Reduction of raw material loss

In the secondary battery positive electrode material manufacturing process

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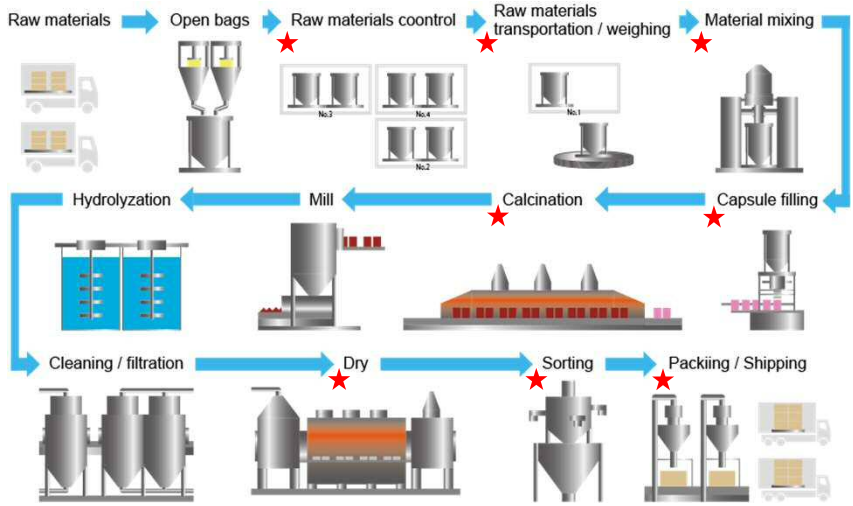
"Predictive maintenance by monitoring the leak trend from the bug filter (dust collector)"



Triboelectric Dust Monitor

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Learn more about Dust Monitor from above code

In Lithium-ion battery positive electrode material manufacturing plants, since **Dust Monitor continuously monitors the leakage amount** in dust collectors of the raw material hoppers in each process, the **predictive maintenance** prevents raw material loss to monitor the performance of the bug filter and the wearing tendency of the filter.

3 benefits of Dust Monitor

① **Reduction of raw material loss by filter breakage:** ***Productivity improvement***

② **Identifying worn filter and optimizing replacement time:** ***Reduction of maintenance cost***

③ **Prevention of emission to atmosphere by leakage:** ***environmental protection***

This solution is one of successful applications made by Triboelectric type Dust Monitor.

- Easy adjustment (only range adjustment)
- Hundreds of supply records worldwide
- Easy installation (1" socket)
- More reasonable price than optical type
- Special knowledge and difficult adjustment are not required

Please contact us through below homage when you request any further information about Dust Monitor.

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Models and Specifications

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●Sensor

Sensor Type		Sensor with Integrated Transducer	Remote Type Sensor		
		Standard	Standard	High-temperature Applications	Explosion-Proof Type (Ex ib IIB T4)
Model Number		PFM-M01E	PFM-M11P	PFM-M11PT	PFM-M01PEX
					
Construction		Sensor with integrated transducer	Sensor and transducer are separately installed.		Sensor,transducer& Zener Barrier are separately installed
Approx. Mass		2.1 kg	1.3 kg	2.1 kg	1.3 kg
Power Supply		80 to 240 VAC 50/60 Hz	From transducer		
Power Consumption		4VA	—		
Dedicated Signal Cable Length		—	5 m (standard). Can be extended to 100 m for special orders.		
Concentration Level Display		10-segment LED (Lights up at every change of 10%)	On remote transducer		
Contact Output		1a for limit 1b for fault Contact capacity: 250 VAC, 2 A 30 VDC, 2 A	From transducer		
Analog Output		4 mA to 20 mA DC (Load resistance: 500Ω max)	From transducer		
Enclosure		Protection rating: IP65			Dust-proof&drip-proof*
Ambient Temperature		−20 to +65℃ (Without condensation)			−20 to +60℃ (Without condensation)
Measurement environment	Particle Size	0.3 μm min.			
	Particle Concentration	0 to 1000 mg/m³ (Reference concentration)			
	Process Temperature	250℃ max.		400℃ max.	60℃ max.
	Gas Flow Velocity	4 m/s min. (Constant velocity)			
	Humidity	40% max.			
	Pressure	200 kPa max.			
Equipment	Measurement Range	9 levels	Use transducer to make settings		
	Data Averaging	Time setting up to 30 seconds	Use transducer to make settings		
	Probe Length	300 to 1000 mm (When length of insulator is 58mm)			
	Mounting	R1 screw with one-inch socket			

*: Housing cover and lead outlet must be closed.

●Transducer for Remote type

Transducer Type		Standard	With Concentration-level Correction	
Model Number	Standard	PFM-KCU11	PFM-KCU12	PFM-KCU14
	Explosion-Proof Type	PFM-KCU01	PFM-KCU02	PFM-KCU04
				
Approx. Mass		0.7 kg		
Power Supply		110 VAC or 220 VAC, −15 to +10%, 50/60 Hz*		
Power Consumption		7 VA		
Ambient Temperature		−20 to +50℃ (Without condensation)		
Enclosure		Protection rating: IP20		
Concentration Level Display		4 digit 7 seg LED		
Unit of measurement		%	mg/m³	
Contact Output		1cX2 for limit 1c for fault (Contact capacity: 250 VAC, 2 A)		
Analog Output		4 mA to 20 mA DC (Load resistance: 500Ω max)		
Correction Range		—	0.1 to 2.0 times (at 0.1 intervals)	
Equipment	Measurement Range	9 levels		
	Data Averaging	Time setting up to 30 seconds		
	Mounting	Wall or DIN rail mounting		

*: Specify the power voltage when you order.

●Zener Barrier

Model Number	Z961/Z964
	
Explosion-proof enclosure	(Ex ia) IIB
Protection class	IP20
Ratings	Uo =17.4V Io =190.3mA Po =430mW Um=250VAC 50/60Hz 250VDC
Ambient Temperature	−20℃~+60℃ without condensation and freeze
Ambient humidity	5%~95%RH
Mass	150g

Note:
For a single detector, 2 zener barriers are the system configuration of explosion-proof intrinsic safety. Connecting the earth of the zener barrier to the DIN rail & connect the earth separately by A-class grounding.