

ACTION CODE: AT FIRST OPPORTUNITY

SUBJECT

HP-SCR NOx sensor junction box

Concerns:

Owners and Operators of MAN B&W Two-Stroke Marine Diesel Engines

Type:

All MAN HP-SCR engines



20 January 2020

Dear Sirs

We have recently discovered that the internal heating process of the NOx sensors in SCR installations consumes high current peaks, which lead to voltage drops. These drops result in fluctuations of the temperature measurement on SCR installations connected to the same MPC as the NOx sensors; SCRCU.

Due to the disturbances, SCR operation becomes troublesome in especially low load operation where the system believes temperatures are not high enough for minimum dosing and goes from Reactor Ready state in to Heating, thus, preventing NOx reduction.

As a countermeasure, a large capacitor has been added to the NOx sensor junction box. This stabilises the voltage and reduces incorrect oscillations measured to a minimum.

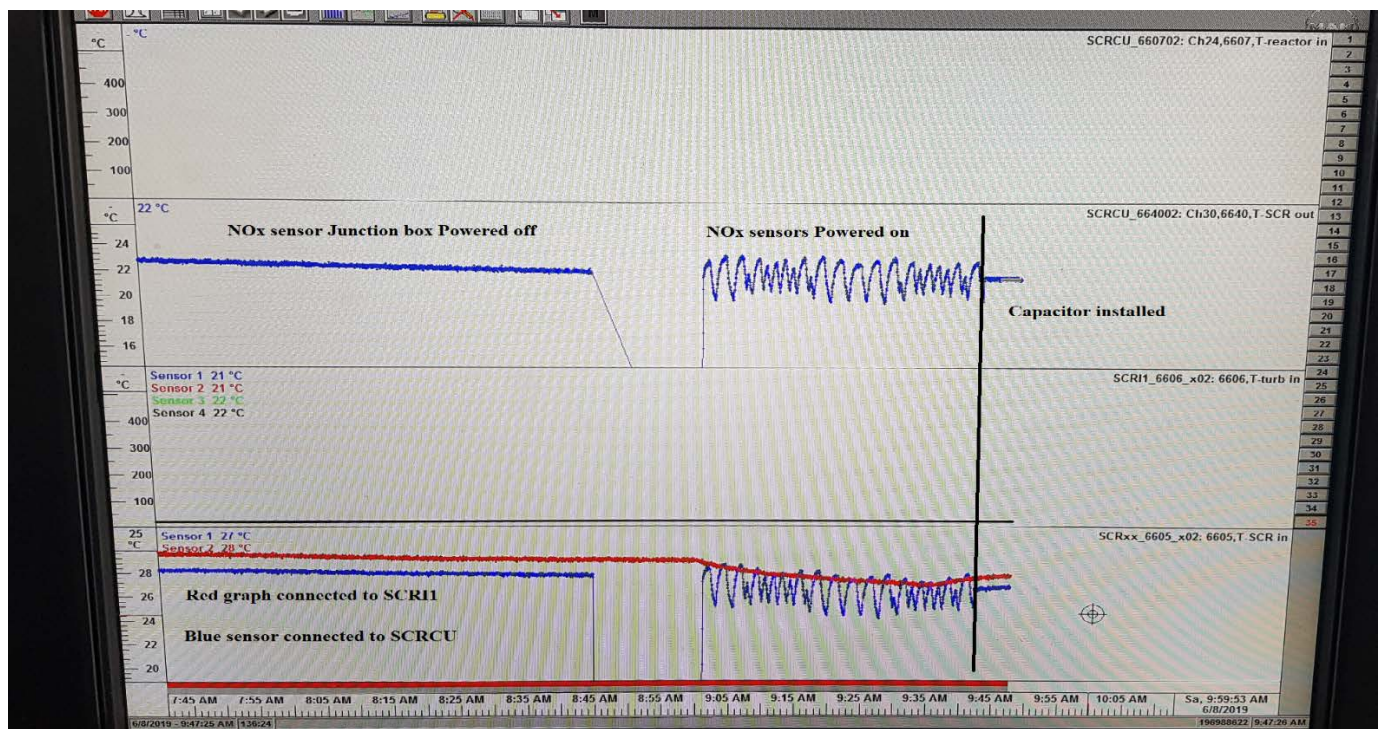


Figure 1: Temperature fluctuations caused by the internal heating of the NOx sensors

All new SCR engines with order date from August 2019 will already have the capacitors installed from production, but existing vessels will have to install one in service. Due to the limited work involved, we kindly request Crew to install on their own vessel upon receiving the upgrade kit, which will be sent to all Owners with a HP-SCR engine in service. We recommend Owners to open up NOx junction box to confirm whether a capacitor is installed. If in doubt whether one is installed, you can easily open the junction box, which is only secured with four screws and check it.

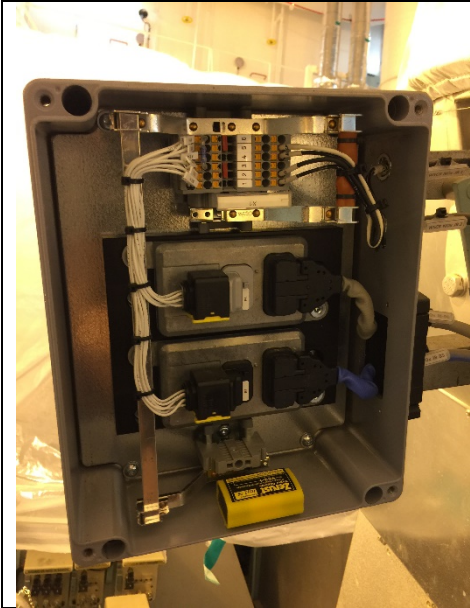
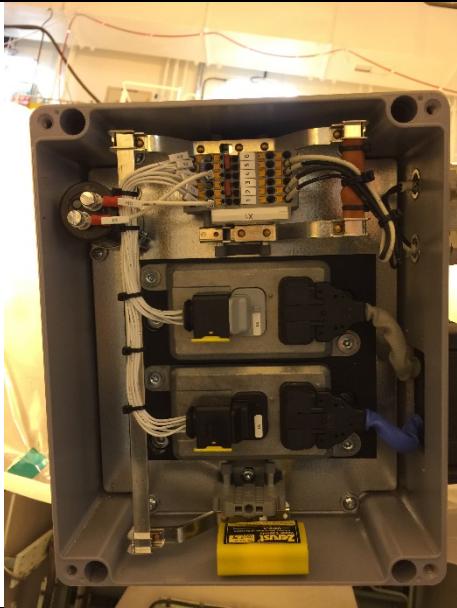
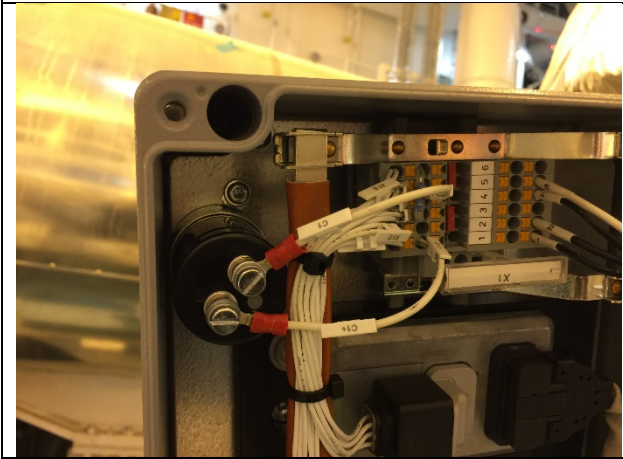
MAN Energy Solutions apologize for any inconvenience this update may cause, and kindly ask you to please forward a request for the update kit to OperationSpareparts2S@man-es.com, making sure that the following information is stated in your request:

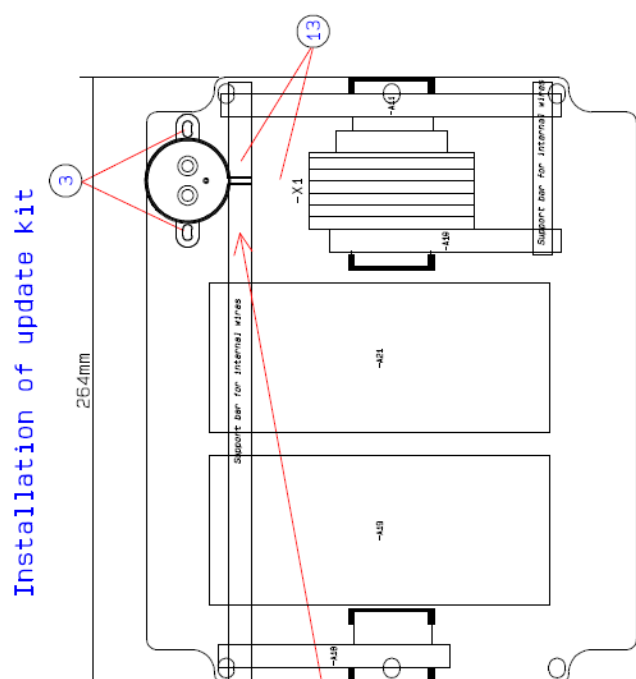
- Reference to this Circular Letter CL60364-2019
- IMO No.
- Delivery address for the update kit
- Contact person

Please allow 7 days for handling and shipping to the most commonly used destinations. We will send the parts CIP to the nearest appointed large airport, except for Argentina, Brazil and China, to which we will send EXW CPH. Any remaining costs such as agent costs, installation costs and similar are to be undertaken by the vessel.

Full drawing package will be included in the upgrade kit together with screws and securing for the capacitors.

Practically, it is advised to pre-drill a small hole for the self- drilling screws (despite their name) as this speeds up the fastening process. Without the pre-drilled holes, or using the self-drilling screw as a drill bit, it becomes very difficult to penetrate the plate of the junction box.

| | |
|---|---|
| No capacitor installed | Capacitor installed |
|  |  |
| Close-up of connections | |
|  | |



Update kit - Assembly parts

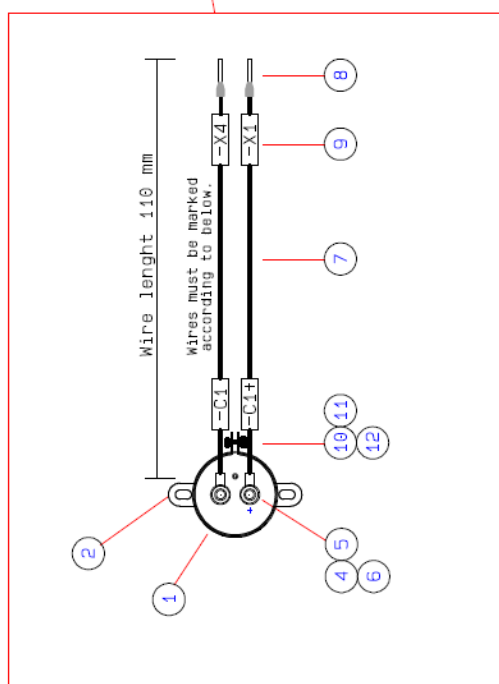


Figure 2: Capacitor upgrade kit

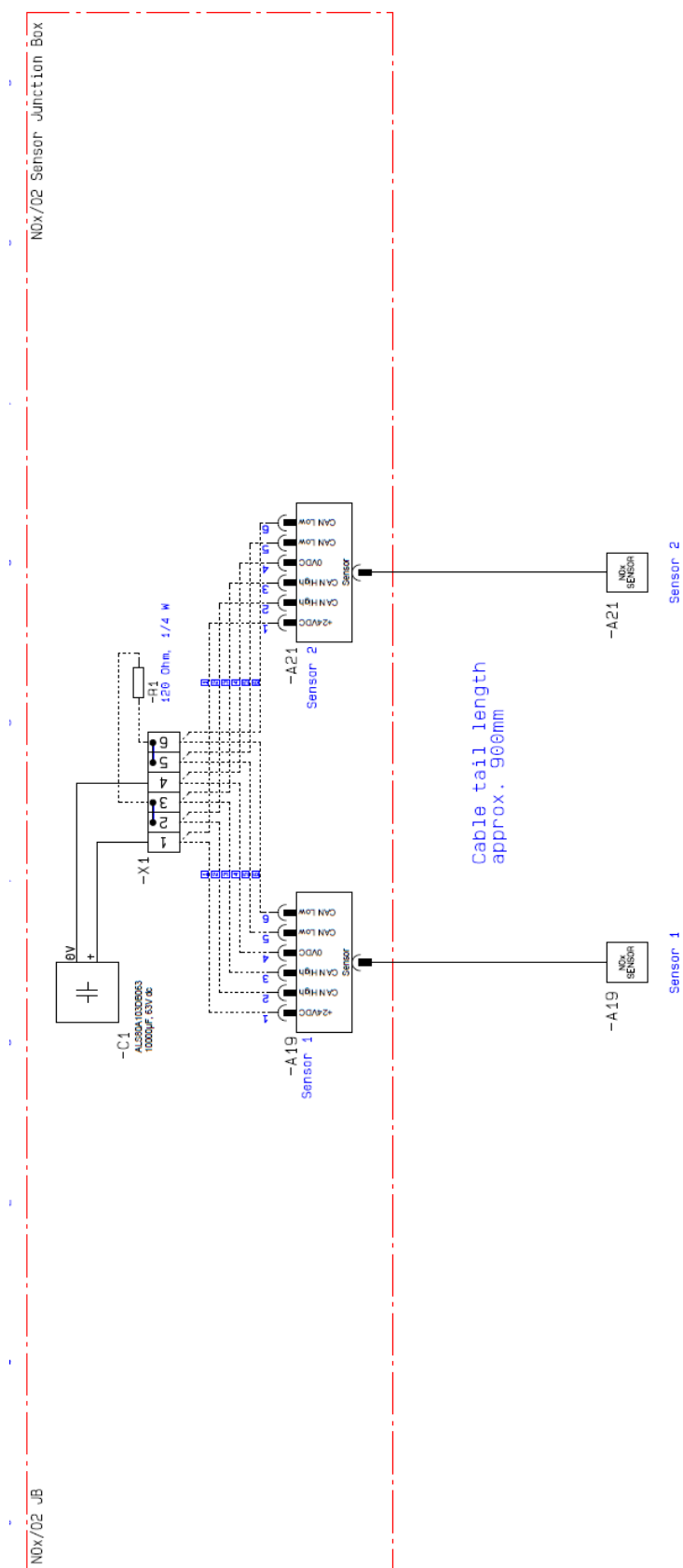


Figure 3: Installation diagram



Best regards

MAN Energy Solutions

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