ADOS®

FILTER GUARD 206

Operating Instruction
Dust Filter Monitoring, Filter Guard 206

Issue: 05/2007

A D O S GmbH
Instrumentation and Control
Trierer Str. 23-25 · 52078 Aachen · FRG

TEL. : +49(0) 241 9769- 0
FAX : +49(0) 241 9769-16
E-Mail : info@ados.de
Internet : http://www.ados.de

Est. 1900

Contents

1. Function

The FILTER GUARD 206 is a low-cost dust filter monitoring unit. It is used at the clean air side of any type of exhaust and extraction system and provides a warning of a sudden increase in the concentration of dust, by detecting any breakdown in the filter casing or bag.

The filter guard 206 should be fitted to the clean air side of the filter in the ventilation system to be monitored, by way of the flange provided. The construction of the flange for the filter-guard 206 is such that it can be fitted to flat as well as curved surfaces (pipes with a diameter > 300mm).

The filter guard 206 requires a voltage supply of 24 VDC. The results of measurements are output by way of an analog current signal (4-20 mA) or a LON-interface. For evaluating the signals, a variety of suitable equipment can be fitted and is available from the ADOS company.
In the near future, a new version of the filter guard will be available that incorporates floating (potential-free) contacts.

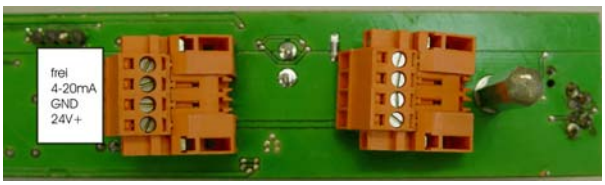
Note: The filter guard 206 is used only for warning of breakdowns in the filter. An exact measurement of the dust concentration is not possible.

2. Operating

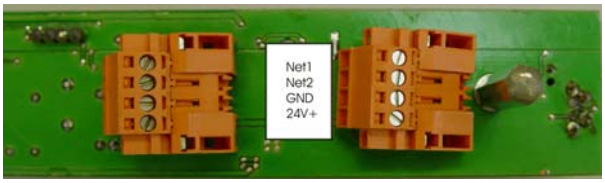
2.1 Electrical Connections

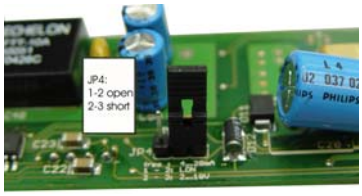
Loosen the fixing screws on the head of the sensor. Separate the sensor head from the housing by slowly turning the head.
The electrical connections are made, according to the following connection diagram:

- Connections for using the analog current output



- Connections for using the LON bus system



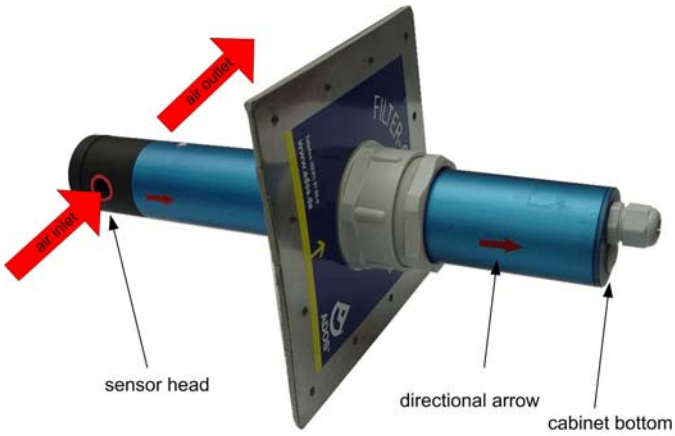


Note: All voltages must be removed before connecting the filter guard 206.
The housing of the filter guard must be connected to the equipotential bonding terminal to prevent any build-up of static charges.

2.2 Installation

Using the template provided, mark the positions of the fixing holes for the flange and the opening for the filter guard, at the clean air side of the filter to be monitored.

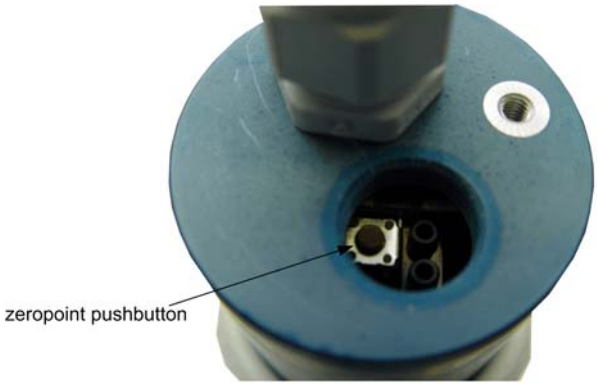
The filter guard 206 is fitted to the filter system by way of the flange provided. The sensor head should be located approximately in the centre of the ventilation duct. Also, attention must be paid to the direction of air-flow through the filter guard 206; the arrow pointing to the sensor head indicates the outlet air side, the arrow pointing to the bottom of the housing indicates the inlet air side.



2.3 Calibrating the Zero Point

After the installation, the zero reference point must be calibrated. For this, open the blind (dummy) screw on the base of the housing. The zero point is set by pressing the button. The new zero point is confirmed by a flashing LED.

Note: The ventilation system must be in operation for at least 15 minutes before a steady state of residual dust concentration is obtained, behind the filter. After this time, the zero point can be calibrated.



3. Operating Instructions

The current signal is evaluated as follows:

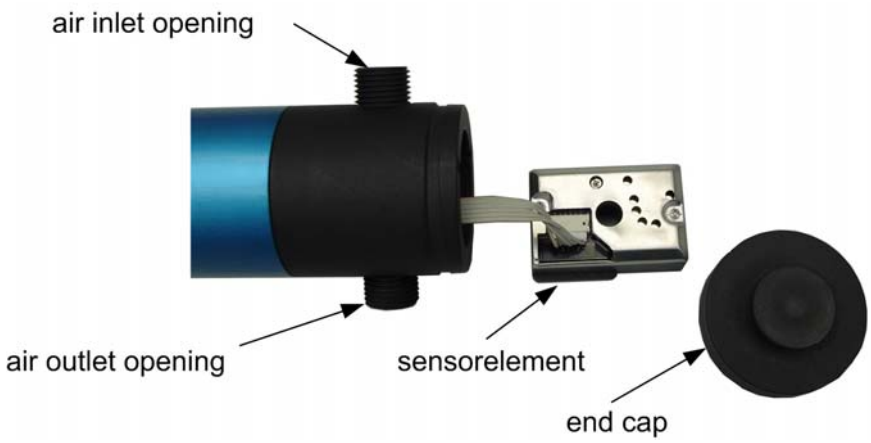
4-7 mA	:	Low level of dust concentration; the dust filter is OK.
7-12 mA	:	Dust concentration has increased. The dust filter is OK. The increased concentration is a result of the ventilation system switching on and off.
12-20 mA	:	Dust concentration is high. The dust filter is broken.

Note: After a breakdown in the filter we recommend that the sensor element be replaced (see Maintenance). If this is not carried out, the zero point must be re-calibrated.

4. Maintenance

After a breakdown in the filter, or no more than two years later, we recommend that the sensor element be replaced. A replacement element is provided in the supply of the Filter Guard 206. Extra replacement sensor elements are obtainable from ADOS at reasonable prices.

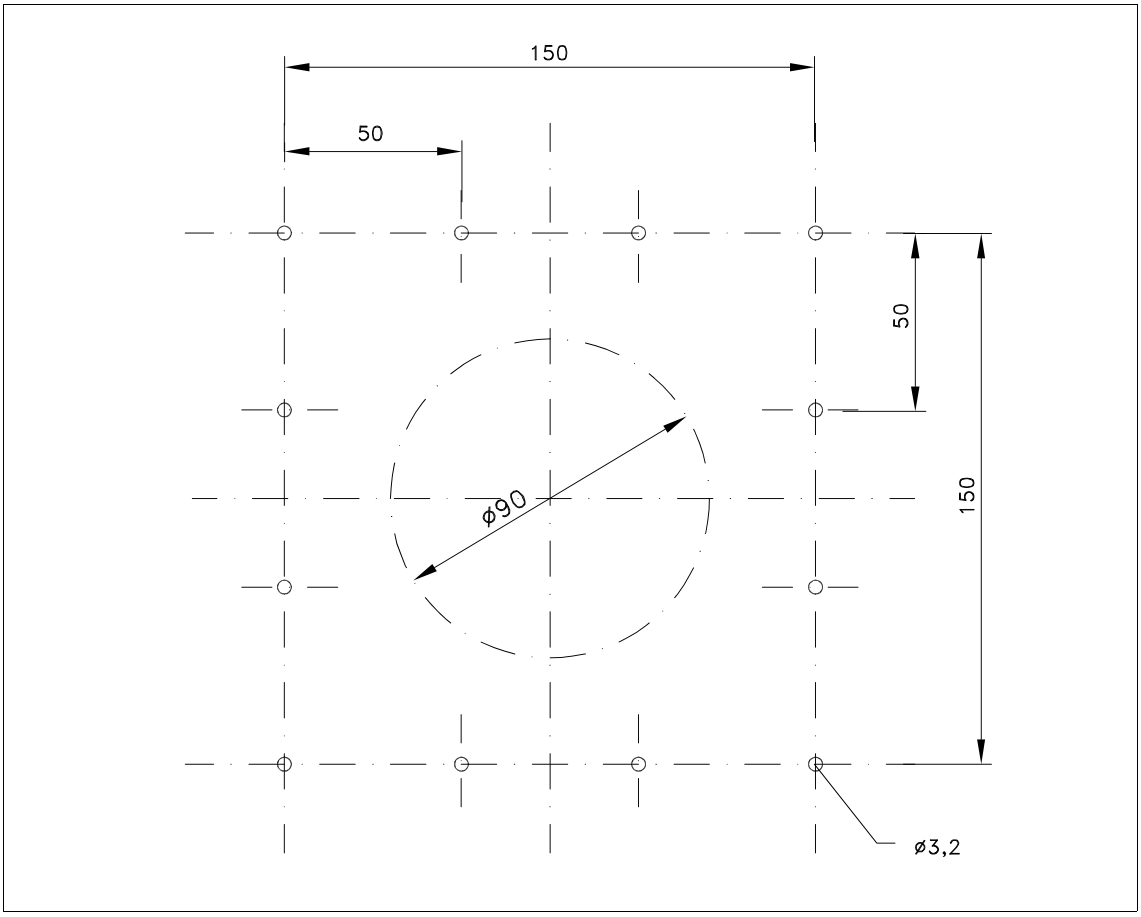
Replacing the sensor element:
Remove the filter guard 206. Open the filter cap on the sensor head. For this you may use expendiently an open-jawed wrench (size of jaw 17 mm) to produce the leverage effect. Unscrew the air inlet and outlet openings. Now, carefully remove the sensor element and exchange with a new element.



5. Technical Data

Measurement principle:	Optical light dispersion
Fields of application:	Filtermonitoring for dry, not sticking, not lumping, not hygroscopic substances
Measurement range:	0 - 100% dust approx. measurement range: 0,1 - 20 mg/m^3 0,1 - 50 mg/m^3 0,1 - 100 mg/m^3 (standard) dependent on the kind of dust at the measuring point
Medium humidity:	dry
Measurement accuracy:	Pure warning function, no metering facilities
Ambient temperature:	-10 to +50°C
Settling time (t_{90}):	< 10 s
Installation:	Flexible flange for installing in the output air duct (flat and round ducts)
Protection class:	IP 54
Output signals:	LON Analog output, 4-20 mA
Voltage supply:	24 V DC
Power consumption:	3 VA
Dimensions: short long	 55 x 330 mm (d x L) 55 x 600 mm (d x L)
Weight:	approx. 0.95 kg

6. Drilling jig



805-6079/a