autel	ITALY AUTEL S.R.L	REV02
		2019.05.14
Broken bag detection system		

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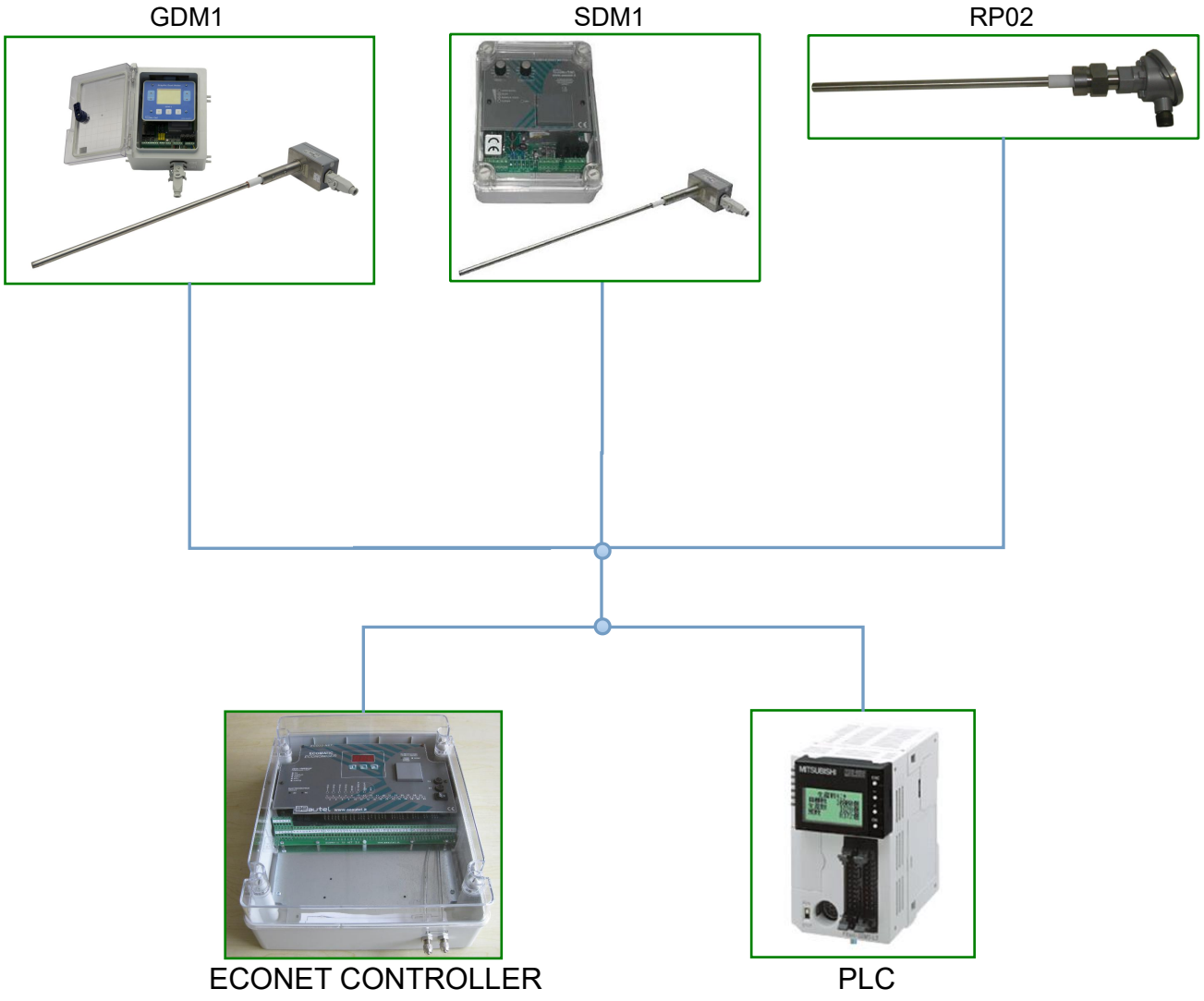

Autel broken bags detection system is base on dust meter (such as GDM1, SDM2, RP02)combined with serial of ECONET controller, ECOSERIAL intelligent controller or PLC(PLC have the funcation must be able to receive signals from Alltel dust instrument).To achieve accurate and efficient diagnosis of dust bag breaking.Save users find the bag breaking time, reduce the maintenance cost at the same time, dust collector, dust concentration on-line provide reliable data for users to understand the operating efficiency of dust collector.

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1. GDM1dust meter

The dust concentration monitor (GDM1) is an on-line instrument for measuring dust concentration. It has a display screen which can continuously display the average value of dust emission concentration AD, the instantaneous value of ID and the dust curve.
The dust detector combined with rp04 probe is used to induce the dust concentration. After the initial installation and manual calibration, it has the function of automatic zeroing and calibration to prevent dust accumulation on the probe and affect the measurement result and cause false alarm. Through the instrument equipped with 3 relays, can keep abreast of the normal operation of the instrument or not, dust concentration is excessive.

GDM1 DATASHEET：

parameter	description	note
Dust concentration display	ID instantaneous value, ADaver value, curve graph	
measuring range	0mg~1000mg	precision±1
GDM1 work temperature	-10℃~+60℃	
Probe ambient temperature	-10℃~+50℃	
Flue-gas temperature	≤250℃	
supply power	24/115/220VAC（±10% 50~60Hz）	
Number and type of relay output	3 个，4A-250VAC or 10A-24VDC	
IP levels of protection	IP56	
analog output	4-20mA，precision0.1mA	standard feature
data transmission	Modbus-RTU-RS485	standard feature
weight	2600g	
GDM1 尺寸 size	254 x 200 x 135 mm	

2. SDM1 dust meter

SDM1 is a tool for online measurement of dust concentration, and is equipped with 4 LED lights instrument dust concentration indicator. Combined with the RP04 probe for the induction of dust concentration in the artificial calibration installation first, with automatic zero calibration function, the probe to prevent dust accumulation on the measurement results caused by 2 false alarms. The instrument is equipped with a relay, can know whether the dust concentration exceed the standard at any time.

SDM1 datasheet：

parameter	description	Note
Dust concentration display	LED lamp	
measuring range	0mg~100%	Depends on the alarm threshold supplied by user
GDM1 work temperature	-10℃~+60℃	
Probe ambient temperature	-10℃~+50℃	
Flue-gas temperature	≤250℃	
supply power	24/115/220VAC（±15% 50~60Hz）	
Number and type of relay output	2pcs，10A-250VAC or10A-30VDC	
IP levels of protection	IP56	
analog output	4-20mA，precision 0.1mA	optional function
weight	1250g	
SDM1 size	195 x 148 x 80 mm	

3. RP02 dust probe

RP02 dust probe is an economical instrument specially designed for on-line monitoring of dust emission. The instrument is equipped with a relay output for dust alarm

RP02：

parameter	description	Note
Dust concentration display	1mg~100mg	
Rp02 measuring range	-15℃~+50℃	
Flue-gas temperature	≤250℃	Depending on the size of mounting flange
Flue-gas humidity	80%	
suppy power	24VDC/24VAC	Independent transformers required
levels of protection	IP65	
relay	115Vac - 1A	
weight	1380g	

4. Comparison of three dust meters

Item	Dust Probe	Dust Monitor	Dust Monitor
Type	RP02	SDM1+RP04	GDM1+RP04
Picture			
Display Way	None	4pcs Led Light,show the dust concentration	LCD Screen,show the graphic of the work flow,average and instant dust value
relay	one relay for dust concentration alarm	two relays, One for 67% low dust value alarm, Another for 100% high dust value alarm	three relays,one for normal work,the other two for dust value alarm
signal output	none	4-20mA(non standard)	4-20mA（standard）, RS485(none standard)
standard power	24VDC/24VAC	24VAC/115VAC/230VAC	24VAC/115VAC/230VAC
dust value red out way	no way	read by 4-20mA analogy value send to the other display device	can display the dust value itself

5. The instruction for bag broken detection

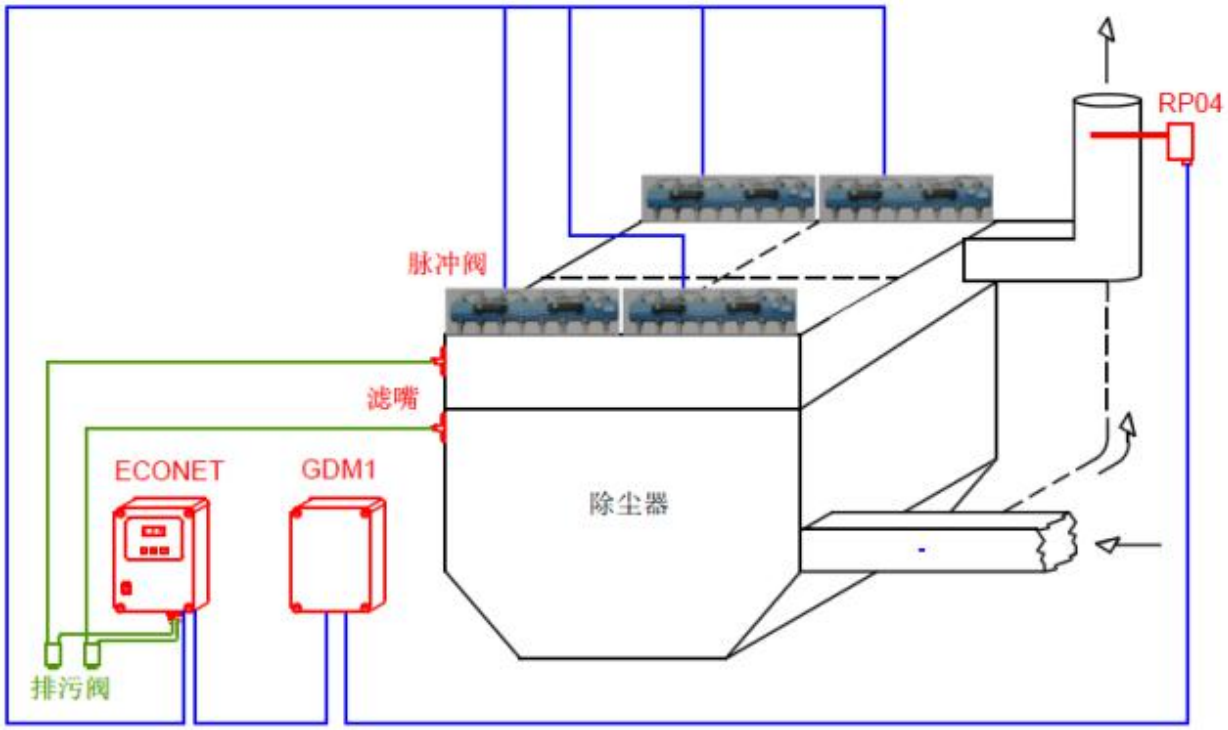
The bag broken detection means when the bag broken,the dust monitor will inspect a high dust value,and then the dust monitor will send out a high dust value signal by the inside relay's action,and this signal will be accepted by pulse controller which has the function of bag broken detection(for example ECONET,ECOSERIAL or PLC which has the same function),and the pulse controller can show the number of the pulse valve,then come true the bag broken detection.And the bag broken detection can be under two kind of situation.

1) On line dust collection

If the dust collector set the on line dust collection model,and set the correct pause time(this time shall longer than the time for the dust going out from the bag and reaching the probe when the pulse valve blowing).Then the dust monitor and pulse controller can find out the number of the pulse valve which has bag broken exactly.

2) Off line dust collection

If the dust collector set the off line dust collection model,and set the correct pause time(this time shall longer than the time for the dust goes out from the cell to the probe),since when it is off line dust collection,the cell whose pulse valve is blowing is closed,so the dust can not reach the probe,so the dust monitor can only find out which cell has the bag broken problem.

To find out the number of the pulse valve which has bag broken,we advice change to on line dust collection model,and using its theory can find out the pulse valve which has bag broken exactly.

6. Install and wire connection diagram