

K101 Troubleshooting

The K101 is a set of wires interconnected together to determine tank level based upon return voltage. The internals of the K101 are a 68K ohm resistor and a 120K ohm resistor. 12vdc resistors are extremely reliable and tend to not fail. The following resistance checks will determine if there is an internal failure of the K101.

| Fill in the resistance between the wires | Orange | Green | Yellow |
|--|--------|-------|--------|
| Red | | | |

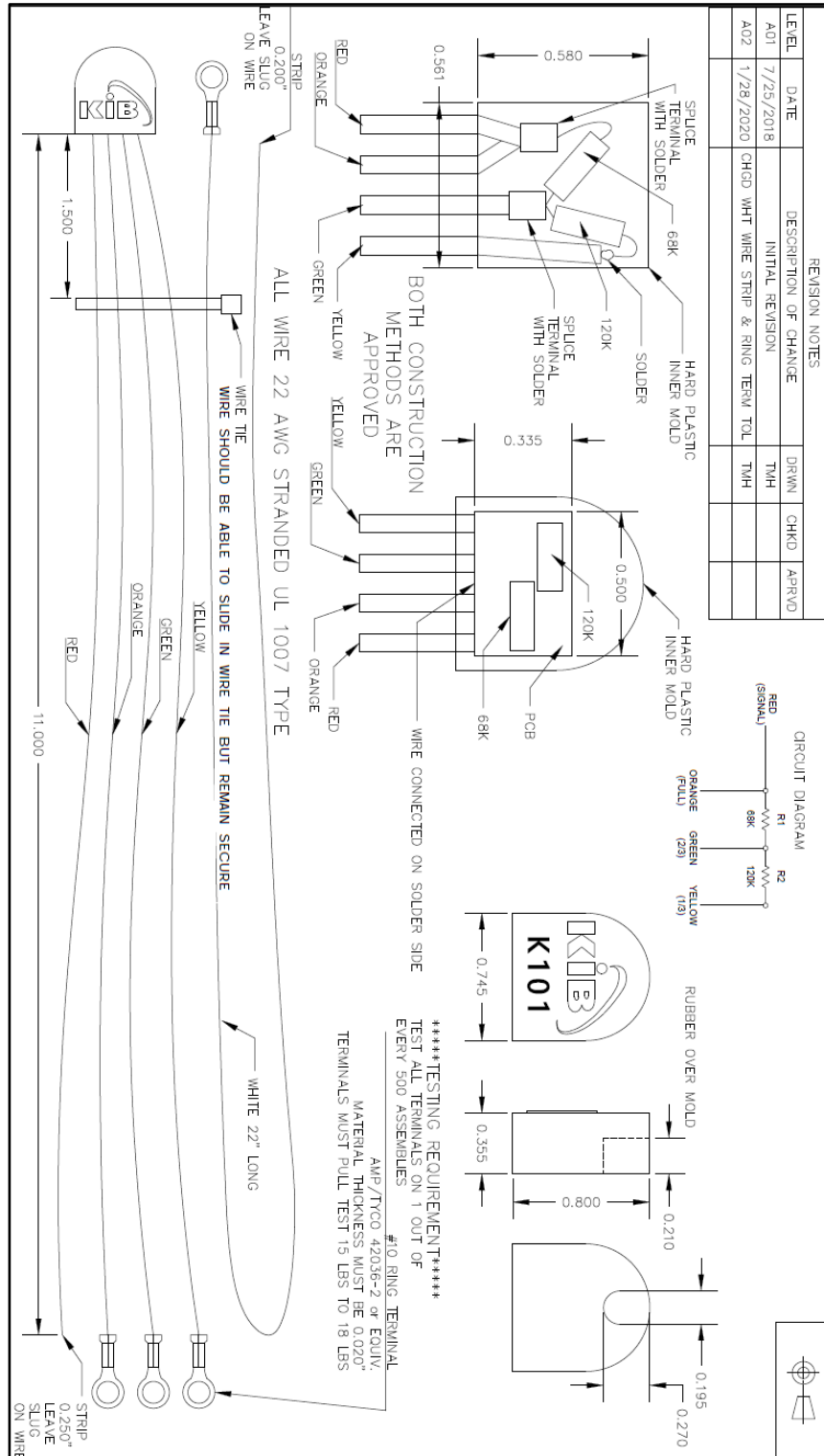
- 1.) Is the resistance between Red and Orange equal to 0 ohms? Yes, Go to Step 2. No, go to Step 4.
- 2.) Is the resistance between Red and Green equal to 68K ohms? Yes, Go to Step 3, No, go to Step 4
- 3.) Is the resistance between Red and Yellow equal to 188k ohms? Yes, Go to Step 5, No Go to Step 4.
- 4.) K101 Tests Bad – Replace K101 – return this document with defective K101.
- 5.) K101 Tests Good – **DO NOT REPLACE**. The issue is in the wiring or panel.

Technician Name _____

Dealership Name _____

Date _____

K101 Troubleshooting





Monitor Panel Diagnostics

November 2023

Table of Contents

Introduction 3

M-K Panel Pinouts 4

Troubleshooting 5

 Diagnostics 6

 No indication on the panel..... 6

 Displays “E” on one or more Tanks but not all..... 6

 Displays “F” on one or more Tanks but the others test good. 6

LPG Levels 7

 Display Indicates “E” all the time. 7

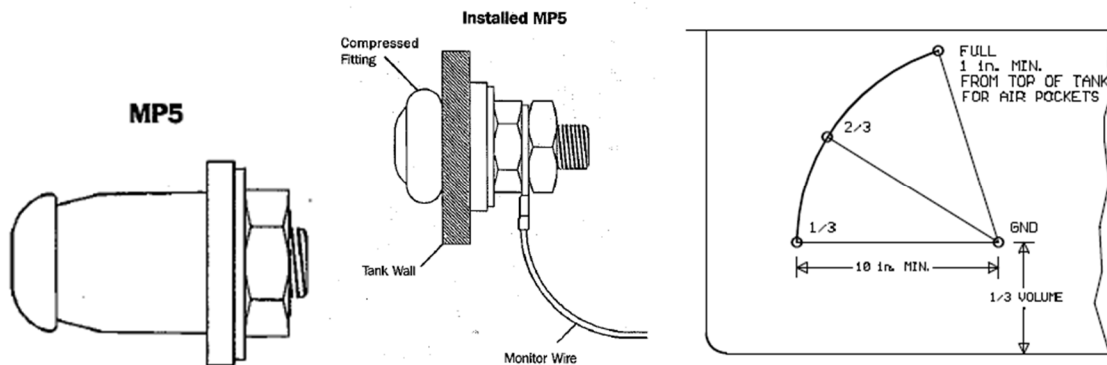
 Display indicates “F” all the time. 7

K101 8

Introduction

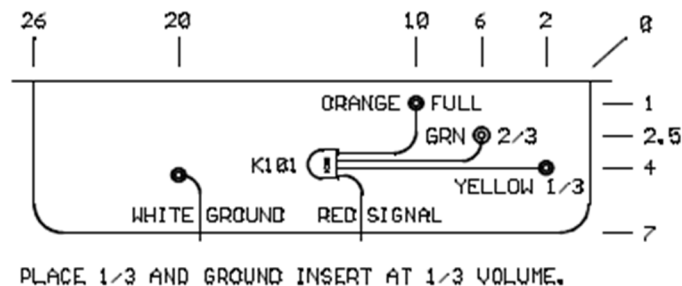
This document is intended for the troubleshooting of ATC K and M Panel tank level monitoring systems. The monitor panel utilizes a series of probes connected to the K101 resistor pack to output a specific voltage back to the panel in conjunction with the tank level.

The probes are bolts with a rubber grommet that compresses to seal the tank when installed. The sensors are installed in the tank at various heights corresponding to empty, 1/3, 2/3, and full. If the sensors are installed at the proper heights but too close to each other, the readings may be compromised. The level probes must maintain a 10-inch separation from the ground probe.



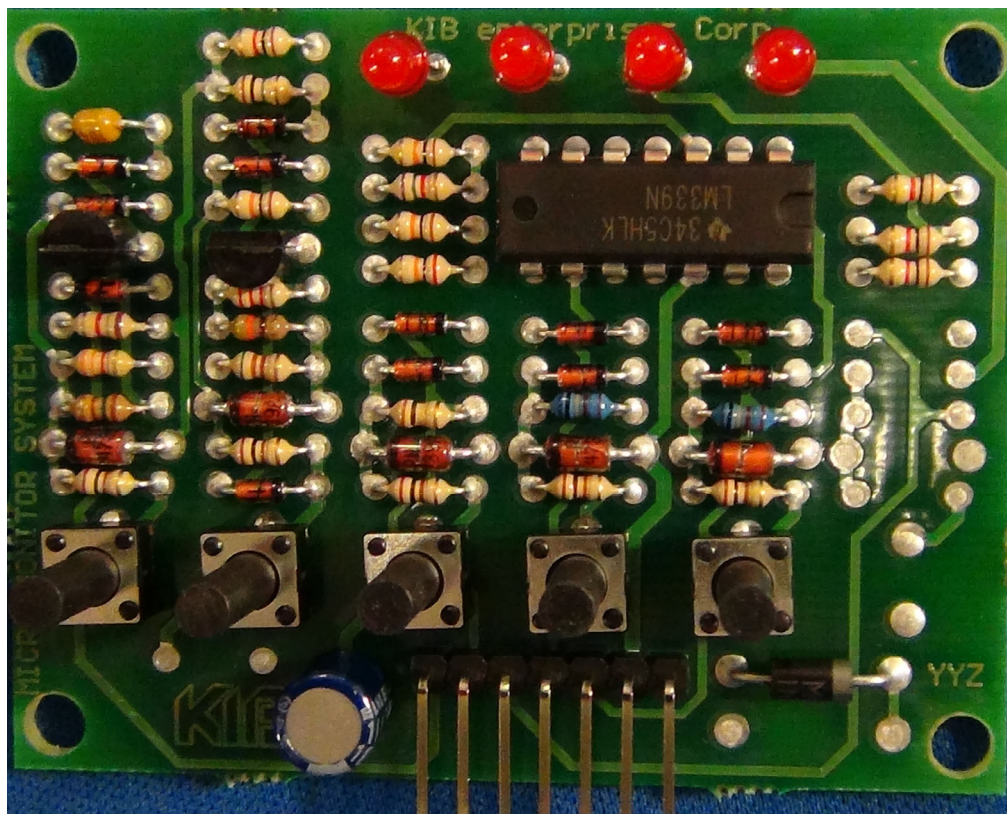
As the tank fills, the liquid inside the tank will create continuity between the probes. The probes are connected to the K101 leads.

- Orange - Full
- Green – 2/3 Full
- Yellow – 1/3 Full
- Red is the connection back to the panel. The red wire will connect to the tank to be monitored lead.
 - Panel blue wire – Fresh Water
 - Panel gray wire – Gray Tank
 - Panel brown wire – Black Tank
 - Panel black wire – Gray 2 Tank
- White is the system ground.



M-K Panel Pinouts

- Pin 1: Red – 12 VDC
- Pin 2: White – ground
- Pin 3: Gray – gray 1 tank
- Pin 4: Brown – holding tank
- Pin 5: Black – grey 2 or galley tank
- Pin 6: Blue – fresh tank
- Pin 7: Orange – LPG tank
- Pin 8: Green – galley or grey 3 tank
- Pin 9: Purple – Water Pump
- Pin 10: Pink – DSI (water heater) fault



SUBPCBM22 Board

Troubleshooting

Diagnostics

LP Gas

K101

Diagnostics

No indication on the panel

1. Is there incoming 12vdc power on Pin 1 Red Wire and system ground Pin 2 White Wire.
 - 1.1. No – Wiring issue, check fuses and restore power and ground to panel.
 - 1.2. Yes – M or K panel?
 - 1.2.1. M-panel – replace the board.
 - 1.2.2. K-panel – Is power coming to and through the Test Switch?
 - 1.2.2.1. Yes – Replace the board.
 - 1.2.2.2. No – Replace the switch.

Displays “E” on one or more Tanks but not all.

1. It is assumed that there is more than 1/3 full liquid in the tank of concern. Remove the panel and disconnect the wire from the appropriate harness wire. Does the panel read “E” or “F”?
 - 1.1. “E” – Replace the board.
 - 1.2. “F” – Problem is in the wiring of the coach, proceed to page 8 to determine if problem is with K101 resistor pack.

Displays “F” on one or more Tanks but the others test good.

1. It is assumed that the tank is not full of liquid. Remove the panel, disconnect the wire from the appropriate harness wire, and short the harness wire to ground. Does the panel read “E” or “F”?
 - 1.1. “E” - Problem is in the wiring of the coach, proceed to page 8 to determine if problem is with K101 resistor pack.
 - 1.2. “F” – Replace the board.

LPG Levels

LPG levels are read from a variable resistance provided by a sending unit mounted on the LPG Tank. The sending unit will output a resistance value from 0 ohms (Empty) to 90 ohms (Full). This resistance is read on the orange wire of the panel harness.

Display Indicates "E" all the time.

1. Does the LPG tank gauge on the tank read empty?
 - 1.1. Yes – Disconnect the wire connected to the orange wire. Does the panel read "F"?
 - 1.1.1. Yes – Problem in wiring or tank sender unit.
 - 1.1.2. No – Replace Board
 - 1.2. No – Check the resistance of the wiring coming from the gauge to the orange wire of the panel. The resistance will be measured from the wire to ground. Does the resistance measure between 1 and 90 ohms based upon the gauge reading?
 - 1.2.1. Yes – Replace the board.
 - 1.2.2. No – Wire shows short to ground. Repair wiring or replace tank gauge.

Display indicates "F" all the time.

1. Disconnect the tank gauge wire from the orange panel wire and short to ground. Does the display show "E"?
 - 1.1. Yes – Problem is in the wiring or the tank gauge sending unit.
 - 1.2. No – Replace the board.

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