



kajaaniMCA™
Total Consistency Measurement
Independent of Grade and Wood Species



The kajaaniMCA-FT flow through transmitter is available for pipe sizes up to 300 mm.

The new, rugged, light weight construction is designed to survive harsh process conditions.

Experience is the key

The new kajaaniMCA is a third generation microwave consistency transmitter. All new electronics and redesigned mechanical construction provide even better reliability, easier installation and the tremendous accuracy of the patented microwave measurement principle. The kajaaniMCA measures total consistency independent of pulp grade, recipe or production speed – for optimized paper production and quality.

In certain applications, consistency transmitters can be difficult to calibrate, suffer from contamination and shives that cause plugging and coating, or be affected by flow changes, be insensitive to fillers and are difficult or expensive to install and maintain.

This is where the kajaaniMCA microwave consistency transmitter is the best solution. The all new design is both lighter and stronger. New technology encompasses Hart, Profibus PA and Foundation Fieldbus

communications. The device has comprehensive self diagnostics and supports online condition monitoring with FieldCare and AMS systems.

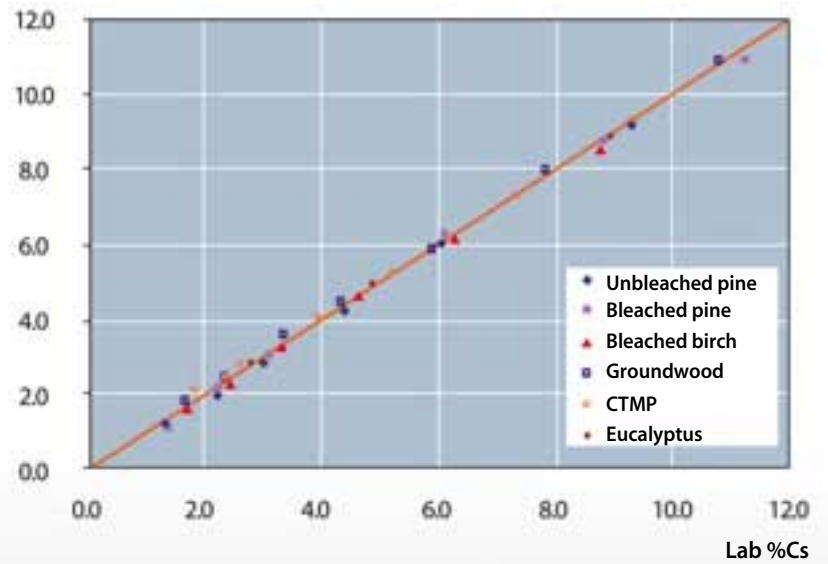


This transmitter measures total consistency of the pulp process stream independent of fiber length, freeness, wood species or blend. The measurement is not affected by flow rate, brightness or color, providing better control of the furnish, fewer process upsets and less off grade product. The kajaaniMCA is part of the Metso Automation family of consistency measuring solutions including mechanical and optical methods developed in close cooperation with users for optimal results in a wide range of applications.



Operating Unit for local control, power and cable connections.

MCA %Cs

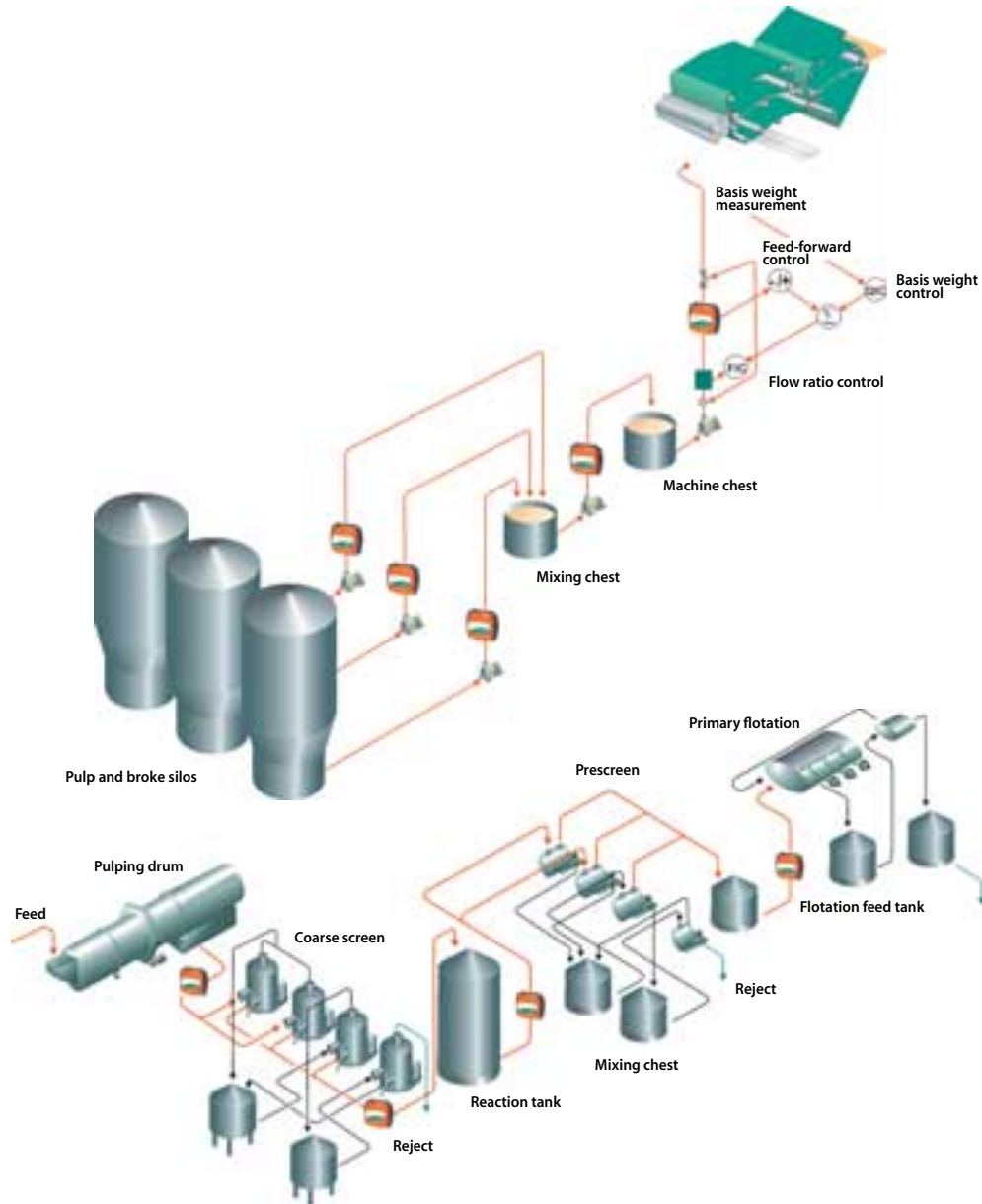


Better Results

kajaaniMCA uses a patented measurement principle based on the linear correlation between consistency and microwave time of flight. Low power microwaves are passed through the pulp slurry from antennas on opposite sides of the pipe (FT model). The mechanical design features one piece cast body, full bore flow through sensor and ceramic windows. Solids, such as fibers and fillers, conduct the microwaves faster than water so that shorter transmission times are seen with higher consistencies. The relationship is linear, making it easy to calibrate the device irrespective of what is being measured. Broke, recycled fiber or other difficult pulps do not present any problems.

No Regular Maintenance Required

Regular maintenance is not needed, so commissioning and running costs are reduced to a minimum. One point calibration is all that is needed to get the maximum benefit of the excellent accuracy and repeatability. kajaaniMCA is the ultimate device for the measurement and control of total consistency in pulp and paper processes.



◀ The measurement is not affected by fiber length (birch at 1.3 mm and pine at 3.5 mm), freeness (unbleached pine at 650 CSF and ground wood at 50 CSF), Kappa (mechanical vs. fully bleached pine), brightness and color (unbleached vs. bleached pine) and pulping process (chemical pulp vs. mechanical pulp).

The new fork model, kajaaniMCA-F can be installed in the same process coupling as Metso's shear force transmitters including valmetSP and earlier Smart-Pulp and Pulp-El types. ▶



Stock Preparation Optimization

◀ Total consistency measurement before and after the machine chest ensures accurate machine direction basis weight control. Feed-forward control eliminates disturbances before they reach the headbox; it is rapid and accurate. Accurate measurement of the total consistency of pulp components entering the mixing chest is a prerequisite for good blending – particularly with broke and deinked pulp lines where variations in ash content occur.

Efficient DIP Line Operation

◀ In deinking the most important goals are the removal of impurities and minimizing quality variations, fiber losses, and chemical consumption. The process conditions must be optimized to reduce chemical demand and to achieve maximum efficiency of all process stages. This requires accurate control of the pulp flows despite vast quality variations in the raw material. In these extremely demanding conditions, the best result is always achieved with the kajaaniMCA.

Stock recovery systems

The stock recovered from disc filter contains a large amount of fines and fillers therefore its total consistency must be controlled accurately. kajaaniMCA measures the total consistency, unlike mechanical transmitters that only react to fibers. Failure to control total consistency will cause basis weight and ash content variations in machine direction. In addition, kajaaniMCA is independent of pulp quality or fiber length variations – a clear benefit in this application.

Specifications and Process conditions

| | |
|---------------------|--|
| Measuring range | 0 – 16 %Cs (if > 16 %Cs or outside Pulp and Paper applications, consult with Metso Automation) |
| Repeatability | ±0.01%Cs |
| Sensitivity | 0.001 %Cs |
| Damping | 1 to 99 s |
| Ambient temperature | -20...+70°C (-4...+158 °F), protect from direct heat radiation |

kajaaniMCA Sensors:

| | |
|---|---|
| Enclosure class | IP 65 (NEMA 4) |
| Wetted materials | |
| MCA FT sensors gasket | AISI 316, AISI 316L, Ceramic Viton, Simrit 483 |
| MCA F sensor (options for MCA F sensor) gasket | AISI 316L, Ceramic AISI 316L replaced with Titanium GR2 or Hastelloy C276 Viton, Simrit 483 |
| Process coupling materials (options for MCA F sensor) | AISI 316L Titanium GR2 or Hastelloy C276 |
| Mounting clamps and screws | AISI 316 |

Operating unit, TCU:

| | |
|-----------------------------|--|
| Enclosure class | IP 65 (NEMA 4) |
| Operating voltage | 90...260 VAC / 0,1 A |
| Outputs: Current output | Consistency 4 – 20 mA + HART® 18 to 35 VDC |
| Inputs: binary inputs | 2 inputs, isolated 12 - 48 VDC |
| Communication | |
| PC-connection | RS-232 |
| Profibus PA | available 2004 |
| Foundations™ Fieldbus | available 2004 |
| Support for Field Care, AMS | available 2004 |

Process conditions:

| | |
|---------------------|--|
| pH-range | 2.5 – 11.5 |
| Process temperature | 0...+100°C (+32...+212 °F) |
| Process pressure | |
| Minimum | recommend >1.5 bar (22 psi), No entrained air. If less than 1.5 bar (22 psi) consult Metso Automation. |
| Maximum | 16 bar (232 psi) FT-models / 25 bar (363 psi) F-model |
| Vibration | Max. 20 m/s ² , 10 – 200 Hz |

Conductivity maximum limits in different process temperatures and sensors weights:

| | 30 °C / 86 °F (mS/cm) | 50 °C / 122 °F (mS/cm) | 70 °C / 158 °F (mS/cm) | weight (kg/lbs) |
|-----------------|--------------------------|---------------------------|---------------------------|--------------------|
| MCA F | 18 | 15 | 13 | 5.2 / 11.5 |
| MCA-FT 100 /4" | 18 | 15 | 13 | 10.0 / 22.0 |
| MCA-FT 150 /6" | 13 | 12 | 10 | 13.5 / 30.0 |
| MCA-FT 200 /8" | 12 | 11 | 9 | 17.0 / 37.5 |
| MCA-FT 250 /10" | 12 | 11 | 9 | 24.5 / 54.0 |
| MCA-FT 300 /12" | 10 | 9 | 7 | 29.0 / 64.0 |

kajaaniMCA is provided with HART® communication and it can be connected to a FieldCare condition monitoring system. The transmitter is also AMS-compatible (AMS=Asset Management Solutions). HART® is a registered trademark of Hart Communication Foundation. Foundation™ Fieldbus is a trademark of Fieldbus Foundation.

Metso Automation
Field Systems

Lentokentänkatu 11, P.O. Box 237
FIN-33101 Tampere
Finland
Tel. +358 20 483 170
Fax +358 20 483 171

For further information please contact
one of our regional offices,
or visit our web site www.metsoautomation.com

Europe
Levytie 6, P.O. Box 310
00811 Helsinki
Finland
Tel. +358 20 483 150
Fax +358 20 483 151

North America
3100 Medlock Bridge Road,
Suite 250
Norcross, GA 30071
USA
Tel. +1 770 446 7818
Fax +1 770 242 8386

Latin America
Av. Central, 181-Chácaras Reunidas
12238-430 São José dos Campos
SP Brazil
Tel. +55 123 935 3500
Fax +55 123 935 3535

Asia Pacific
501 Orchard Road,
#05-09 Wheelock Place
238880 Singapore
Tel. +65 673 552 00
Fax +65 673 545 66

Middle East
Roundabout 8, Unit AB-07
P.O. Box 17175
Jebel Ali Freezone, Dubai
United Arab Emirates
Tel. +971 4 883 6974
Fax +971 4 883 6836

www.metsoautomation.com



Basic delivery includes:

kajaaniMCA F

- Sensor
- Installation Kit
(process coupling, mounting clamps,
blind flange & gasket)
- Operating Unit
- 10m connecting cable

kajaaniMCA FT

- Sensor
- Operating Unit
- 10 m connecting cable