

Passionate about Particulate



Leak Alert 73

ELECTRODYNAMIC™
INSIDE

Dust

Leak

Monitors

Filter Leak
Monitor with
optional self
checks



- Designed to differentiate between broken bags and bag/filter leakage from faulty/failing filter media
- Selection of advanced features and options for improved functionality
- Supports simple and flexible configuration via keypad/display or remote PC software
- Improved performance over previous models



Certificate No: 9389

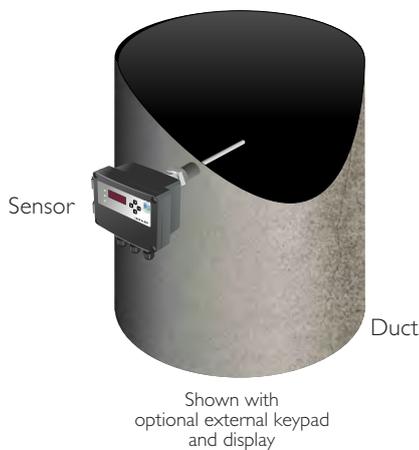
applications

System Description and Product Range

The Leak Alert 73 is particularly well suited for use on fabric filter type dust collectors (baghouses) and provides reliable and robust monitoring of particulate leaks from bags. With its compact cost effective transmitter design, pragmatic and reliable monitoring can now be provided for all types of industrial bagfilters. The instrument benefits, first from PCME's unique *ElectroDynamic*TM Probe Electrification technology, secondly advanced features enabling the Leak Alert 73 to be configured for all types of bagfilters irrespective of cleaning sequence and finally a choice of field upgradeable options to provide quality assurance (QA) features for the user. The Leak Alert 73 is part of the PCME Leak Alert family of products, which have been specifically designed to detect low and medium levels of dust leakage in addition to gross bag failure enabling bagfilter users to maximise filter performance.



Principles of Operation



The Leak Alert 73 combines advanced signal processing techniques with PCME's unique *ElectroDynamic*TM Probe Electrification technology. When the sensing probe is installed after the bagfilter, particles in the airstream interact with the sensing rod to induce a charge signature. The resulting signal is filtered electronically to reject signals outside a defined frequency range (including the dc Triboelectric signal) which makes the instrument less susceptible to changes in particle velocity and to virtually eliminate the effect of any particle contamination on the rod. In bagfilter applications the instrument provides a robust signal proportional to dust emissions which is used to monitor and detect bag leaks. The instrument has the necessary features to discriminate between the variation in dust due the bag cleaning sequence and real leak conditions.

Advanced Features

The Leak Alert 73 provides powerful bagleak capability based on the following standard features:

Bag leak monitoring performance

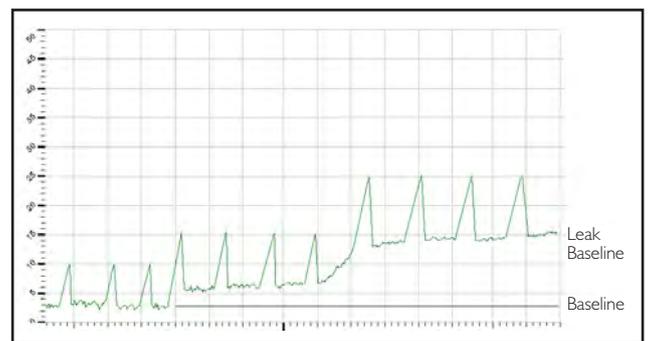
- High quality leak response with sufficient dynamic range and time response to track emissions from single and multi-compartment pulse cleaned bagfilters
- Instrument drift and minimum detection level below 0.1 mg/m^3 with leak monitoring to 500 mg/m^3
- Fully configurable warning alarm and limit alarm levels with independent alarm delay
- Convenient bag leak output range scaled 0-100%. Option for scaling in defined units (user selectable)

Designed for practical bagfilter issues

- Category 3 option is suitable for ATEX dust zone 22 (see Category 1 option for zones 20 and 21)
- Inbuilt surge protection to counter effects of indirect lightning
- Input available for marker pulse from bag cleaning cycle
- Industrially hardened enclosure and sensor mechanics provides convenient connections to plant allowing armoured cable use
- Powered directly from mains power supply | 110/230VAC or (24VDC option)

Powerful user Interface

- 4 digit display and keypad within instrument
- Instrument set-up via internal keypad or PC laptop (optional software required)
- Intuitive multilevel user interface (user set-up, engineering set-up) with password protection
- 3 separate tri colour status LEDs, for power; emission alarms and instrument self-checks



Leak Alert Monitors Bag Leak Conditions



Leak Alert 73 with lid open showing 3 LEDs, display and internal set up keys

specifications

User selectable added value options

The Leak Alert 73 can also be provided with a full choice of optional user selectable added value features. These include:



Automatic insulator contamination detection - option

Electrodynamic sensors are tolerant to dust contamination of the sensor rod (unlike Triboelectric systems) due to the non-contact measurement principle, however, build-up of conductive material across the insulator at the base of the rod can lead to error as with all charge electrification systems. For standard dry dust collector applications, contamination is unlikely, but a possibility. The contamination detection option provides a reliable method for detecting insulator contamination and hence improve Quality Assurance (for applications where water condensation is likely, PCME's patented insulated sensor is a preferred option).

Electronic zero and reference drift detection - option

Electronic dust signals are injected into the front end of the sensor electronics to ensure any electronic and signal measurement malfunction is automatically detected. This Quality Assurance feature checks that the sensor electronics are operating within manufacturer specification, and form part of regulatory demands (see Leak Alert 75). Options are available for manual or automatic initiation of these self checks.

User scaling of display

Of assistance to plant personnel wishing to manually scale the display to an approximate known dust level rather than a relative % level.

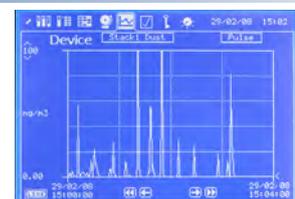
Specifications

Feature	Specification
Ambient air temperature (stack limit is 250°C or 400°C)	-25°C to +55°C 250°C standard, 400°C option
Stack connection (at sensor connection)	1 ½" BSP
Enclosure rating	IP-65 (with hinged lid closed)
Power Requirements	110/230VAC 50/60Hz (32mA) or 24VDC (300mA)
Outputs (Standard)	Isolated 4-20mA (500 ohm) Warning alarm relay (SPST 1A@24VDC) Fail safe Emission alarm relay (SPST 1A@24VDC) Fail safe
Outputs (Optional)	RS-232 output - option RS-485 (Modbus) - option
Inputs	Plant stop signal (output to zero when plant is off), marker for strat of bag cleaning sequence
External LED x3	1 Power/ sensor OK 2 Warning and limit alarm 3 Self check status (options)
User set up	4 digit display and set up buttons (external keypad and display option)
Cable entries	3 x M20 gland/conduit entries
Air purge connection	1/4" BSP*

*option: requires external supply of 5-10 litres/min of dry, clean, oil free instrument air depending on dust loading.

Upgrade path to Leak Locate 880

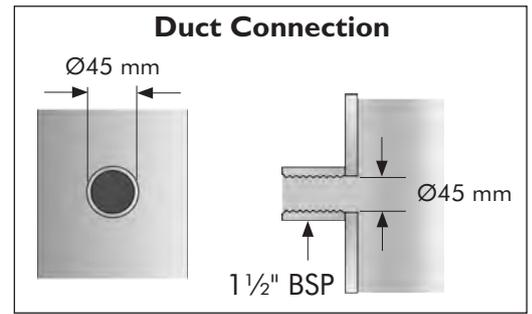
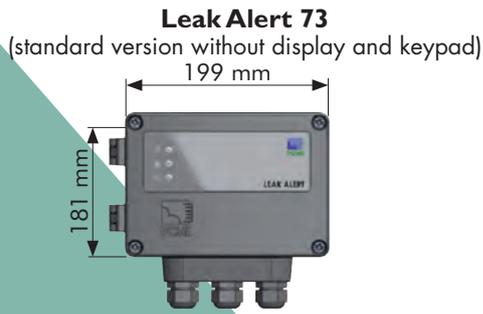
The Leak Alert 73 may be upgraded to the Leak Locate 880 instrument. This enables plant operators to locate the position of failing bag rows in the dust collector, hence reducing bag replacement costs and minimising the time diagnosing dust collector faults.



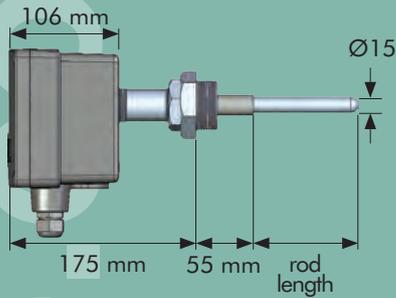
Screen showing bag cleaning cycle

specifications

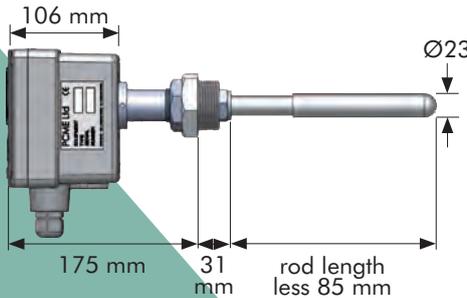
Physical Dimensions & Duct Connection



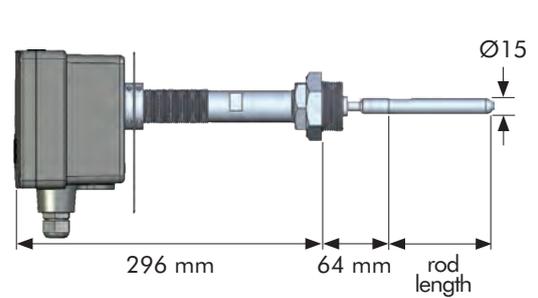
250°C Stainless steel



250°C Insulated



400°C Stainless steel



Order Codes

LeakAlert 73 - 1 2 3 4 5 / A B C D E F G H I J

Example: LeakAlert 73 -

1	250C	2	ROD0500	3	S	4	AP	5	REG	A	SC	B	0	C	%	D	X22	E	AC	F	485	G	0	H	0	I	IK	J	ID
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Mechanical Features (12345)

1	Stack Temperature	Up to 250°C Up to 400°C	Standard Option	250C 400C
2	Rod Length	0100mm to 1000mm	Standard	RODxxxx
3	Rod material	Stainless Insulated (PTFE)	Standard Option	S I
4	Air Purge Fitting	None Air purge fitting	Standard Option	0 AP
5	Air Filter/Regulator	None Filter + regulator assembly	Standard Option	0 REG

Sensor Features (A B C D E F G H I J)

A	Contamination check	None Short Circuit Check*	Standard Option	0 SC
B	Electronic self-checks	None Manually initiated Automatic	Standard Option Option	0 MAN AUTO
C	Scaling Method	0-100% Scaling factor	Standard Option	% SF
D	ATEX category	None Category 3 dust (zone 22) Category 1 dust (zone 20)	Standard Option Option Option	0 X22 X20
E	Power option	115/230V AC 24V DC	Standard Option	AC 24DC
F	RS485 Data output	Not included RS485 included	Standard Option	0 485
G	RS232 Data output	Not included RS232 included	Standard Option	0 232
H	External Connector for RS232	Internal connector External connector	Standard Option	0 FLY
I	Keypad	Internal Keypad External Keypad	Standard Option	IK EK
J	Display	Internal Display Externally Viewable	Standard Option	ID ED

Optional PC Software

Configuration	For instrument configuration by PC
PCView*	For viewing emissions on PC

*requires RS232 output or RS485 option

* not available with insulated rod material

About PCME Ltd

As a progressive environmental Company, PCME specialises in particulate measurement for industrial processes. With a worldwide reputation for reliability, innovation and technological excellence, the Company produces equipment for concentration and mass monitoring for regulatory, environmental and process control requirements. A dedicated team of qualified application and sales engineers is always on hand and should be consulted in the selection and usage of the most suitable equipment for any particulate application.



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