**BETRONICS (M) SDN BHD** (602197-A)
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# Smoke Density Meter V12

## Product Description

The system comprises of a Projector Unit complete with a visible solid state light source that is fitted on a chimney or flue in direct alignment to a Receiver unit, which is complete with a photo sensor. Optical Lenses are fitted in both units and they are complete with mounting flanges for direct fitting to the chimney or flue. The standard maximum distance between the Projector and Receiver Unit is 3 metres.

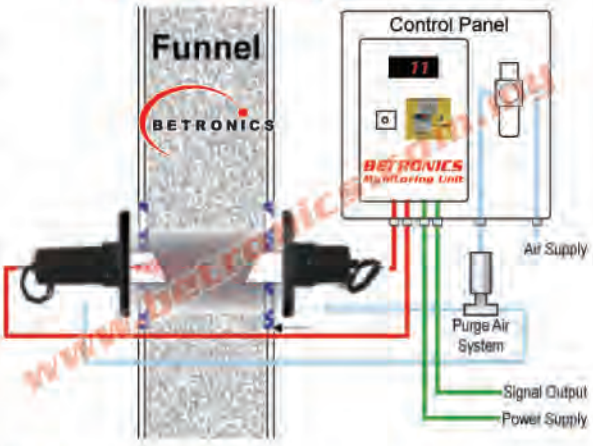
The Projector and Receiver are both supplied fitted with 2 core cable for connection to the Control Unit and it is intended that the installer should terminate this cable close to the Projector/Receiver Unit, leaving sufficient slack in the cable to allow the unit to be withdrawn from the mounting flange for Servicing purposes. The Control comprises of steel housing suitable for surface mounting or flush panel fitting, and provides a Normal and Alarm High Output LED display, together with an alarm mute button and a meter calibrated from 0 to 100% obscuration. The Control Board is complete with on site calibration facility and the ability to set an alarm point to activate the remote alarm.

## Sequence of Operation

When smoke is present in the Flue or Chimney, it will obscure the light beam and cause a change in the electrical signal on the receiver cell. This change is recognized by the control which displays the information on the panel meter. When the pre-set alarm level has been reached two sets of relay contacts will switch, the alarm LED will illuminate and a 24vDC output will be given by the control which can be used for audible and/or visible alarms locally or remotely located. Operation of the mute button will silence the 24vDC output but leave the Control Red LED illuminated and the relays switched. The Control will automatically revert to a normal condition when the level of smoke in the flue or chimney drops below the alarm level.

Installation is quite simple. The Projector and Receiver are mounted on opposite sides of the chimney or flue preferably where a negative pressure exists thus reducing the necessity of frequent cleaning of the optical systems. Where however site conditions necessitate mounting the Projector and Receiver units in areas of positive pressures, it is recommended that "Miniclean" adaptors are provided to dispense with frequent cleaning of the optical systems. Stack adaptors are available for facilitating the mounting of Projectors and Receivers on the flue or chimney.

System Drawing




- ***Digital read out measurement & record smoke density***
- ***Continuously monitoring in percent (%)***
- ***Small compact size***
- ***Scale print out with date and time***
- ***Easy operation***
- ***Meet to DOE Emission standard regulation***
  ***Appilcation : Boiler, Incinerator, Generator, Tunnel***

## Benefits to Economy & Environmentally responsible, Business friendly

Port authorities and regional authorities around the world – but especially in Malaysia increasing degrees regulating emissions from ships as well as from industrial Boiler plants. Legislation is varying, regulations in would typically rule that ships may not emit smoke with an opacity of more than 20%.

Installing V12 will help you check and document compliance with environmental standards. This will avoid fines, time-consuming investigations, and costly delays. The cost of installing V12 Smoke Density Monitor is marginal compared to a single fine.

Monitoring the emissions of your ships will also contribute positively to your image as environmentally responsible company. Especially black smoke has the potential of severely harming that image.

***For More Information, Kindly Contact Our Sales Department.***

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# BETRONICS

## Smoke Density Meter V12

***Smoke Density Meter & Emission Control***
***Rapid Response to Smoke***

The V12 Smoke Density Monitor is used to check smoke emissions from all kinds of combustion such as diesel engines, incinerators, and boilers. Betronics has Produced more than 1000of these patented Smoke Density monitor over the past years. A/S – founded in 1999 has now ten years of experience in process measurement and control of Boiler Chimneys Smoke Density meters.

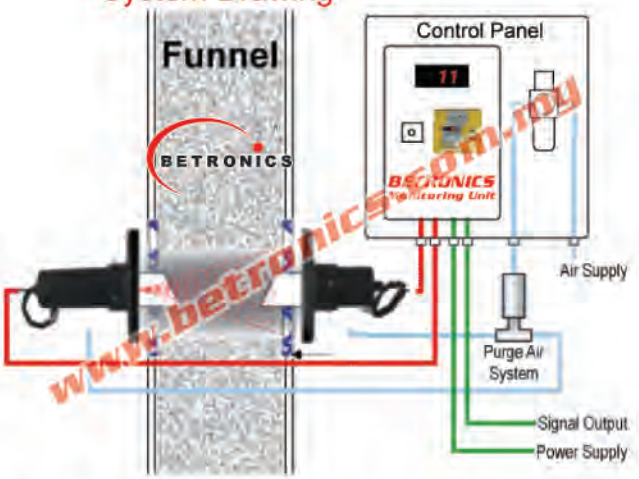
### Robust Technology & Versatile Design

The V12 Smoke Density Monitor is a particular robust system that is well suited to resist heat and vibrations in and around smoke stacks. Our patented technology removes the light source from the smoke density meters contrary to traditional opacity monitors used on the land side.

Furthermore, the V12 Smoke Density Monitor is easy to keep clean with purge air and easy to maintain. This robustness is combined with high flexibility which means that the V12 Smoke Density Monitor can be installed in very diverse settings and be adapted for your special applications.

The units have been designed to enable Industry to comply with the Clean Air Act and to give visual and audible warning when smoke exceeds a pre-set density.

System Drawing




### Functions & Features

- Full Compliance with DOE requirement
- Avoid image damaging black smoke
- Avoid investigations, fines, and delays
- Documents de facto emissions
- Simple auditing with periodic performance verification
- Focused infrared light beam
- Temperature stable optic heads – vibration resistant design
- Fiber-optic projector and receiver
- Two freely configurable alarm relays
- Easy to install – easy to configure
- Low maintenance & simple installation
- Simple installation
- Stack adaptors are available for facilitating the mounting of projectors and receivers units on the flue of Boilers Chimneys.
- Optional : Soft-copy data
- Can linked to data logger cems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