Position	**Length**	**Parameter**
0	1 byte	Millennial Time Stamp – Number of seconds in the millennium (since 12:00am, Jan. 1, 2001) at the time the message was sent from the TCU
1	1 byte	
2	1 byte	
3	1 byte	
4	1 byte	(spare)
5	1 byte	(spare)
6	1 byte	(spare)
7	1 byte	(spare)

Diagnostic Capabilities (cont.)

Digital I/O

PGN:		65280 (0xFF00)
Source Address:		37 (0x25)
Destination Address:		Controller Specific
Broadcast Frequency Interval:		TBD
Start Position	**Length**	**Parameter**
0	1 byte	Input State (0=OFF, 1=ON)
1	1 byte	
2	1 byte	(spare)
3	1 byte	
4	1 byte	(spare)
5	1 byte	
6	1 byte	(spare)
7	1 byte	

Analog Inputs

PGN:		65286 (0xFF06)
Source Address:		37 (0x25)
Destination Address:		Controller Specific
Broadcast Frequency Interval:		TBD
Start Position	**Length**	**Parameter**
0	1 byte	Analog 0 – Reading in millivolts (mV)
1	1 byte	
2	1 byte	Analog 1 – Reading in millivolts (mV)
3	1 byte	
4	1 byte	Analog 2 – Reading in millivolts (mV)
5	1 byte	
6	1 byte	Analog 3 – Reading in millivolts (mV)
7	1 byte	

Troubleshooting

Section 7

M7 Power and Operations

Operational voltage (supply voltage)	12 - 24 VDC
Absolute maximum voltage range	6 - 90 VDC
Active tracking power consumption	~76mA @ 12V
Other modes	~1.6mA @ 12V Hibernate mode
	~9.41mA @ 12V Sleep
	~277mA @ 12V Internal battery charging

Active Tracking

The M7 enters Active Tracking mode when it has constant power applied via the TRC, the red Emergency Stop button is pulled out and the key switch is ON and/or the engine is running, or in the case of DC equipment, drive, steer or lift function is performed.

Sleep vs Hibernate

The M7 Sleep Mode occurs 5 minutes after the key switch and Engine or DC Enable are OFF, the current draw drops. The M7 device can be woken up from Sleep by text, timer interrupt, or If the key switch is turned ON with red Emergency Stop button pulled out. In Sleep Mode the M7 device will wake every hour to report location.

Hibernate Mode is a deeper sleep in which the M7 only wakes up on input transition. Hibernate mode occurs when the equipment battery voltage drops below 11.1V and the M7's internal battery voltage drops below 3.6V.

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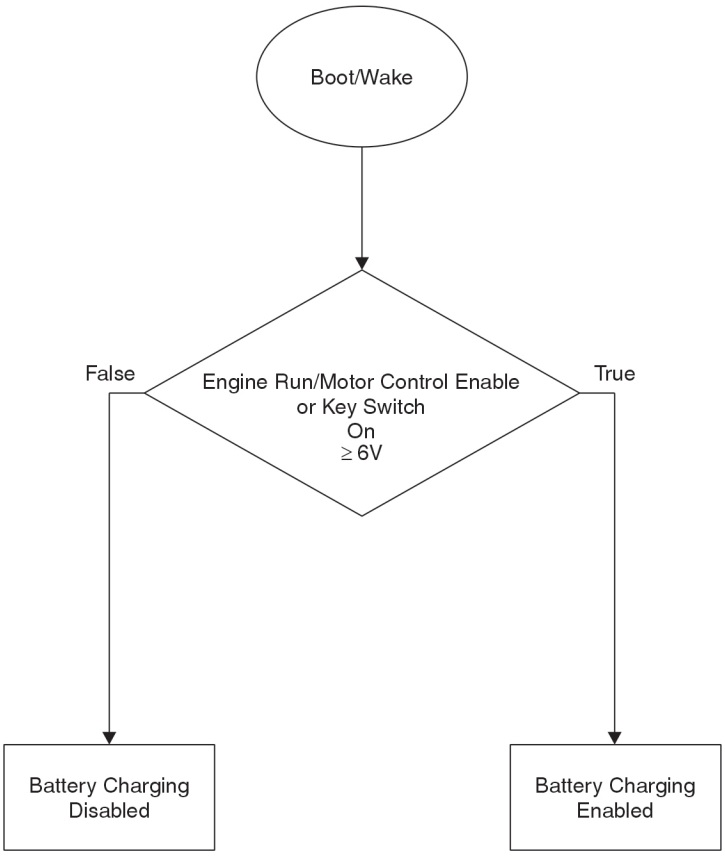
M7 Battery Charging Logic



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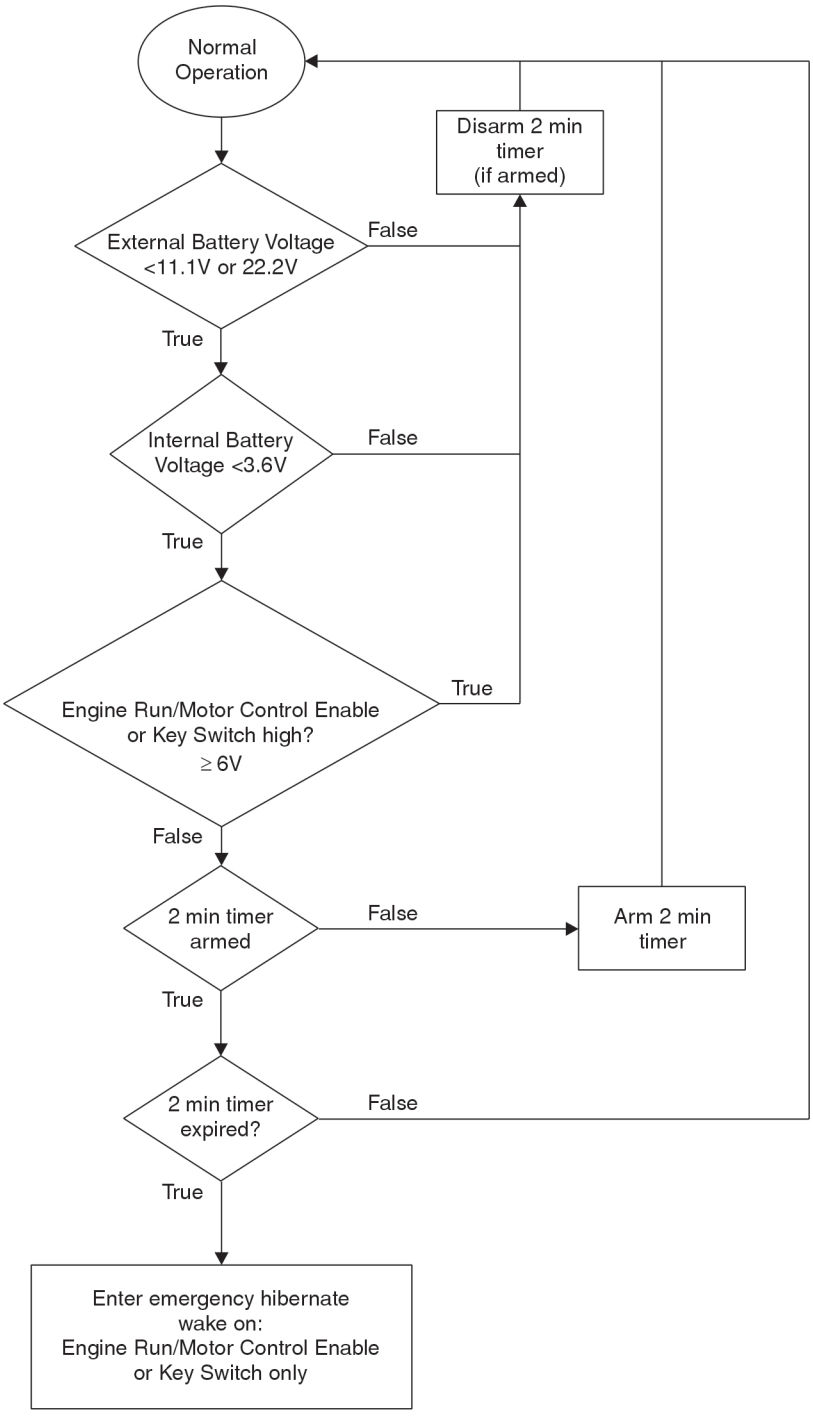
M7 Emergency Hibernate



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M7 Restricted Mode