



TEST
SETUP

RESPONSE CHARACTERISTICS

Smoke detection

The air samples will be taken via suction system with defined suction openings and the air samples are conducted to the smoke detection chamber. If the smoke detector detects the fire aerosols in the air sample an alarm is displayed at the fire detection system and passed to the Master control of the Locomotive for necessary action.

Airflow Monitoring

A high accuracy Air flow sensor installed in the unit continuously checks the functioning of the fan and the connected suction system to make sure they are not broken or clogged up. In the case of pipe breakage/Block the airflow sensor will detect the change in the flow rate of the air inside the suction pipe and display the fault message Via LED and in additional Alpha numeric display.

Fault Signalling

Once a time lag (30 Sec, 2 Mins, 16 Mins or 128 Mins) programmed via a switch has elapsed, the fault or malfunction will be displayed at the unit Via LED and LCD Display. This fault message can be sent to main control via fault relay contact. Once the cause of the fault has been corrected the fault message will reset automatically

ENVIRONMENTAL COMPATIBILITY

- No Basic throwaway items such as packing materials, Protective covers, etc.
- Easy to overhaul
- Easy to uninstall and disassemble



Automatic
Fire Detection &
Alarm System



designed by www.alfredallan.com

DRY
HEAT

FIRE
DETECTION
UNIT



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Automatic Fire Detection & Alarm System



INTRODUCTION

NSSPT make Automatic Fire Detection & Alarm System uses world class technology for Alarm & early detection of fire using high sensitive Smoke detectors. This unit is designed for operating in critical environments like Machine room of the Locomotives, Power room and also in normal environments.

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 arrest the problem.

This unit is user friendly in which the threshold for the alarm can be set easily and also the calibration.

All these functionalities have been supported using digital computing enabled through microcontroller which is EMI/EMC protected.

FEATURES

- ³/₄ Retained existing LED display system
- ³/₄ Accuracy achieved through digital computation.
- ³/₄ Airflow monitoring on the basis of real time air pressure difference.
- ³/₄ Position of local detection along with global detection (Optional)
- ³/₄ Indications : 16x2 LCD for status monitoring
 - RED : For Smoke Detection alarm 1
 - RED LED 2 : For Smoke detection Alarm 2
 - Yellow LED : For Fault Indication (Rupture/Block in pipe network)
 - Green LED : Operations Indication
- ³/₄ Interface : RS 232 for Data downloading via PC.
- ³/₄ Events Logging : Up to 18000 events
- ³/₄ External Interface: Three DPDT Relays which can be used to trigger several devices like fire alarm, Fault Alarm, Water sprinkler etc. upon crossing the threshold volume.
- ³/₄ Threshold : Threshold can be easily set is onboard switches
- ³/₄ Calibration : Easy calibration using an external trim pot
- ³/₄ Reset : Push Button Switch used for reset

STANDARDS

EMI / EMC : IEC 801, 2, 3, 4, 5, 6
RAILWAY APPLICATION : IEC 60571, 2, 3

INDICATIONS

Function	Explanation
Reset	Reset button
Calibration	Pot for calibrating air-flow sensing
Measuring Sockets	For Calibrating air-flow
Operation LED	Unit is in operation, Power supply ON
Fault / Malfunction LED	Pipe blockage, pipe rupture, detector missing
Alarm Smoke Detectors LED	Triggering of smoke detector

SPECIFICATIONS

Electrical

Input Supply	20 - 30 V DC
Nominal Supply	24 V DC
Power Consumption normal state	220 mA \pm 20 %, at 24 VDC
Power Consumption alarm state	250 mA \pm 20 %, at 24 VDC
Power Consumption at alarm	310 mA \pm 20 %, Trigger stage at 24 VDC
Power Consumption of both	310 mA \pm 20 %, Alarm Trigger stage at 24 VDC
Alarm & fault relay ratings	120 V DC/2 A

Mechanical

Dimension (H X W X L mm)	140 X 290 X 350
Height of the unit	140 mm
Length of the case	350 mm

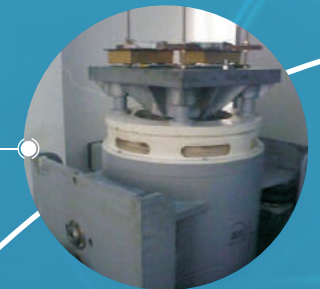
Physical

Temperature Range Operation	-20° C to + 60° C
Storage Temperature	-20° C to + 85° C
Maximum Humidity	100%

Connections

Electrical Connection	25 way sub - DBucket soldering Connector
Pipe Connection	PG 29 gland Connector
Protection Class (DIN IEC 34 Part 5)	IP 40
Indications	1. Operations - Green LED 2. Fault / Malfunction - Yellow LED 3. Alarm Smoke Detector 1 - Red LED 4. Alarm Smoke Detector 2 - Red LED
No. of Detectors	2 Nos

VIBRATION TEST



DAMP HEAT

Automatic Fire Detection & Alarm System



FACILITIES

FACILITIES

