



ABB OY, KPM

KPM KC3

Blade Consistency Transmitter

2018





KPM KC3

Static Blade Consistency Transmitter

KC/3 Static Blade Consistency Transmitter

Measures 2–16 % Consistencies

Standard blade: 2–8 % Cs

Medium consistency: 6–16 % Cs

Low consistency 2 (1,5)–3 % Cs

Unscreened recycled 2–8 % Cs

Installation to Sandvik NS70 Saddle

Fits to standard process coupling of Valmet Pulp-EL
and Smart-Pulp, BTG MBT and SBT

Minimum process pipe
diameter 100 mm (4")



Measurement principle

One piece sensor body and diaphragm

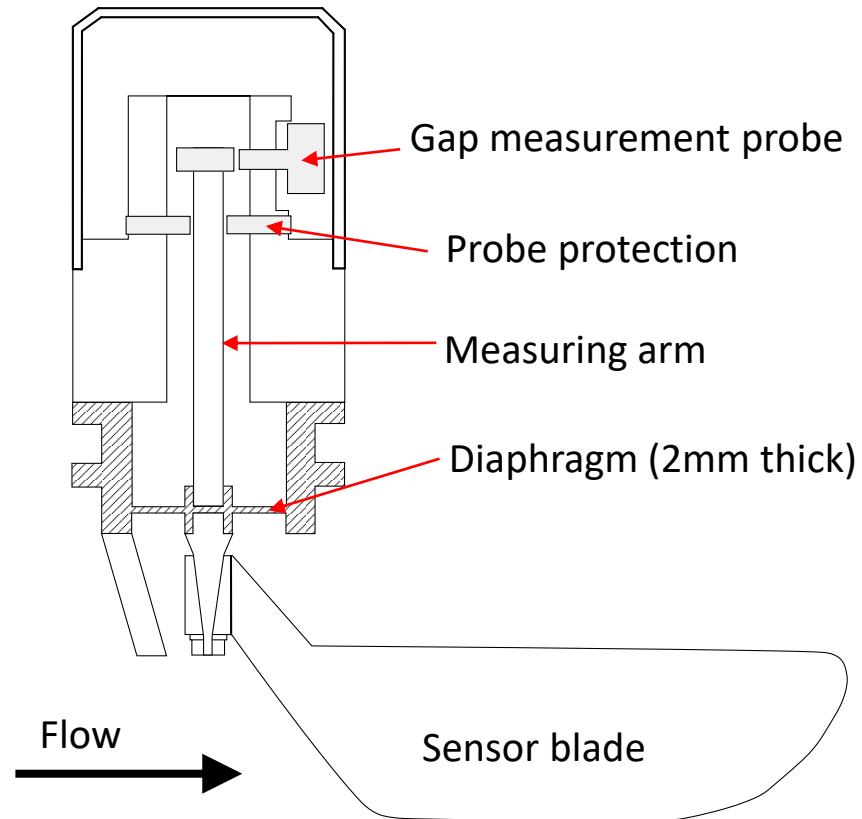
Diaphragm works as a spring

No maintenance (no o-ring seals, no "mechanical fuse")

Patented, no-seal transfer mechanism, with 5 year warranty against leaks

Wetted parts titanium or Super Duplex Stainless

Excellent sensitivity: response is better than 0.01% Cs



KC/3 Construction

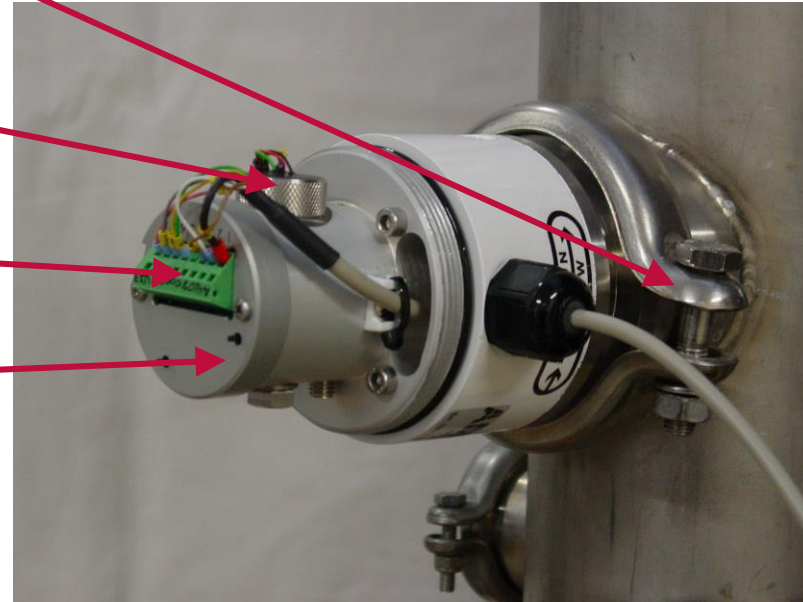
Mounting clamps and saddle

Gap measurement probe

Wiring connections

Electronics cover

Blade alignment bolts
Simple alignment

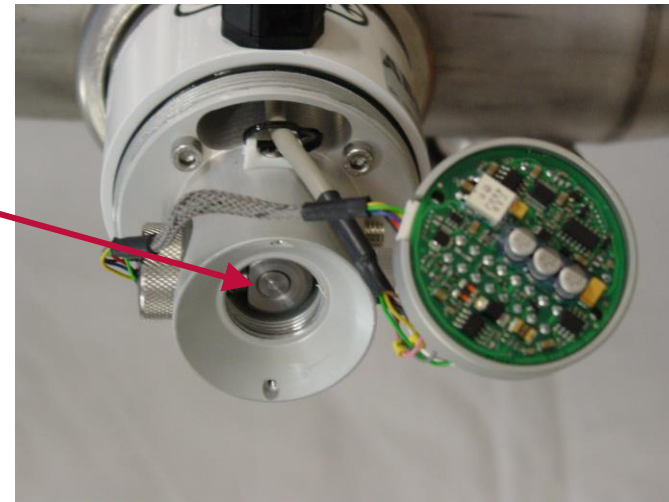
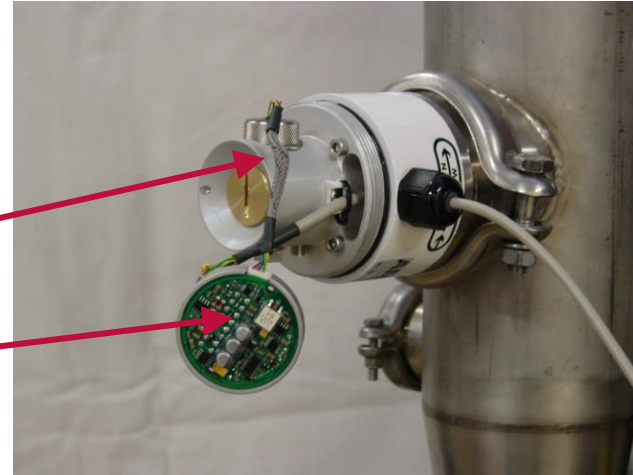


KC/3 Construction

Gap measurement probe

Electronics

Measuring arm



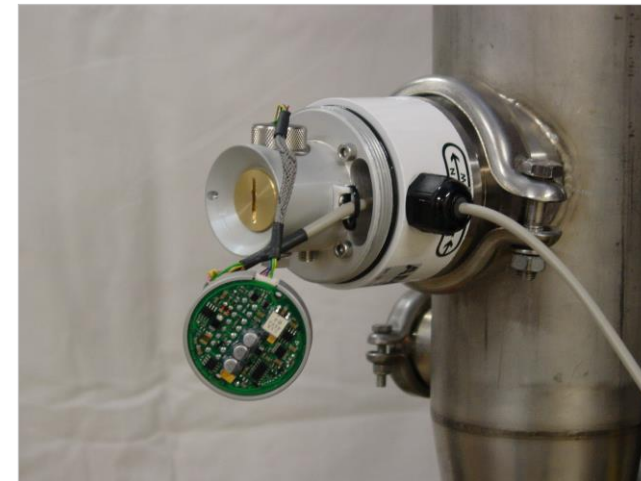
KC/3 Features

Flat bottom surface

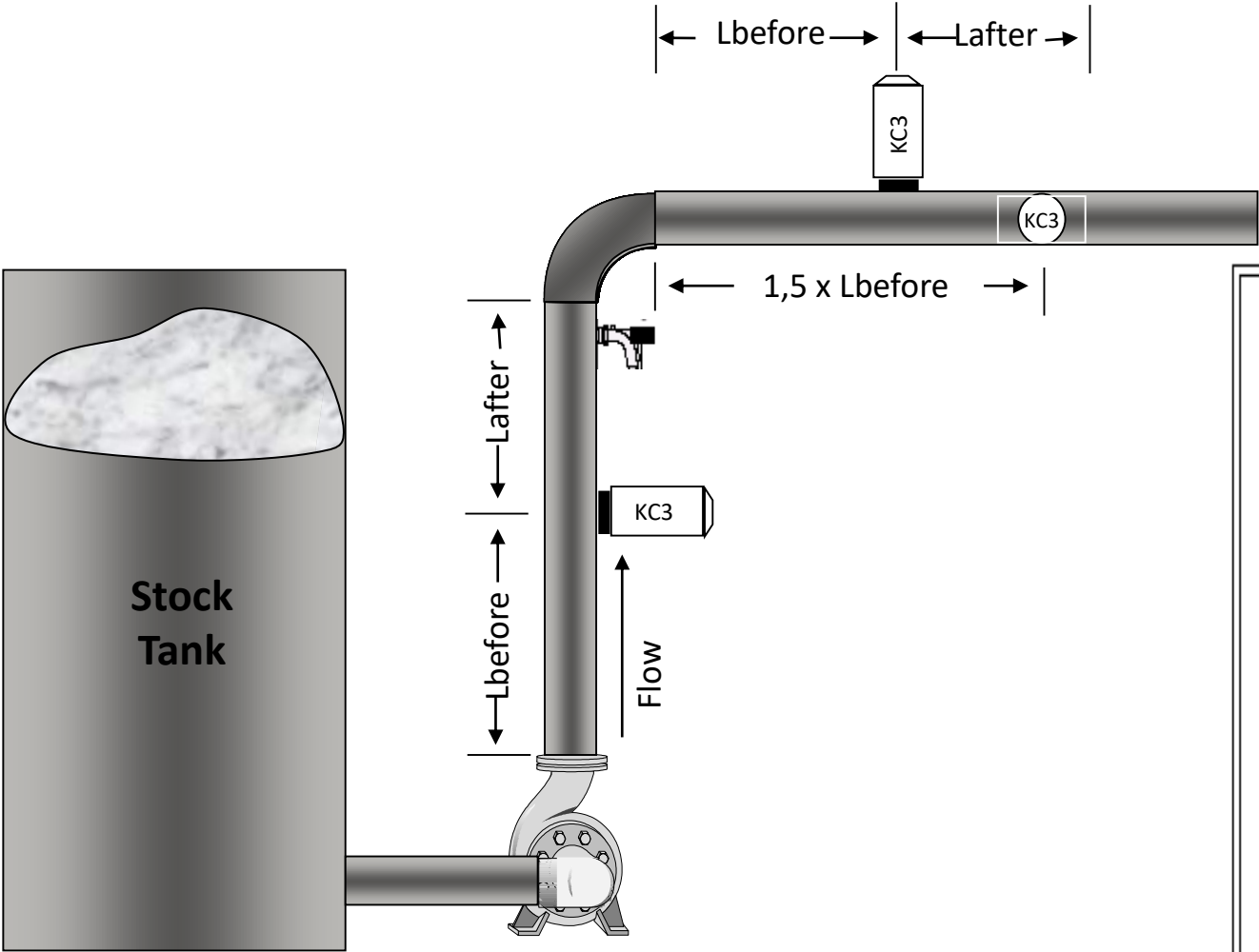
- Fibers do not collect on the bottom of the sensor
- Measuring arm moves freely

Field repairable

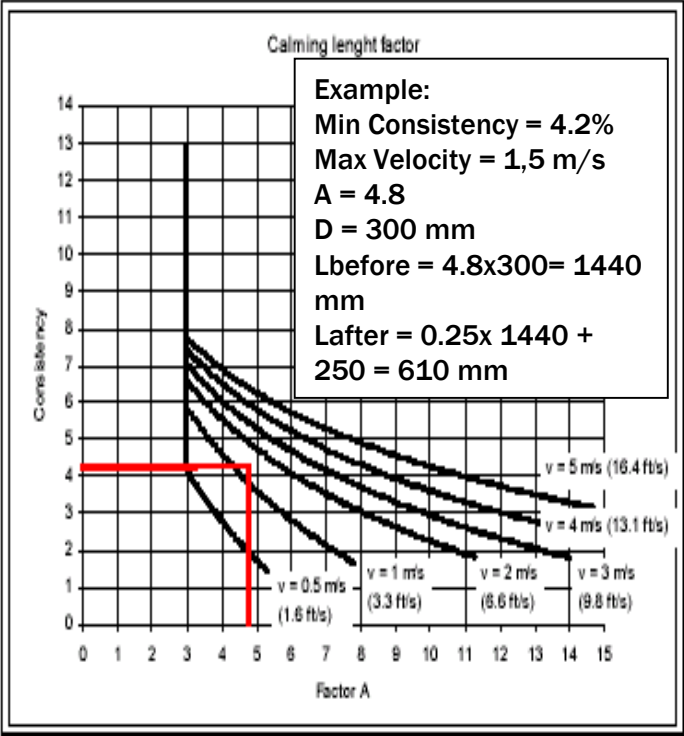
- All parts easy to replace in the mill with standard shop tools
- Gap measurement probe and electronics can be changed and tuned without taking transmitter off from process



Installation Location



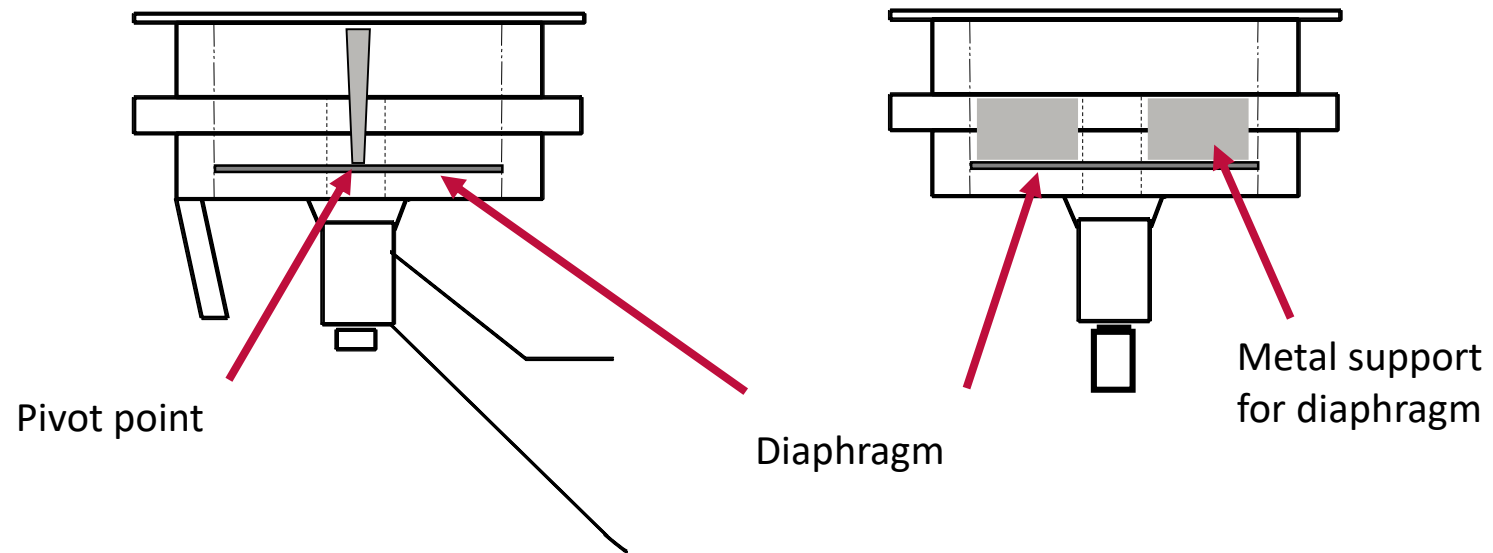
$L_{before} = A \times D$
 $L_{after} = 0.25 \times L_{before} + 0,25$
 m
 A = Calming length factor
 D = Pipe diameter



Independent of pressure variation

Specially designed diaphragm support prevents distortion of diaphragm under excessive process pressure

Eliminates pressure dependence



Features

Large, visible display makes setup and calibration easy

8 selectable precalibration grades with linear response to consistency

Quick-cal procedure

Automatic calibration parameter tuning and position adjustment when laboratory consistency value is entered

Separate sample button and sample-time countdown with time stamped sample info

Automatically calculates slope and offset values using from 3 to 10 samples



Advanced diagnostics

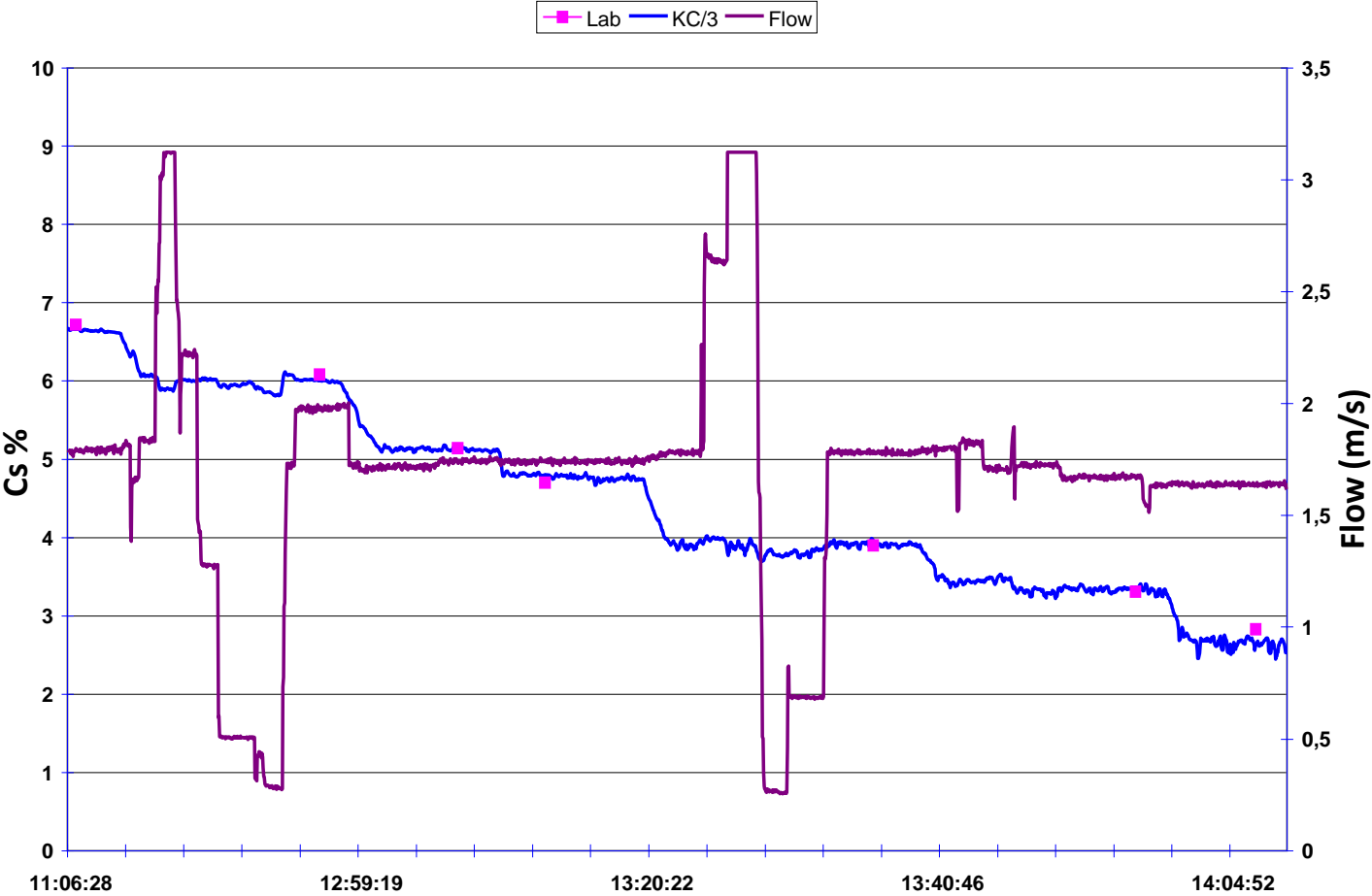
Data logger for review of transmitter operation and troubleshooting

Raw signal data show actual blade shear force information from the process

Blade “shock counter” identifies adverse process conditions that may affect measurement accuracy



KC/3 vs. Flow Greenwood, Cs 3–7%



Specifications

Output signals	2 -wire, 4–20 mA + HART, FDT/DTM Foundation Fieldbus, Profibus PA available 4 binary inputs, 3 BI for grade selection, 1 BI for starting sampling system	
Supply voltage	No external power supply	
Measuring range	2–8 % with standard blade 2–8 % with unscreened recycled blade 3 % with low consistency blade 6–16% with medium consistency blade	2–
Sensitivity	better than 0.01 % Cs	
Hysteresis	None	
Damping	Electronic 0–99 seconds	
Process pressure	Max 25 bar	
Process temperature	0–120 °C (32–248 °F)	
Ambient temperature	0–65 °C (32–149 °F)	

Specifications cont.

Flow velocity	0,5–5 m/s (1.6–16 ft/s) standard blade 0,5–5 m/s (1.6–16 ft/s) unscreened recycled 0,5–5 m/s (1.6–16 ft/s) low consistency blade 0,5–8 m/s (1.6–26 ft/s) MC blade
Weight	Transmitter 2,3 kg, (5.1 lbs) Remote unit 2,2 kg, (4.9 lbs)
Enclosure class	Sensor IP 66 (NEMA 4X), Display unit IP 65 (NEMA 13)
Process connection	Clamp connection to mounting saddle Saddle welded onto process pipe. All hardware included with transmitter
Process pipe size	100 mm (4") diameter or larger
Materials	All wetted parts titanium or Super Duplex Stainless steel, titanium and Duplex mounting saddle available
Low voltage and EMC	IEC 6100-4-3 and CISPR 11

Summary

Reliable, damage resistant transmitter

Measures a wide consistency range 2–16 %

Low installation and lifetime costs

Remote display unit

Simple calibration





A A B B