SERVICE PROCEDURE
Low Coolant Level Switch Replacement

Purpose

MTU Onsite Energy is now offering a Low Coolant Level Switch that is compatible with both modern and existing system control logic. The following instruction describes replacing the existing switch with the new model on units in the field. Contact your MTU Onsite Energy Service Department at service-oed@mtu-online.com or +1 800 325 5450 if you have any questions or additional concerns related to this instruction.

Affected Platforms

This service procedure offers instructions for both modern and legacy platforms. The instructions are similar but have key differences that may affect sensor operation.

NOTICE	
	It is strongly recommended to read through this service procedure completely. Do not skip any steps.

Modern Platform

A modern platform is a digital model and has the ability to program a delay into the low coolant level fault circuit without additional components. See below for a list of units that falls under this criteria.

- MGC Series Controllers
- KDGC2020 Controllers
- DGC2020 Controllers

Legacy Platform

A legacy platform is an older model that does not have the ability to program a delay into the low coolant level sensor fault circuit. As a result, a low voltage dip caused by cranking the unit with sub-sufficient batteries or battery condition may induce a nuisance trip if this service document is not followed. See below for a list of units that fall under this criteria.

- Kassec Controllers
- KSGC-1 Controllers
- KDGC 2000 Controllers
- KGM250 Controllers
- KDGC 2001 Controllers
- KDGC 500 Controllers

The following table lists the part numbers for the sensor to be replaced along with its corresponding sensor part number for both the modern and legacy platforms.

Sensor Replacement Information

Sensor to Replace	New Sensor: Modern Platform (MGC/KDGC2020/DGC2020)	New Sensor: Legacy Platform (KASSEC, KSGC-1, KDGC2000, KGM250, KDGC 2001, KDGC 500)
SUA34140	N/A	X00A69900008 (may need to drill and tap)
SUA42898	N/A	X00A69900008 (may need to drill and tap)
SUA73500	N/A	X00A69900008 (may need to drill and tap)
SUA77815	N/A	X00A69900008
SUA77961	N/A	X00A69900008
SUA94313	N/A	X00A69900008
SUA98399	N/A	X00A69900008 with XG3241100015
SUA103046	X00A69900003	X00A69900008
SUA103047	X00A69900008	X00A69900008
SUA103048	X00A69900005	X00A69900008 with XG3241100015
SUA103049	X00A69900004 with 007603018101 (Kit 800312)	N/A

Table 1: Sensor Part Numbers

Tools and Materials

- Replacement sensor and paired components
- Standard tools
- Wire crimper
- Wire stripper
- Loctite 567 (exempt if sensor has M18x1.5 threads)
- Lockout/tagout kit
- Properly sized coolant drain kit for your generator set

  Note: Coolant does not need to be drained completely.
- Wire brush
- Zip ties
- MGC Series programming equipment (if applicable)
- Drill and tap kit (if applicable)

Figure 1

Procedure

1. Follow proper lockout/tagout.
2. Ensure proper Personal Protective Equipment (PPE) is in place.
3. Ensure coolant temperature has cooled to at least 40 °C (104 °F), and drain coolant to appropriate level below affected sensor. Take note to properly store engine coolant.
4. Disconnect the sensor that needs to be replaced from wiring harness and unthread it from the unit.
5. Clean threads and mating surface of any foreign contaminants.
6. Prepare the new sensor wires with the proper terminals and labels

   Note:
   - If using X00A69900003 or X00A69900005, prepare the sensor wiring as shown in **Step 7**.
   - If using X00A69900004, X00A69900002 or X00A69900008, skip to **Step 8** as the sensors will come prepared for installation.

7. Strip the wires of the new sensor. Attach 18-20 AWG spade terminals to the corresponding wires (See Figure 2):
   - White (-): Male spade connector (MTU Onsite Energy Part Number SUA46541)
   - Green (Sig.): Female spade connector (MTU Onsite Energy Part Number SUA46542)
   - Brown (+): Female spade connector (MTU Onsite Energy Part Number: SUA46542)

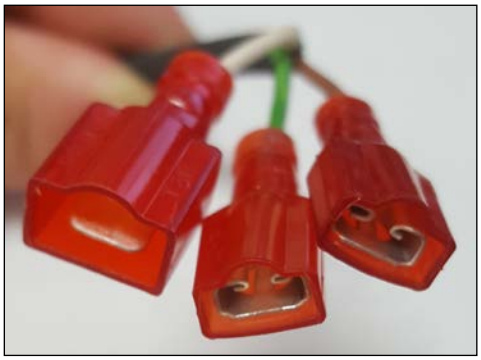

Figure 2

8. Thread and tighten the new sensor into the unit (See Figure 3). If using XS00A200.00003, be sure to use supplied copper washer. All other sensors require a coolant compatible thread sealant. MTU Onsite Energy recommends using Loctite 567.

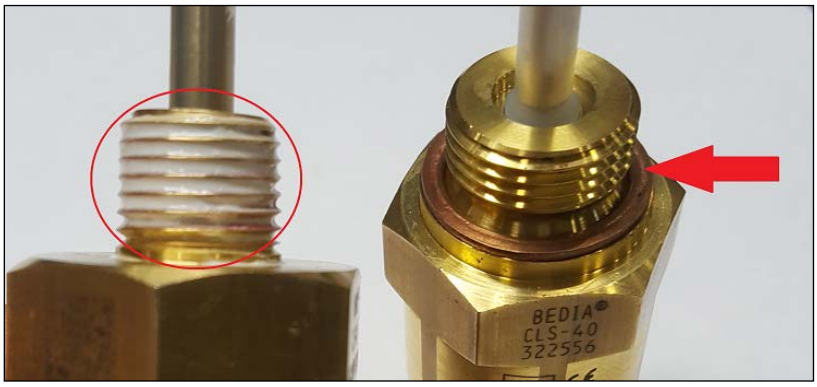

Figure 3

9. Wire the sensor to the generator.
    - If using X00A69900004 or X00A69900002, simply plug the connector in until it clicks.
    - If using X00A69900008, use the following instructions (See Figure 4):
        - Red (+) #1 wire attaches to white #1 wire on generator set.
        - White (Sig.) #21 wire attaches to white #21 wire on generator set.
        - Black (-) #9 wire attaches to white #9 wire on generator set.

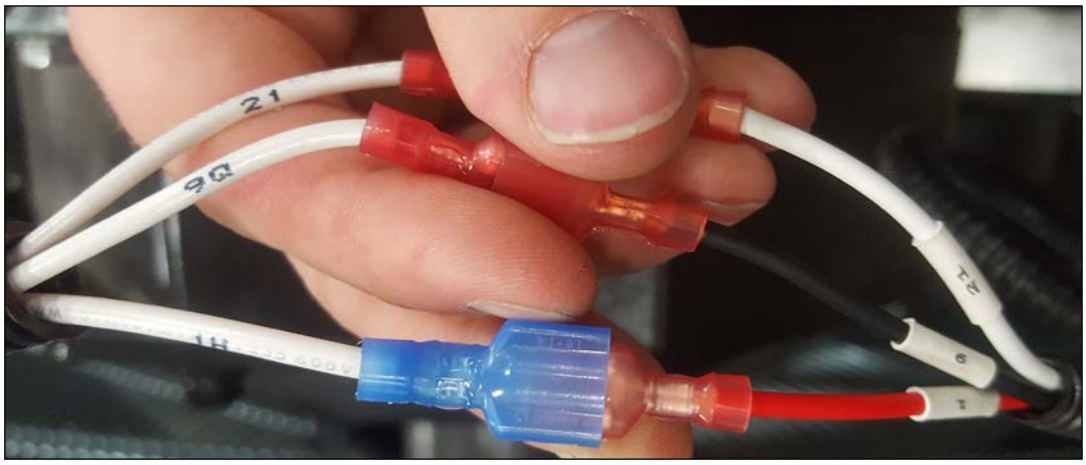

Figure 4

- If using X00A69900003 or X00A69900005, use the following instructions (See Figure 5):
    - White (-) connects to wire #9
    - Green (Sig.) connects to wire #21
    - Brown (+) connects to wire #1

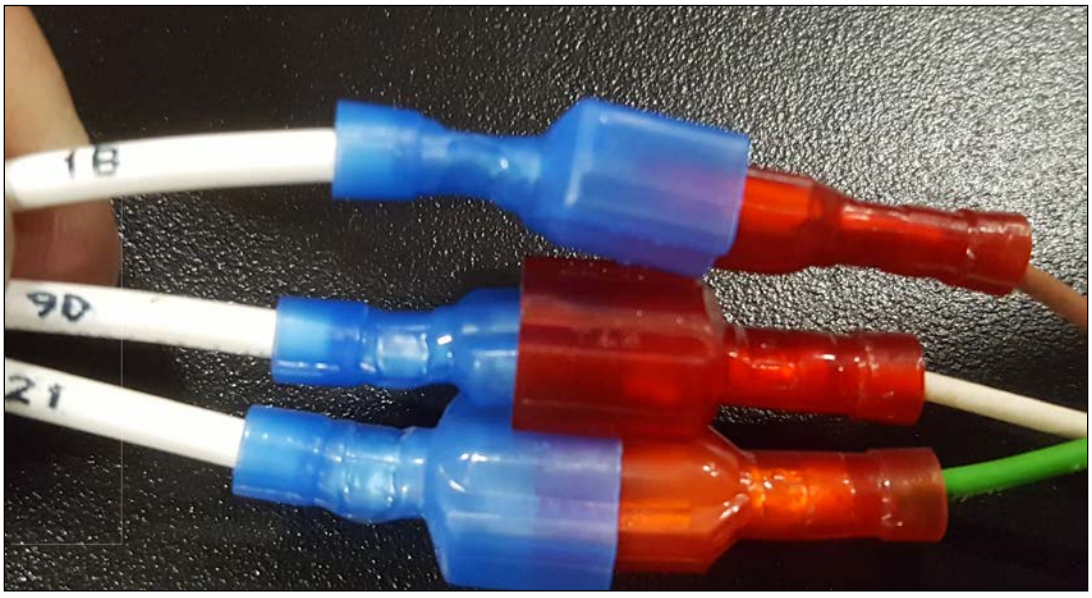

Figure 5

10. Zip tie any excess wire to the sensor body. Do not strain the wires.
11. Refill coolant and inspect for leaks. If no leaks are present, bleed air from the cooling system if needed.
12. Properly unlock the unit.
13. Verify MGC Series programming has at minimum a 16-second delay for the low coolant level alarm. This is located in the programmable functions page in BESTComs*Plus*®. If this delay is not programmed, it must be added to avoid unwanted sensor triggers during cranking. For information and instructions, refer to the applicable *MGC Series (DGC-2020) Controller Manual*.
14. Test unit for proper operation.