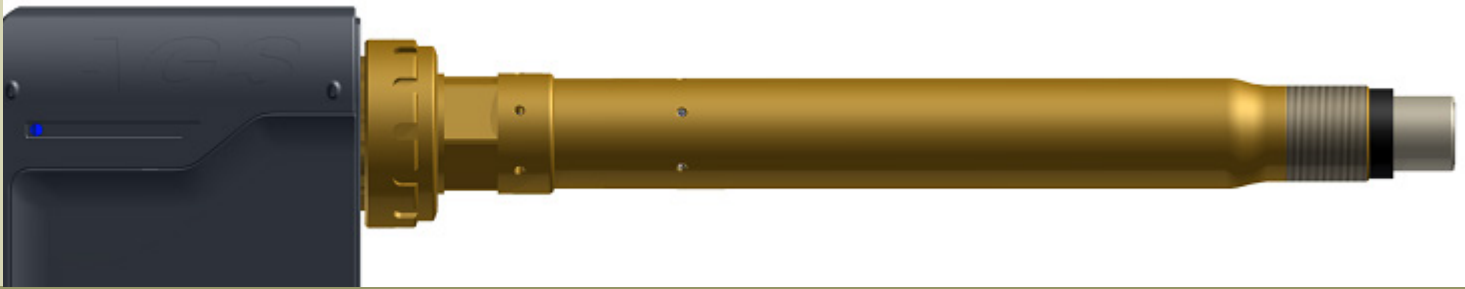


dametric 



AGS

Adjustable Gap Sensor

**THE NEW
GENERATION
OF TDC
SENSORS**

Electronics for harsh industrial environments

THE COMPANY

Dametric specializes in the development and manufacturing of industrial electronics products, such as sensors and systems for measurement, monitoring and presentation. We have over 40 years of experience in producing electronics for harsh industrial environments and our customers and partners include companies from the pulp, paper and weighing industries.

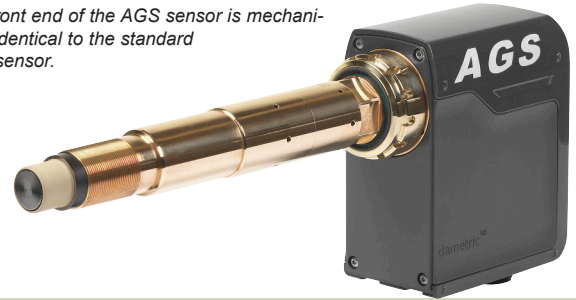
1. SOLVING PERFORMANCE CHALLENGES

Nowadays, pulp mills use fewer and larger refiners, which increases the demands on every included function. Complex procedures such as gap measurement require more built-in intelligence and as a consequence Dametric has developed a smarter and safer gap sensor called the Adjustable Gap Sensor (AGS). This sensor enables automatic calibration, which in turn minimizes the need for personnel training. As a further development of the True Disc Clearance (TDC) sensor, the AGS still possesses such features as an actuator, a stepping motor, a vibration sensor, a conductivity sensor and a position sensor.

The AGS is an integrated sensor that measures the gap between the rotor and the stator, the vibrations and the temperature in a refiner. Unlike the traditional TDC sensor, where the sensor itself is statically embedded in a refiner's stator segment, the tip of the AGS can be moved. Therefore, it is now possible to frequently and easily calibrate, which improves the reliability and accuracy of the calibration process, diminishes downtime on refiners and lowers overall production costs.

The AGS is much easier to calibrate thanks to the Panel PC display that helps to operate the system. The AGS can be used for Single Disc, Twin Disc, Conical Disc/CD refiner and Low Consistency refiner installations.

The front end of the AGS sensor is mechanically identical to the standard TDC sensor.



AGS

MADE TO

2. REFINER CONTROL

The Gap Monitoring System (GMS) is Dametric's measuring and monitoring system for gap and temperature measurement in refiners. The system enables constant quality in production by measuring, monitoring and controlling gaps, and thereby facilitates the overall performance by helping to ensure that processes remain within the correct operational limits.

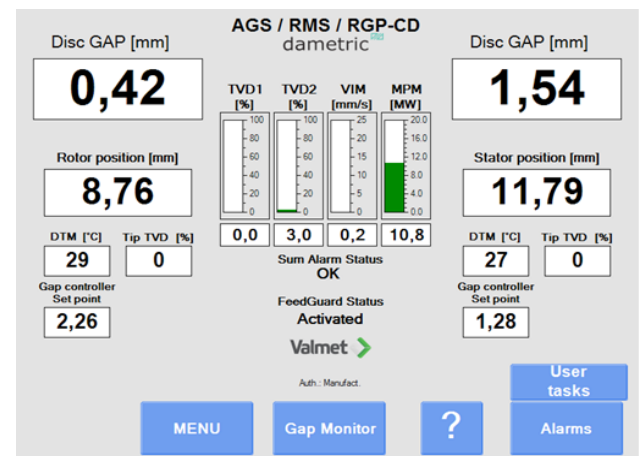
The GMS is a modern version of the Refiner Monitoring System (RMS). GMS have been further developed to be even more compact and now also supports communication with DCS over various of bus standards as ProfiNet and ProfiBus.

Our sensors for the measurement of plate thickness and distance display a high level of strength and resilience whilst still maintaining superior performance levels. They are especially suited to harsh industrial environments with very high demands in terms of precision and reliability.

3. ADJUSTABLE GAP SENSOR

The GMS system features the next generation of TDC sensors - the AGS sensor. The AGS can also be used together with upgraded RMS systems.

4. CONTROLLING ALL OF THE FUNCTIONS



Panel PC with touch screen

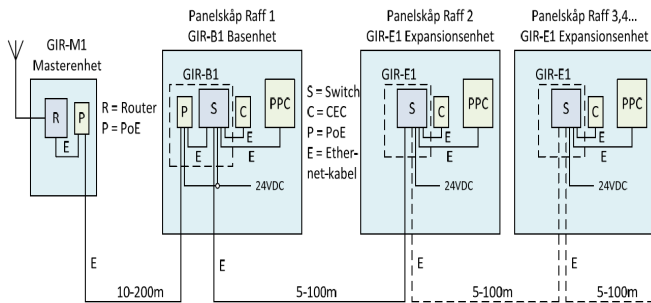
The installation features a cabinet containing a Panel PC with a touch screen, which is used to control all of the AGS functions and displays information regarding:

- Calibration and production parameters
- True Disc Clearance, rotor position parameters and trends
- Events, alarm lists and alarm handling
- Easy to use service and maintenance guidance
- Continuous and event based trend recording

TDC versus AGS

5. GMS REMOTE ACCESS AND HELP

GMS-GIR is a system for remote access and help, designed for all our RMS/GMS systems with service panels. This system is a complement to already installed equipment that allows remote access to enable service, shortens shutdown times and optimizes the refining process.



MEASURE

6. MODULAR STRUCTURE AND BUILDING TECHNOLOGY

The GMS design is based on modules that can be mounted on DIN rails. All of the units act like black boxes, which means that there are no readings on the units inside the cabinet.

Communication between modules runs via the CAN bus. The advantage of this design is that multiple modules can easily connect into the system. Furthermore, modules and function can be chosen to suit your needs.

We are now introducing the next generation of GMS modules with even more compact design. The Basic Refiner Module (BRM) is the main component in this new GMS system.

7. TRUE DISC CLEARANCE VERSUS ADJUSTABLE GAP SENSOR

The accuracy of the TDC sensor is determined by its calibration.

Every calibration needs to be executed in exactly the same way. With the AGS sensor, calibration is performed automatically by moving the tip of the sensor towards the rotor segment instead of moving the rotor towards the stator.

The calibration can be performed with minimal risk of segment damage as the rotor and the stator are no longer moved towards each other during calibration.

	True Disc Clearance	Adjustable Gap Sensor
Sensor calibration today	<p>Calibration is dependent on circumstances (refiner temperature, personnel skills etc.).</p> <p>Calibration is not possible during production.</p> <p>Calibration cannot be automated.</p> <p>Hazardous at plate-to-plate touch point (wear of the plates might take away the taper).</p>	<p>Semi-automatic Panel PC guided calibration.</p> <p>Less plate wearing and safer calibration since the plates never touch when taking the touch point.</p> <p>Much faster and more reliable calibrations.</p> <p>True gap at the point of the AGS tip.</p>
Sensor under production today	<p>No automatic intelligent judgement of the TDC reading. Partially lost segment bars at the TDC radius will generate false TDC readings and result in the risk that the grinding plates might clash.</p> <p>No true means of measuring the refiner parallelism available.</p> <p>Duration between each recalibration depends on the type of refining process and the possibility of stopping the production.</p>	<p>Axially adjustable, the sensor has a measuring tip that can be axially adjusted (controlled by a stepping motor).</p> <p>Accelerometer mounted on the sensor tip shaft for direct vibration measuring of the sensor tip.</p>
Sensor after production	<p>No recycling of used material.</p>	<p>The tip of the sensor can be replaced by the mill.</p> <p>The tip of the sensor can be returned in an exchange system.</p> <p>The AGS tip can easily be exchanged by simply pushing some buttons on the maneuvering panel. Some servicing might be necessary to check all of the parts and sealing gaskets.</p>

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Dametric specializes in electronics for harsh industrial environments. We offer solutions for refiner control, as well as dynamic weighing and registration.

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