



## Solution for Powder Applications

Chemical Instrument

### On-line Moisture Analyzer for Powder and Grain

on-line moisture measurement for solid bulk, powder, grain, granular materials

Ref: sMSpowd\_AG\_E  
v2.1

#### Specification Comparison:

	MS1204Dp	MS1204Dh	MS1510B	MS4300	MS1204CC	MS1204Flow	MS1204Mn	SMS2100
<b>Sensitivity</b>	B	C	F	F	D	E	A	B
<b>Stability</b>	A	B	D	A	F	E	C	A
<b>Repeatability</b>	E	C	B	B	D	F	A	B
<b>Wearproof</b>	F	B	A	A	E	C	D	A***
<b>Anti-strike</b>	F	B	A	A	E	D	C	A
<b>Anti-adhesion</b>	D	C	A	A	E	B	F	A
<b>Anti-rush</b>	E	D	A	C	C	B	F	A
<b>Anti-dew</b>	C	F	A	B	D	B	E	B
<b>Anti-flow fluctuation</b>	E	B	F	F	D	C	A	A

\* A,....C.... Good,...worse...

\* Stability: Tendency to get relative better repeatability

\* \*\*\*non contact way

#### Sample Shape Adaptation:

	MS1204Dp	MS1204Dh	MS1510B	MS1204CC	MS1204Flow	MS1204Mn	MS4300	SMS2100
<b>0.01% detect</b>	B	C				A		
<b>0.1% up</b>	A	A		B	B	A		
<b>0.1-30%</b>	A	A	A	A	A			A
<b>10-100%</b>	B	C	A	C	C			A
<b>Size &lt;1mm</b>	A	A	A		B	C		A
<b>Size &lt;3mm</b>	A	A	A		A	A		A
<b>Size &lt;5mm</b>	B	B	A		B	B		A
<b>Size &gt;5mm</b>			A		C			A
<b>Plate</b>		B		A				

#### Sample Physical Property Suitability

<b>Hardness</b>	D	B	A		C	A	
<b>Rush</b>			A				
<b>Sharp</b>	B	C	C		C		A
<b>Foliage /wire</b>			B				A
<b>Web</b>			B	A			C
<b>Interrupt flow</b>						A	

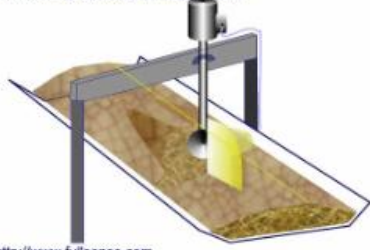
\* A,....C....Good,...worse...

#### Field Device Application:

##### 1) Conveyor:

Process Characteristics	Transducer	Installation
Small particles with ball shape If the flow is thick(>30mm) and wide enough(>300mm) and 5024 mm <sup>2</sup> of disk section sampling sensor to block the flow is allowed No-hazardous situation by rubbing	MS1204Dp	Insert into sample flow, perpendicular to sample flow
Huge, hush, rough samples flow need Non-contact transmission sampling, the microwave penetrate the sample flow to measure moisture	MS1510B	Across the conveyor
Thin flow or fliages on belt Non-contact surface reflect sampling system is better to fit	MSA 4300 NDNIR	Fixed aside perpendicular to conveyor, 150-400cm away from sample

MS1204Dp Conveyor Application



## 2) Reactor/pot/mixer

Process Characteristics	Transducer	Installation
Small particles or powder, only if the surface of the sensor is covered with samples. Full surface covered regional sampling No-harzdous situation by rubbing Any samples	MS1204Dh	Fix at the slide or wall, keep the sensor surface in flat to the slide surface
For sealed pot/container moisture test	MS6450 Neutron Moisture Monitor	Outside of the pot

MS1204 Dh Pot Application




## 3) Slide, chute

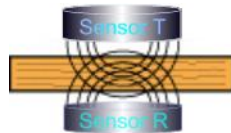
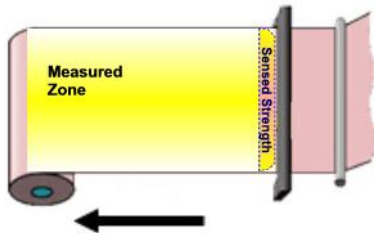
Process Characteristics	Transducer	Installation
Small particles or powder samples, no matter if the flow is continuous or not. Full surface covered regional sampling No-harzdous situation by rubbing	MS1204Dh	Fix at the slide or wall, keep the sensor surface in flat to the slide surface

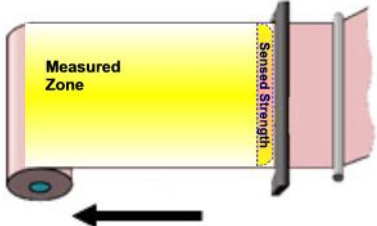

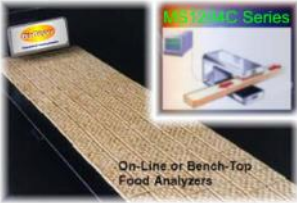
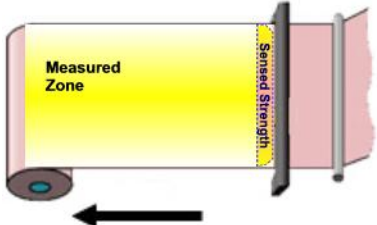


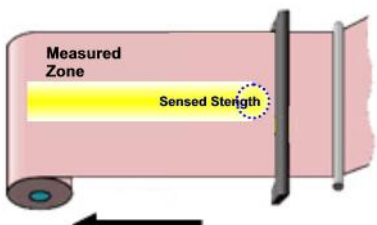
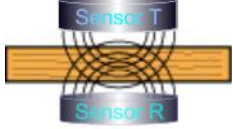
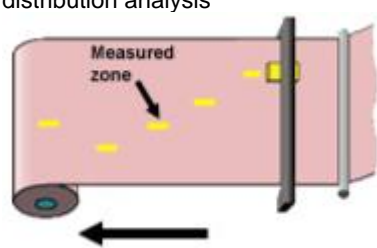
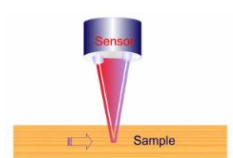

MS1204Dh Slide Application



## 4) Web Moisture Measurement Solution

Characteristics	Transducer	Typical Applications	Installation
Mean moisture of the cross section	MS1204CATR		Clamp alike 2 Pole system Across the web space set Transmitter is a board installed beyond the web, receiver is a roll supporting the moving web materials



<p>Mean moisture of the cross section</p> 	<p>MS1204CC</p> 	 <p>On-Line or Bench-Top Food Analyzers</p>	<p>Clip alike 2 pole, all fixed</p>
<p>Mean moisture of the cross section</p> 	<p>MS1204R</p> 		<p>Rail alike, just like MS1204D in roll constructure</p>
<p>Mean moisture of a certain cyclic section</p> 	<p>MS1510B</p> 		<p>Across the conveyor</p>
<p>Point moisture measurement and distribution analysis</p> 	<p>MSA 4300 NIR</p> 		<p>Servo frame supported to scan the web cross Fixed aside perpendicular to conveyor, 150-400cm away from sample</p>

**Why not list MS6450 neutron moisture technology?**

Neutron detect is too sensitive for composition, it always makes large error. especially it diversifies according atomic number. So it is nearly impossible to gauge moisture for organic based material or low atomic number materials . But okay for silicons or other high atomic number based materials. Such as sands alike. The only advantage of neutron moisture technology is it's simple installation for high pressure container and strong corrosive materials application. For the ray can penetrate the metal wall, and just install it outside of the pipe or container. Otherwise choose microwave instrument instead.

Note: to understand the differences of moisture technology, please visit our website <http://www.fullsense.com/Products/Moisture/moistureListE.htm>



**BigDipper TechnoChem Insitute**  
 Call: (86)-10-8264.0226; Fax: (86)-10-8264.0221;  
 P.o.Box: 603 BDTI Beijing, China 100190  
 Email: [suncns@yahoo.com](mailto:suncns@yahoo.com) Web: <http://www.fullsense.com>



For quick selection of moisture measuring system, refer to <Application Guiding>  
 URL: [http://www.fullsense.com/Products/Moisture/sMoisture/sMS\\_AG\\_E.htm](http://www.fullsense.com/Products/Moisture/sMoisture/sMS_AG_E.htm)  
 Browse the moisture technology products for solids analysis

URL: <http://www.fullsense.com/Products/Moisture/sMoisture/sMpowdIntE.htm>

Further Information about BD4/5xC electronics, please refer to:

URL: <http://www.fullsense.com/Products/Meters/>

For system design and configuration, Refer to:

URL : [http://www.fullsense.com/Products/Moisture/sMoisture/sMS\\_Cfg\\_E.htm](http://www.fullsense.com/Products/Moisture/sMoisture/sMS_Cfg_E.htm)

To lean information of moisture detecting technology, refer to:

URL : [http://www.fullsense.com/Products/Moisture/sMoisture/sMS\\_TB\\_E.htm](http://www.fullsense.com/Products/Moisture/sMoisture/sMS_TB_E.htm)

If you need help from our specialist, please down load the <User application data from>

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