



Dear Sir / Madam

The PT1000 exhaust gas temperature sensor was introduced in connection with the Tier II release of the L21/31 and L27/38 GenSet types and the SaCoSone automation system.

However, our licensees and customers have reported a number of incidents for these engine types where the temperature signal has failed, and MAN Diesel & Turbo has therefore conducted a root cause analysis revealing the following reasons for the failure incidents:

1. Unreliable exhaust gas PT1000 sensors
2. Bad connection at the junction box due to vibrations and high heat from the exhaust gas pipe
3. Too short sleeve/pocket for the sensor
4. Cable from junction box to SaCoSone cabinet failed
5. Insufficient exhaust gas pipe insulation resulted in sensor cable failure
6. Inappropriate design/placing of cable tray for sensor

The following countermeasures have been introduced:

1. Junction boxes removed
2. Washer on engines in service to lift the sensor in the pocket
3. New sensors with full cable length
4. Insulation to be checked when replacing the sensors
5. Cable tray relocated from the exhaust gas pipe level to engine block level

The following pages give a description of the recommended solutions and countermeasures. All materials will be supplied by MAN Diesel & Turbo. For further details and shipping of materials please contact [leo9-hol@mandieselturbo.com](mailto:leo9-hol@mandieselturbo.com).

Yours faithfully

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Action code: **WHEN CONVENIENT**

## Exhaust Gas Temperature Sensors, GenSets

SL12-565/EFS/KEL  
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### Concerns

Owners and operators of MAN Diesel & Turbo four-stroke diesel engines.  
Type: GenSet L21/31 and L27/38 Tier II  
(Engines delivered after 1<sup>st</sup> January 2011)

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**Description of solutions and countermeasures:**

- Stop the engine
- Disconnect the sensor in the SaCoSone cabinet from terminal 17/117 to 27/227 (9 cylinder engine)
- Cut the cable binders
- Dismantle the cover for the exhaust gas manifold



- Dismantle all sensors and junction boxes for both cylinder and turbocharger



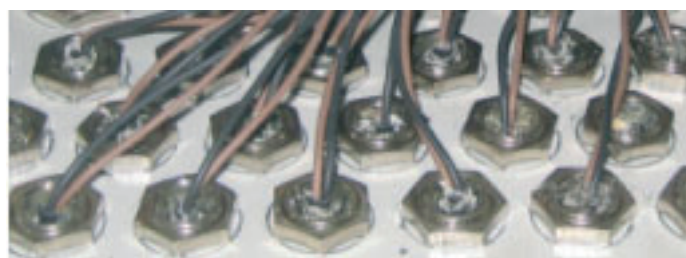
- Move the cable tray from exhaust gas pipe level to engine block level
- Install new, long cable sensors including shims/washers



- Make sure that the cable is not touching the exhaust gas pipe

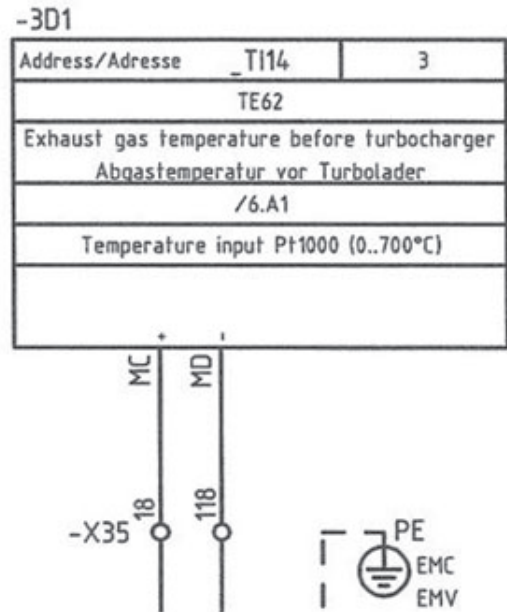
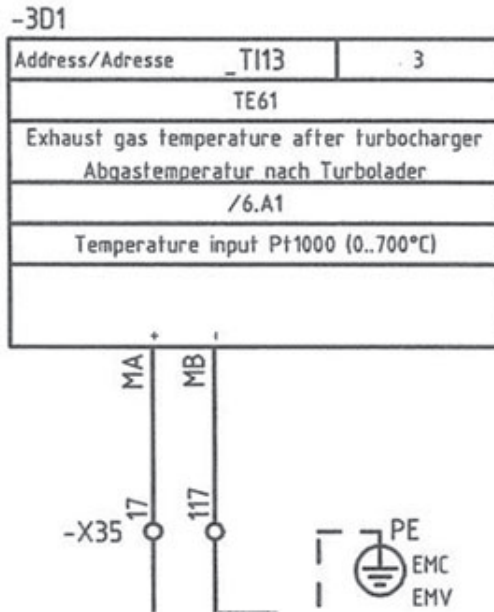


- Place the cables in the cable tray from sensor to SaCoSone cabinet. Make sure that the cables are placed according to above picture to avoid mechanical damage of the cables.
- Shorten the cable in the SaCoSone cabinet so it fits to the terminals

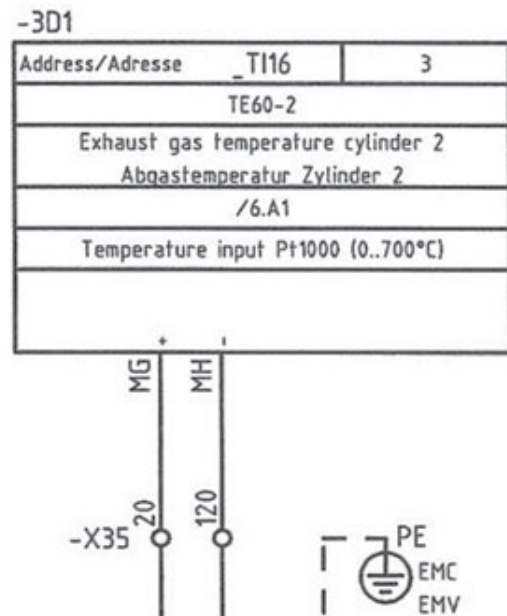
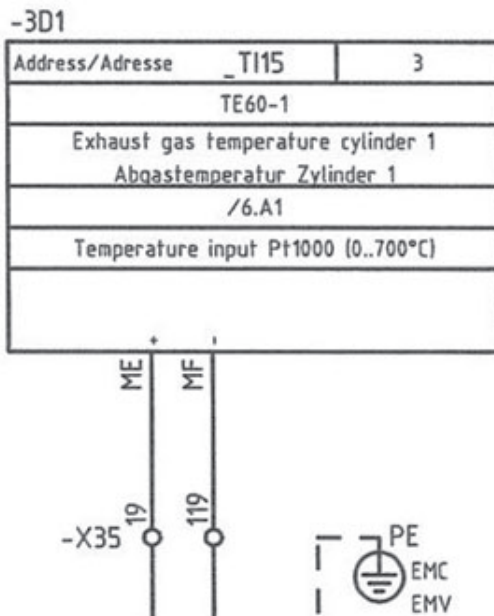


- Make sure that the shield is installed correctly in the cable union to avoid electromagnetic compatibility

- Connect the turbocharger sensors at the terminals



- Connect the sensors for the cylinder



- Reset the alarm at the SaCoSone display module and check all exhaust gas temperatures
- Install the cover for the exhaust gas manifold
- Engine ready to start
- Expected man-hours for one engine are approx 10 hours.