The 4th Generation of Valmet Microwave Consistency Measurement

Innovation leading the way to the future
History of microwave consistency

- 26 years of experience
Innovations and features of Valmet MCA

Digital Platform
New DSD (Direct Sweep Detection) measurement principle makes the 4G Valmet MCA the highest performance consistency sensor

Taking paper making performance to the next level
total consistency measurement independent of grade changes and fiber properties
Innovations and features of Valmet MCA

How
the measurement works

Valmet MCA measures a velocity of microwave propagation in the process medium.
Innovations and features of Valmet MCA

The 4G Valmet MCA offers two different sensor types to measure total consistency

**Flow through**
Sizes available from 50mm (2”) until 300mm (12”)

**Twin blade**
Available in SS and SMO
Pipe sizes > 200mm (8”)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Easy calibration</td>
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<tr>
<td>Measurement range</td>
<td>0…16 Cs%</td>
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<tr>
<td>Total consistency measurement utilizing microwave principle</td>
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<tr>
<td>Highest sensitivity</td>
<td></td>
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<td>Highest repeatability</td>
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<td>Higher conductivity capabilities</td>
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<tr>
<td>Process temperature and pressure measurement allows compensation</td>
<td>capabilities</td>
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A Bridge to your process
The new operating terminal
Innovations and features of Valmet MCA

Twin blade sensor

The new and unique sensor type for all applications with a pipe larger than 200 mm

• Unscreened pulp
• High conductivity applications in a pulp mill
• Low-cost and easy to install
• Sensor material
  – Wetted parts materials: AISI316L or SMO, Ceramic
Innovations and features of Valmet MCA

Flow through model

The new generation of flow through sensor

- The sensor’s mechanical dimensions are the same as previous generation, making them easily replaceable
- Sensor material
  - Wetted parts: AISI 316, Ceramic
Innovations and features of Valmet MCA

Valmet Bridge

The new modular and innovative user interface, with new calibration features, intelligent diagnostics, offering an improved user experience

• 7 inch touch screen
• Instant trending capabilities
• Easy diagnostics download
• Multi-point calibration possibility
• Remote access
• Industrial Internet ready
Installations recommendations

Twin Blade (TB) sensor

- Installation only
  - Vertical / horizontal / flow uphill pipe sections
- Installation close to dilution → short delay time for control
- Measurement should always located so that the main pulp stream will be measured.
- Installation just after the pump → only on throwing side of pipe
Installations recommendations

Flow Through (FT) sensors

- Installation only
- Vertical / horizontal / flow uphill pipe sections
- Installation close to dilution → short delay time for control
- Measurement should always located so that the main pulp stream will be measured → main pulp stream between the antennas
Applications
Target applications
Paper machines, board machines and pulp mills

Applications where grade independent total consistency measurement offers the best process control performance

- Need for the highest accuracy
- High and varying filler content
- Grade changes (mix of different fiber types)
- Most accurate measurement for chemical dosing needed (kg/ton)
- Consistency measurement for special applications: starch, nanocellulose etc..

Typical applications

- Pulp feeds to mixing chest
- Refining feed consistency control
- Coated broke
- Broke dosing
- Recovered pulp
- Mixing chest
  - Recipe/grade management
  - Production rate calculation
- Machine chest
  - Basis weight feed forward control
The most critical applications in a paper mill

Kraft Pulp

Mechanical Pulp

DIP

Broke

Recovered stock

Valmet MCA
The most critical applications in a board mill