

Solids Flow / No Flow Detection



Use /Function

The FlowJam detects all kinds of bulk solid flows with regard to material movement. The FlowJam distinguishes between the following switching conditions

- material flow
- material no flow
- use FlowJam Plus for blockage/ empty detection option

The system works by using microwave technology to detect material movement using the Doppler's principle.

The FlowJam is a very reliable device because it uses microwaves to penetrate material build-up and sense flow/ no flow conditions. It is also possible to detect through non-metallic walls, casings or conduits.

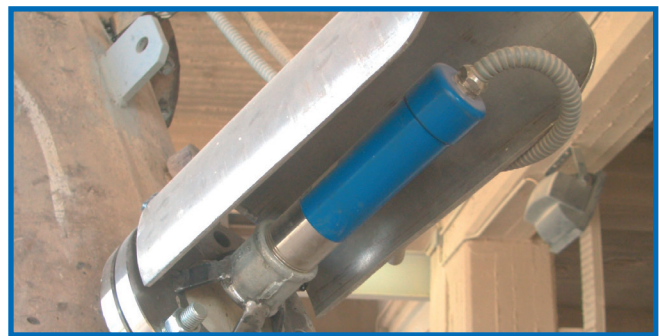
Optional process adapters can be used for high process temperatures or pressures. Ex-version sensors are available with the FlowJam S model.

Applications – practical examples

▪ Monitoring of raw meal cyclones in cement plants

The FlowJam monitors the cyclone through special High Temperature ceramic fittings in order to detect jams.

- Temperature inside the cyclone: 1,112 °F
- Mass flow rate: approx. 50 t/h



▪ Monitoring of screw-conveyors in gypsum plants

The FlowJam is installed in the discharge part of the screw to monitor the continuity of the material flow.

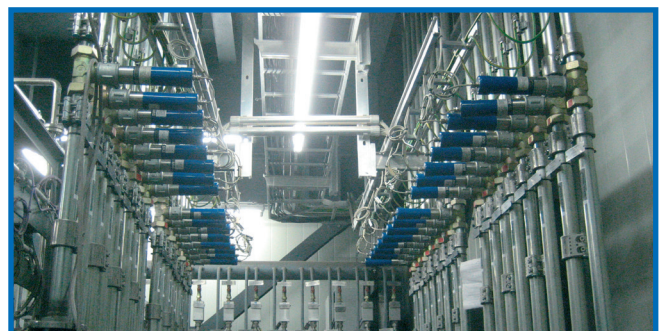
As soon as the material flow gets interrupted, the FlowJam signals it by switching the relays, so that the operator can react appropriately.



▪ Monitoring of coal injection in steel plants

Coal as fuel is injected via several lances in the blast furnace. It's very important for a constant quality of the burning process that the even fuel distribution around the blast furnace is guaranteed.

It is for this reason that every lance is monitored by the FlowJam so that every jam can be detected instantly. The process can then be stopped automatically and the plugged lances freed by injecting a nitrogen purge.



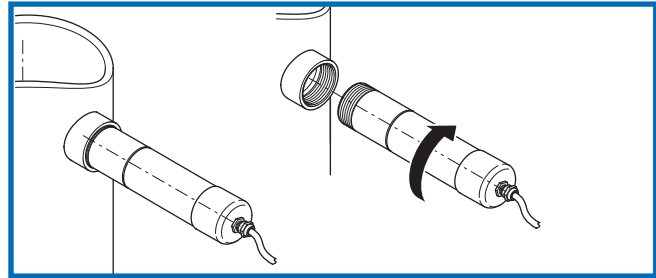
Installation

The installation of the FlowJam is easily made by the following ways

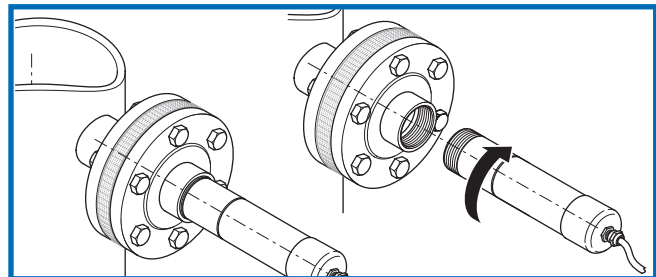
- screwing it into a 1 1/2 inch G (BSP) thread
- by means of a flange
- by means of a pipe clamp

Commissioning

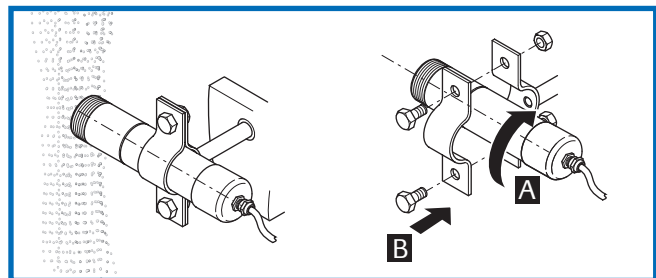
Operating elements for the commissioning are located in the accessible FlowJam casing. It's possible to adjust both the switch sensitivity and the response delay. As a consequence there is no need for an extra evaluation unit.



Thread mounting



Mounting with separating flange



Mounting with pipe clamp

Technical Data

Housing material	Stainless steel 1.4571
Protective system	NEMA 4X (IP 65)
Process temperature	-4... +176 °F -4... +428 °F (with process-adapter) Max. 1832 °F (with ceramic-flange)
Ambient temperature	-4... +140 °F
Working pressure	Max. 1 bar Max. 20 bar (with process-adapter)
Power supply	18...24 V DC / AC
Relay output max.	
▪ Voltage	250 V AC
▪ Current	1 A AC
▪ Capacity	60 W
Response time	1...15 s (continuously adjustable)
Measuring frequency	24.125 GHz; ± 100 MHz
Transmitting power	Max. 5 mW
Weight	2.2 lbs
Dimensions	Housing: length of 8.5 in / diameter of 2.04 in Thread: length of 1.18 in / diameter of G 1 1/2"



* The FlowJam S (remote) is certified to ATEX 21, 22 for use in dust applications.

Pressure Adapter / Temperature Adapter

The FlowJam sensor itself can be used at pressures up to 1 bar and temperatures up to 176 °F.

The Pressure Adapter is made from POM and good to 20 bar. The Temperature Adapter is made from Tecapeek and is good to 428F and 20 bar.

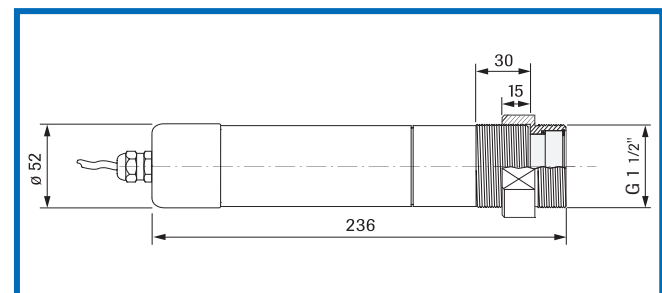
Mounting of Pressure / Temperature Adapter

The mounting of the Pressure or Temperature adapter is identical. Either is screwed into a welded 1 1/2 inch G thread fitting as provided by the customer.

The FlowJam housing (1 1/2 inch G Male thread) is screwed into the 1 1/2 inch G Female thread.

Technical Data

	PRESSURE	TEMPERATURE
Material	Stainless steel 1.4571, POM diaphragm	Stainless steel 1.4571, Tecapeek diaphragm
Temperature	-4... +176 °F	Max. +428 °F
Pressure	Max. 20 bar	Max. 20 bar
Thread	1 1/2 inch G Male and Female threads on both sides	1 1/2 inch G Male and Female threads on both sides
Wrench width	2.16 in	2.16 in



PROCESS ADAPTER

