

## Link into Results

Valmet Rotating Consistency Transmitter







# Setting a New Top Level in Rotary Consistency Transmitters

Valmet's new Direct Torque™ measurement now gives you the industry's most reliable consistency response. It is based on Valmet's patented success with its sealing solution. The new Valmet Rotating Consistency Transmitter's unrivalled modularity gives you a perfect package for plug-n-play results.

Direct Torque™ is the measurement principle you've been missing to link into results. It brings you reliability along with all the benefits of modern technology.

Valmet has listened – and we're ready to respond with our new Direct Torque™ measurement.

## **Direct Torque™: quickest, most direct and reliable way to results**

The new, patented sealing construction is the secret behind the new measurement principle. This is what

we call our new Direct Torque™ measurement.

Thanks to the revolutionary technology behind it, you get better performance with the fastest and most accurate measurement results. The linear consistency response enables you to get the most direct and precise response.

## **Introducing: Valmet Rotating Consistency Transmitter with a revolutionary measurement principle**

The rotating sensor solution has been a preferred choice for numerous applications in pulp and paper mills over the past 60 years. Therefore, the rotating measurement principle in general has been a long-time mill standard. Although new sensors have been introduced along the way, the actual measurement principle has for the most part remained unchanged.

As the industry has evolved and market demands are constantly developing, a pressing need has emerged for something straightforward and with the lowest possible need for maintenance. It's time for a solution based on a completely better way to measure consistency.

## **Results on many levels**

Valmet Rotating Consistency Transmitter gives you the opportunity to link into results on several levels.

**On-site maintenance:** The new compact design has fewer parts so there is less to maintain. It can be easily maintained onsite by users. Fewer parts allow for quicker maintenance work.

**Fast installation:** As Valmet Rotating Consistency Transmitter is smaller and lighter, it is easy and safe to handle and install. Fewer mounting parts are needed. Only a single-phase voltage supply is required, which lowers investment costs.

**Process productivity:** With the newest technology, the transmitter is easy to operate without any need to learn a new interface. It enables the shortest possible stabilizing times after start-up with a fast measurement response after process stop. Overreaction and slow signal drift are history. Calibration tuning and recipe change can easily be done during production.

**Financial gain:** Valmet Rotating Consistency Transmitter is a modular, cost-effective investment. You can make use of your existing installations and buy only what you need. You can build your own sensor to better match your needs with the many different modular options available. All critical parts are designed for high reliability and long life.



# A Tradition of Metal-to-Metal Precision™

Metal-to-Metal Precision™ is our patented sealing proven in the industry's most-sold blade transmitter and another proof of Valmet's commitment to life cycle thinking.

## Based on Valmet's patented success

Valmet consistency products hold a long history as world-class measurement solutions. With decades of experience and many generations of sensors, Valmet products lead the industry with a portfolio of sensors that covers all pulp and paper applications.

Valmet is also known for setting ever-higher standards in the industry with revolutionary technology leaps. Valmet blade transmitter, the most sold in the industry, is just one example of using successful innovation to increase the lifetime of sensors.

## Unquestionably best way to ensure reliable consistency measurement

The latest significant patented improvement has been a new sealing construction that replaces conventional rubber sealings with a metal-to-metal construction. Now users are pleased to get more robust – and still extremely sensitive sensors – with much longer lifetimes.

The new Valmet Rotating Consistency Transmitter also features patented Metal-to-Metal Precision™. This is because the ageing factor of rubber is critical for any industrial product. Now, this critical component in rotary technology has been removed – and replaced by an improved construction that results in a stronger, more stable sensor measurement. Metal-to-Metal Precision™ technology by Valmet gives unquestionable advantages to users. Not only do you gain from longer lifetime and a service-free construction, you also save more in time and can trust fully in its reliability.

## Sealing technology plus new measurement

By combining our Metal-to-Metal Precision sealing technology with the latest Direct Torque measurement principle, you get unbeatable results: fast, reliable and sensitive.

## Fast

Valmet's new solution ensures an extremely fast response to consistency variations in the process. Whereas force balance technology took long time to stabilize to the correct measurement output level, the new technology takes only a fraction of that time. You can be back on-spec faster than ever.

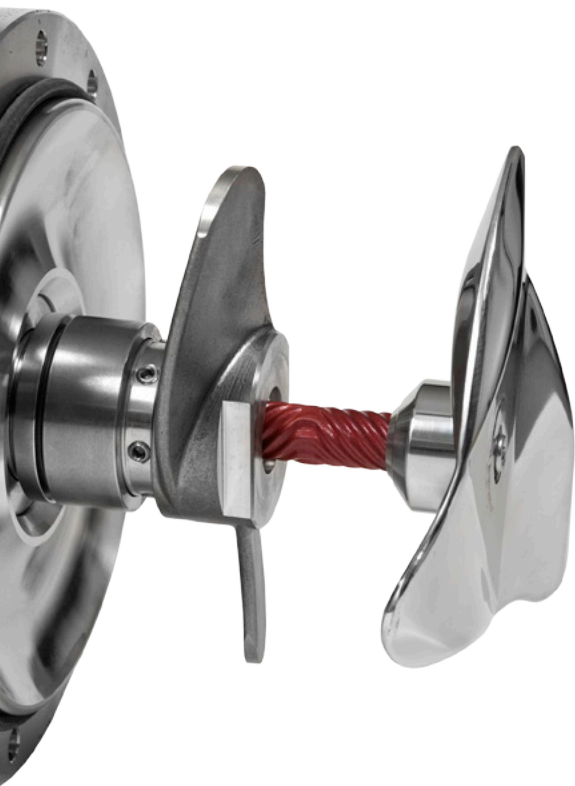
This feature is very important for controlling pulp and paper processes. Any delay in the response from the sensor means a loss in production and profitability.

## No hysteresis or signal level shift

Hysteresis during normal operation and any signal level shift at start/stop produced by rubber construction and force balance technology are history. Results are reliable and repeatable.

## Strong and sensitive

Pulp and paper processes are ever more fine-tuned to produce at maximum production capacity. Many times, the optimum operating window of sub-processes is very narrow. Operating within the window of sub-processes is vital for ensuring reliable and efficient production. The new Valmet Rotating Consistency Transmitter technology helps you respond to this need immediately.

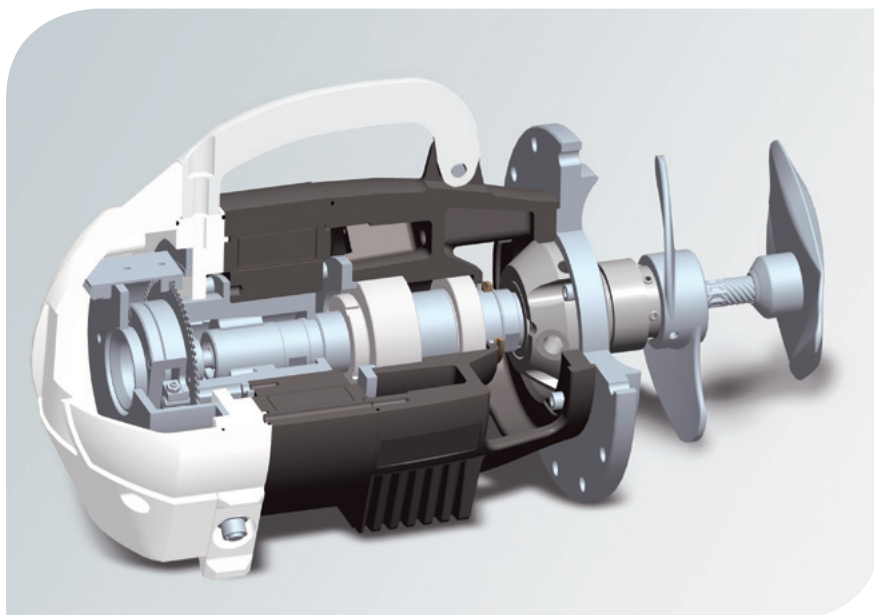


## Proven: Million-cycle results

The strength of the transmitter construction has been tested in real process environments as well as in many specially prepared endurance tests carried out by independent research institutes.

All tests prove the superiority of the new construction. Even up to 10 million maximum shocks did not change the measurement performance. The sealing ability remained excellent and no signs of wear could be detected.

Several longer field tests in chemical pulping processes have proven the new Valmet Rotating Consistency Transmitter's performance excellence in challenging environments with high temperatures, pressure and abrasive chemicals.

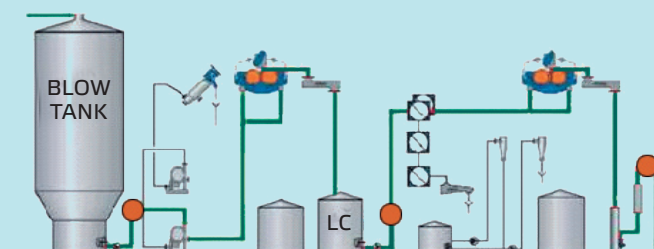


*Typical Valmet Rotating Consistency Transmitter applications at a chemical pulp mill. Consistency control is the base for many other advanced controls, and is used in e.g. washing, screening and bleaching stages. These are vital for production capacity with correct pulp quality at lowest possible cost.*

### Transmitter highlights

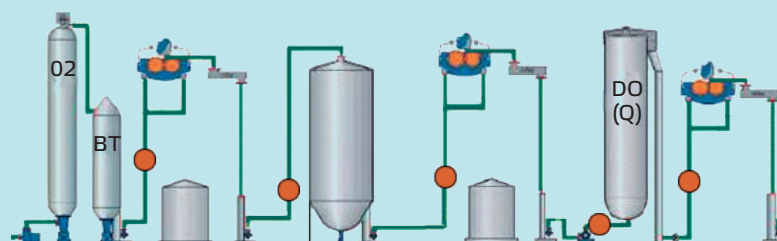
- Patented
- Metal to metal process seal
- Direct shear force measurement
- Fast and stable measurement signal
- Proper compensations
- Service and user friendly

#### Knot screening

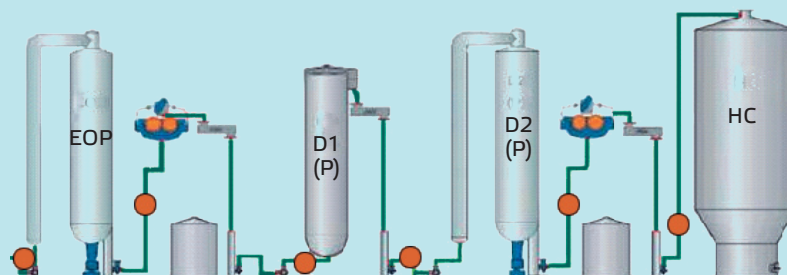


#### Fine screening

#### Delignification



#### ECF bleaching section



# Technical Data

Modularity by Valmet means you buy only what you need and can build a sensor from our parts that best meets your needs.

## Specifications and process conditions

Measuring range	1.5...18% Cs (see table below for more specific data)
Repeatability	+/- 0.01% Cs
Sensitivity	0.004% Cs
Damping	1...60 s
Ambient temperature	-20...+70 °C (-4...158 °F) BD model -20...+50 °C (-4...122 °F) MD model

## Valmet Rotating Consistency Transmitter sensors:

Sensors	See table below for more specific data
Enclosure class	IP65 (NEMA4X)
Housing	Aluminum alloy
Wetted materials	AISI 316L, 254 SMO®

## Operating unit, TCU:

Enclosure class	IP65 (NEMA4X)
Operating voltage	90...260 VAC/0.1A
Outputs: current output	Consistency 4–20 mA + HART® 18...35 VDC
Inputs	2 inputs, isolated 12-48 VDC
Communication:	Profibus PA, PC connection: RS-232 Support for FieldCare and DNAfieldAssessor

## Motor – MD model (1-phase):

Operating voltage	230 VAC
Power rating	0,37 kW
Enclosure class	IP65 (NEMA 4X)

## Motor – BD model (3-phase):

Operating voltage	200–690 VAC
Power rating	0.25 kW
Enclosure class	IP55 (option: IP56)

## Process conditions:

Process temperature	0...+120 °C (+32...248 °F)
pH range	1.5–13
Pressure rating	PN10/PN25 (150/363 lbs.)
Vibration	Max. 20 m/s², 10-2000 Hz



\*) Special coating (pat. pend.) available for all types of sensors.

254 SMO® is a registered trademark of Outokumpu Stainless. HART® is a registered trademark of Hart Communication Foundation.

## Measurement range (% Cs) for different pulp types and sensors

Sensor type*	TH	PM	PH	PV
Pulp type				
SW chem. pulp	1.5–7	6–9	8–12	11–15
HW chem. pulp	1.6–8	6.5–10	9–13	12–16
GW	1.7–8	7–10	9–13	12–16
TMP	1.7–8	7–10	9–13	12–16
RCF	1.8–9	7.5–11	10–14	13–17



# Choose Your Own Way to Respond

## Take action against uncertain times

The new Valmet Rotating Consistency Transmitter helps you make a proactive change to improve your output quality.

In terms of efficient solutions, this is one that can have a significant impact to enable you to better manage the profitability of your process and production.

## Modularity – only by Valmet

Valmet now offers the pulp and paper industry an innovative modular approach.

You can use the Valmet Rotating Consistency Transmitter package that best fits your situation and process for plug-n-play results.

Valmet modularity enables you to maximize the utilization rate of your existing installed base. You buy only what you need and you can even build up your own sensor as best meets your needs. You can choose the best sensor technology that fits your existing process.

The modularity allows you to build up different model versions from our selection of modules. For example, you can build a completely new (MD) model or a replacement model (BD), depending on your needs.

The new Valmet transmitter design supports continuity in that existing transmitters can be rebuilt into the new design. Moreover, Valmet has taken green values into consideration so you do not have to dispose of any parts unnecessarily. Standard components, which are available locally, have been used primarily in the new design to keep costs at a minimum.

## Plug-n-play

With Valmet Rotating Consistency Transmitter, you no longer have to

spend time with additional installation material. You save by using your existing process coupling. Your existing 1- or 3-phase power system supply can also be used along with your existing power cabling. And these savings come without any compromises on the newest technology or performance.

## We've listened – here's our response

Valmet began this concept from listening to you and understanding your needs.

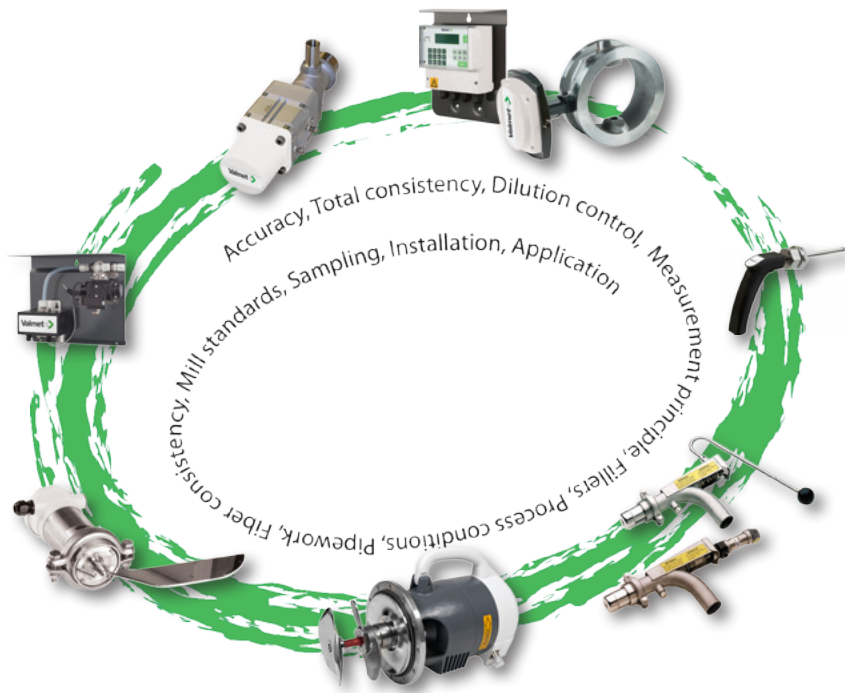
We use innovation to bring the best results to your business. And

we will continue to help you respond to the evolving market and business challenges you're facing today as well as in the future.



### Modules and other options

- Process flange and adapter flanges always pressure rating PN25. Adapter flanges used for old existing installations.
- Sensing elements for different consistency levels
- MD or BD models (motor drive or belt drive)
- 1-phase or 3-phase power options
- Different Sensor materials (AISI 316L, 254 SMO)
- Communication methods (mA, HART, Profibus PA) with DTMs
- Special coating to prevent pitch and build-up



For more information, contact your local Valmet office. [www.valmet.com](http://www.valmet.com)

Specifications in this document are subject to change without notice.  
Product names in this publication are all trademarks of Valmet Corporation.

