

MODERNIZATION RECOMMENDATION AMBIENT AIR TEMPERATURE SENSING SWITCH (ATS) FOR ENGINE IDLE SPEED-UP

PURPOSE: To improve ambient temperature sensing engine speed-up circuit.

APPLICATION: All locomotives which are equipped with any one of the following LITS Switches; 9518967, 9528924, or 9536503. These LITS switches were typically mounted in the high voltage cabinet near terminal board 61. *Thermostat.*

REFERENCE: Applicable locomotive schematic. To insure proper wiring, individual locomotive schematics should be reviewed. A sample schematic is included in this publication.

DISCUSSION: An improved ambient temperature sensing switch application has been developed for retrofit to older locomotives equipped with the cabinet mounted switch. Kit 9566543 includes new ambient temperature switch 9566542. This switch closes at 15° F causing engine speed to increase. At 25° F this switch opens and returns the engine speed to low idle. Also included in this kit is a tapping pad, a mounting bracket, and 25 feet of 2-conductor weatherproof cable equipped with a water tight Burndy plug connector. The switch is no longer mounted in the high voltage cabinet, but instead it is now mounted outside the carbody beneath the left sidesill just forward of the main air reservoir.

EMD recommends that the switch be installed outboard of the clean air compartment. This enables the cable to be routed into the high voltage cabinet. See Fig. 1.

On current production locomotives, which are equipped with 200 RPM low idle, this temperature sensing engine speed-up function is accomplished with an LITS switch that is mounted in the TC position of the temperature switch manifold. This switch senses engine water temperature not ambient air temperature.

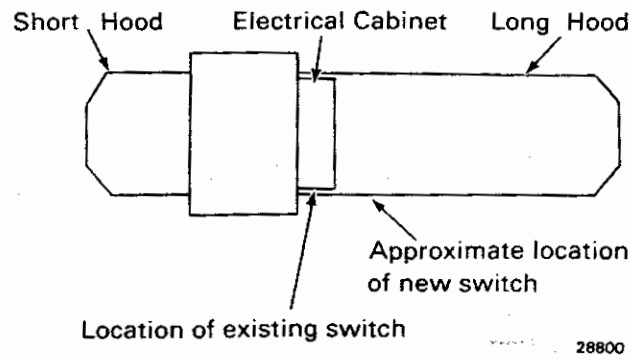


Fig.1 - Temperature Switch Location

PROCEDURE

1. Locate and weld tapping pad to underside of sill.
 2. Attach mounting bracket to tapping pad and temperature switch to bracket.
 3. Drill access hole in underframe at clean air compartment.
 4. Use straight run of 1/2" conduit to route temperature switch cable through underframe. Clamp conduit to bottom side of sill. (Conduit and clamp not provided in kit.)
 5. Secure cable to auxiliary generator cabling and follow into electrical cabinet.
 6. Remove existing fastons from cabinet mounted ambient temperature switch LITS.
 7. Wire new temperature switch by either method given below:
 - a. Splice the two cable leads to the two wires removed from the cabinet mounted switch.
 - b. Remove wires to cabinet mounted switch. Note where the wires terminate. Connect the two cable leads from the new ambient switch to the previously used terminals. Identify the two new leads with the same identification used on the removed wires.
- See Figs. 2 and 3 for typical application of new switch.

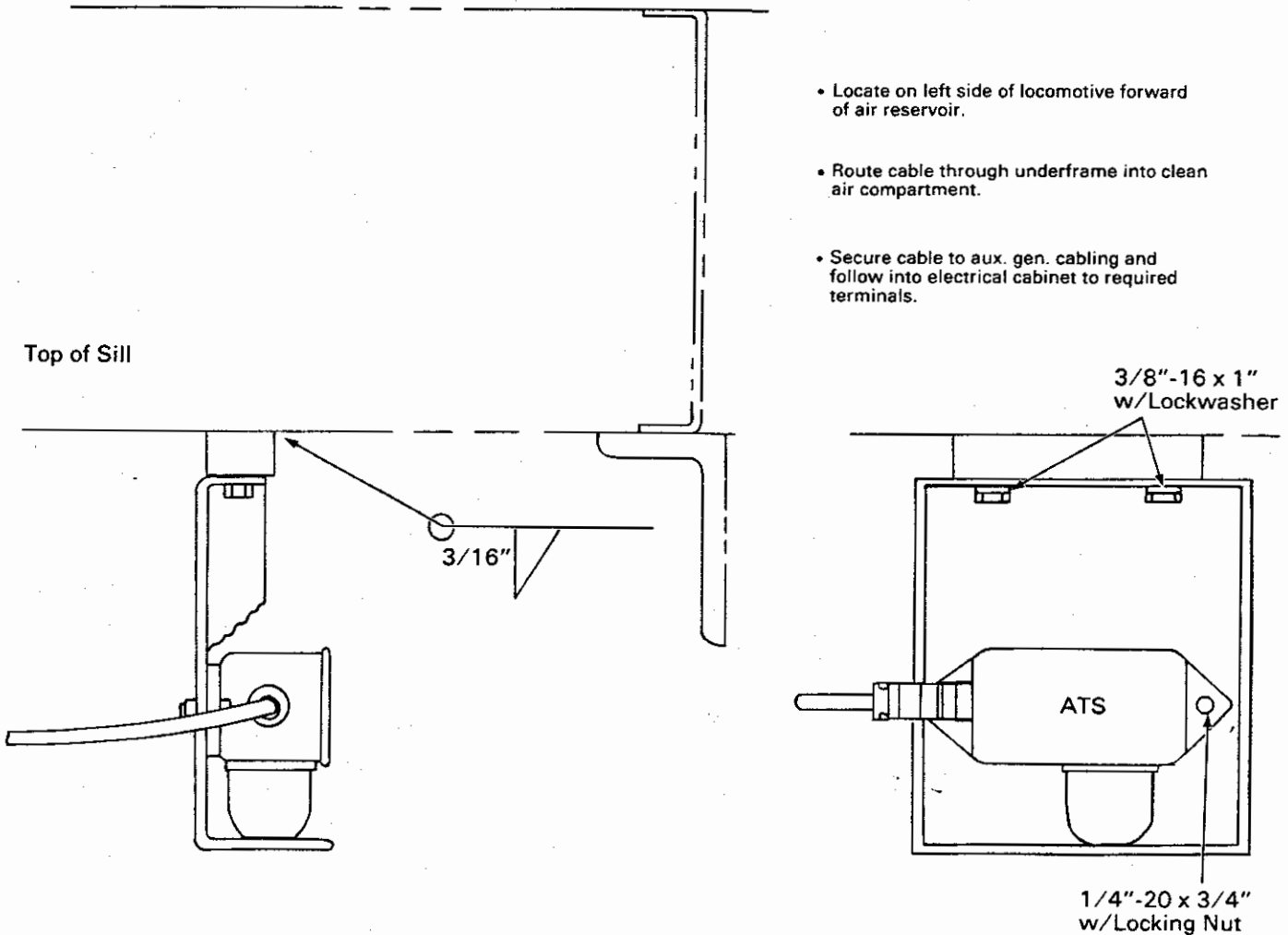
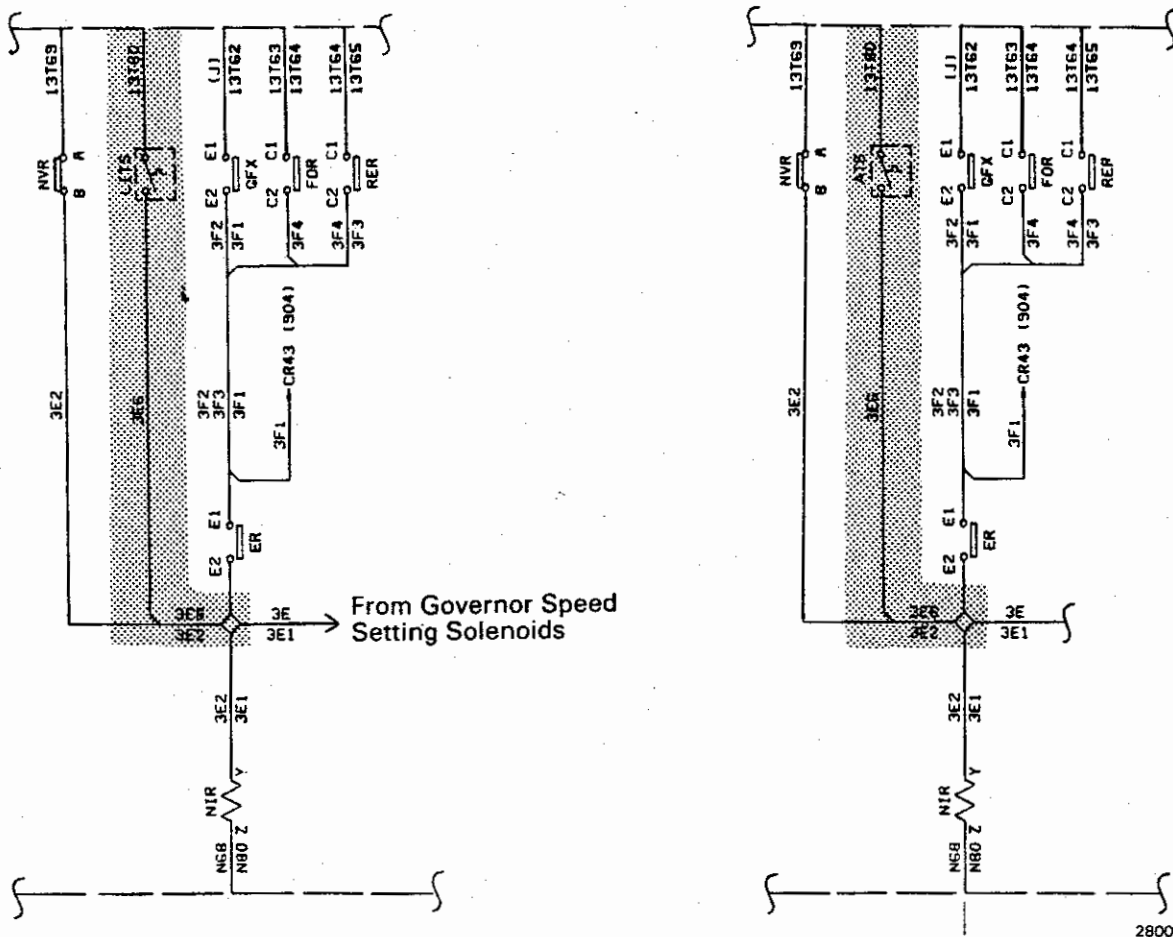


Fig.2 - Ambient Temperature Switch (ATS) Application

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Fig.3 - ATS Applied In Place Of Cabinet Mounted LITS

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