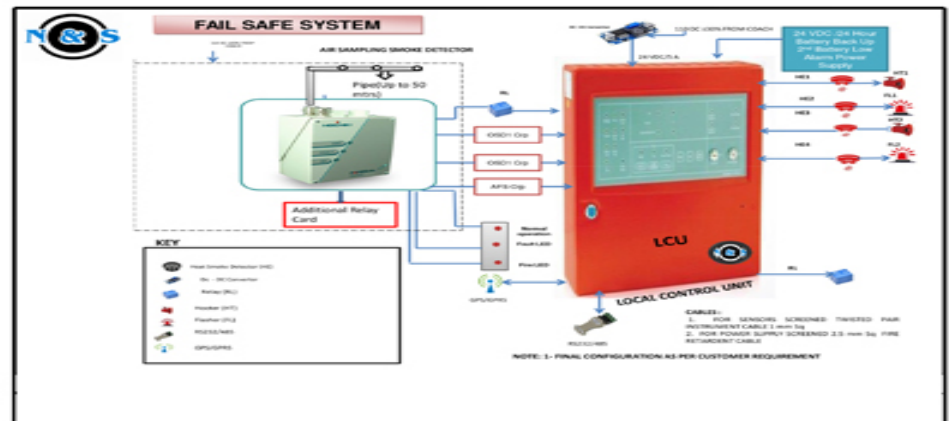




CONTROL SYSTEM



FIRE DETECTION UNIT – NS1060

- NSSPT Air Sampling Fire detection unit consists of Photo Electric Smoke Detectors, Suction unit with Airflow monitoring and LED VISUAL Indications. Alphanumeric display for displaying status of the system and shows the specific types of fault so that we can easily take an action against that fault to restore the system.
- All these functionalities have been supported using digital computing enabled through microcontroller which is EMI /EMC protected.
- The Primary application of this unit is to detect smoldering fire occurring in vicinity of suction pipe by sensing the by product of smoldering fire (i.e. Smoke) and flaming fire. The suction pipe is connected to the unit through a PG 29 Gland cable pipe connector. Air samples enter into the Chamber through openings on the suction pipe. Air flow monitoring has been implemented by calculating inlet and outlet air pressure difference

SWITCHING SYSTEM



LT INDICATION PANEL – NS1130

This unit is an indication unit. It takes input from various sensor available in the locomotive and generate output in the form of flashing LED at the front panel and then in respective terminal.

- Panel consists of 6 switches as mentioned below:
- TE LIMIT
- SAND LIGHT
- WHEEL SLIP
- FLASHER LAMP
- PCS (Pneumatic Control System)
- BREAK WARN
- **TE LIMIT:** It indicates Tractive Effort limiting functions have been activated from Microprocessor.
- **SAND LIGHT:** It indicates that sanding request has been made to the Microprocessor by means of sand switch actuation on the locomotives. Other sanding request are made by the emergency air break apply.
- **WHEEL SLIP:** The condition cause the wheel slip light to switch ON is locked wheel and these conditions is not simulating in the panel.
- **FLASHER LAMP:** Flasher ON/OFF when either outside flasher lamp is flashing provided that flasher lamp is not burned out and light circuit breaker is closed flashes at same rate at the outside flasher lamp.
- **PCS (Pneumatic Control System):** When the pressure is below 3.8 kg/cm² in main reservoir the PCS get on when EM it is recommend its goes OFF
- **BREAK WARN:** The light turns ON whenever the locomotive is generating excessive dynamic breaking current regardless of Tractive Effort meter reading.

SWITCHING SYSTEM

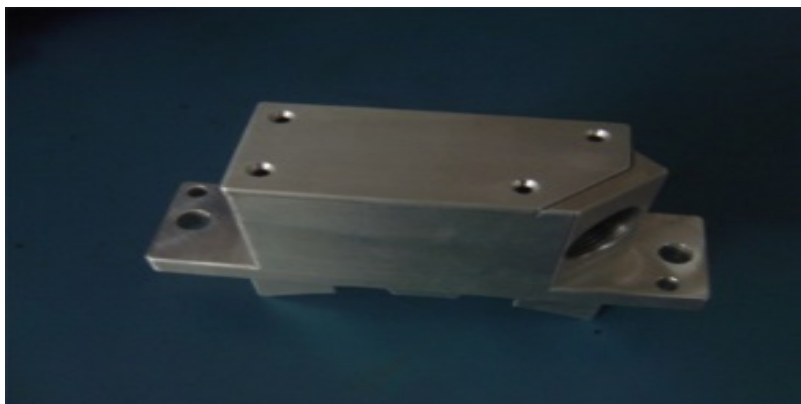


[MINIMUM VOLTAGE RELAY –
NS1110.01](#)



[MAXIMUM CURRENT RELAY
– NS1180](#)

ELECTRIC LOCOMOTIVE SENSORS



[ACTIVE SPEED SENSOR FOR TRACTION
MOTOR – NS1020.02](#)



[TEMPERATURE SENSOR OIL CIRCUIT
TRANSFORMER –NS1010.08](#)

NSSPT Developed Active Speed Sensor offers industry one of the most reliable, Accurate and robust methods of speed sensing. Purpose designing housings for arduous operating environments where Reliability is paramount. Ease of access, convenient installation, protection against severe Environmental conditions and high tolerance to shock and vibration . Capable of withstanding the requirements of IEC 60571, Environmental Reliability Qualification Standards.

DIESEL LOCOMOTIVE SPEED SENSORS



[SENSOR TURBO SPEED – NS1020.06](#)



[PICKUP MAGNETIC SPEED SENSOR– NS1020.05](#)



[MAGNETIC SPEED SENSOR– NS1020.04](#)

NSSPT Developed Active Speed Sensor offers industry one of the most reliable, Accurate and robust methods of speed sensing. Purpose designing housings for arduous operating environments where Reliability is paramount. Ease of access, convenient installation, protection against severe Environmental conditions and high tolerance to shock and vibration . Capable of withstanding the requirements of IEC 60571, Environmental Reliability Qualification Standards.

DIESEL LOCOMOTIVE TEMPERATURE SENSORS



[SENSOR ASSEMBLY 1000
RTD – NS1010.01](#)



[TEMPERATURE SENSOR TRACTION MOTOR
– NS1010.12](#)



[ENGINE TEMPERATURE SENSOR–
NS1010.10](#)

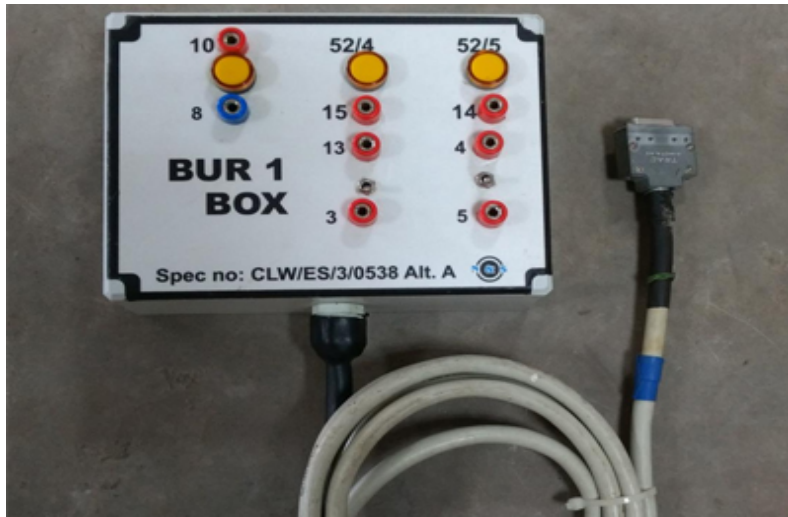
Sensor Assembly 1000 RTD contains High precision temperature sensor within stainless steel housing for use in air, oil and water medium. Three pin connector terminate these parts to the Application in Locomotive. This unit will give change in resistance proportionate to change in temperature.

PRODUCT APPLICATIONS

- Sensing of coolant temperature of compressor in locomotives.
- Air compressor temperature detection.
- Sensing of Battery Box Temperature.
- Machine Conditioning Monitoring.
- Traction Converter Cooling Circuit

Test and Calibration test Jigs

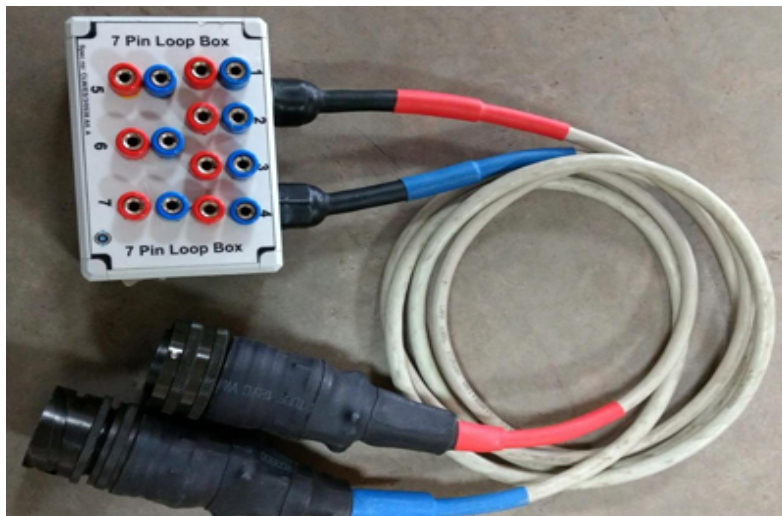
LOGIC BOX



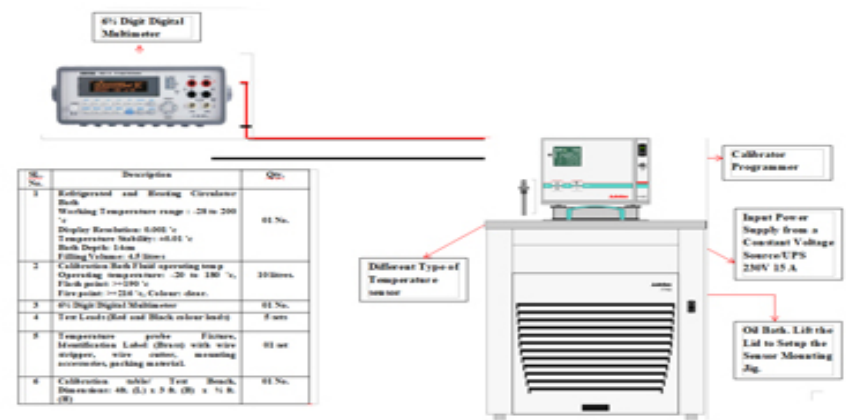
SPEED SENSOR JIG



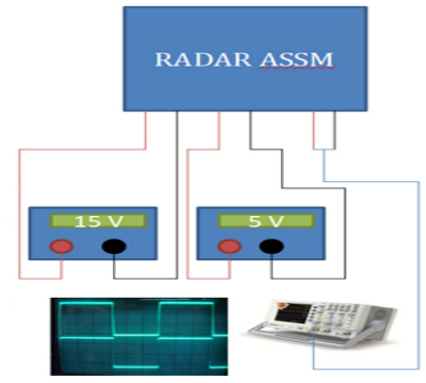
LOOP BOX



TEMPERATURE CALIBRATION NS PART NO. NS1019.02



RADAR ASSY



RADAR ASSEMBLY – NS1020.07

A change in the observed frequency of a wave, occurring when the source and observer are in motion relative to each other, with the frequency increasing when the source and observer approach each other and decreasing when they move apart. The motion of the source causes a real shift in frequency of the wave, while the motion of the observer produces only an apparent shift in frequency. Also called Doppler shift. Speed sensing Radar uses the principle of Doppler shift to determine the ground speed of the vehicle or other type of equipment. A microwave signal that is transmitted out of the sensor reflects off the target and is received by the sensor. When the target (terrain) is moving relative to the sensor, there is a change in the frequency of the reflected signal (Doppler shift). The ground speed is calculated by measuring the change in frequency.





