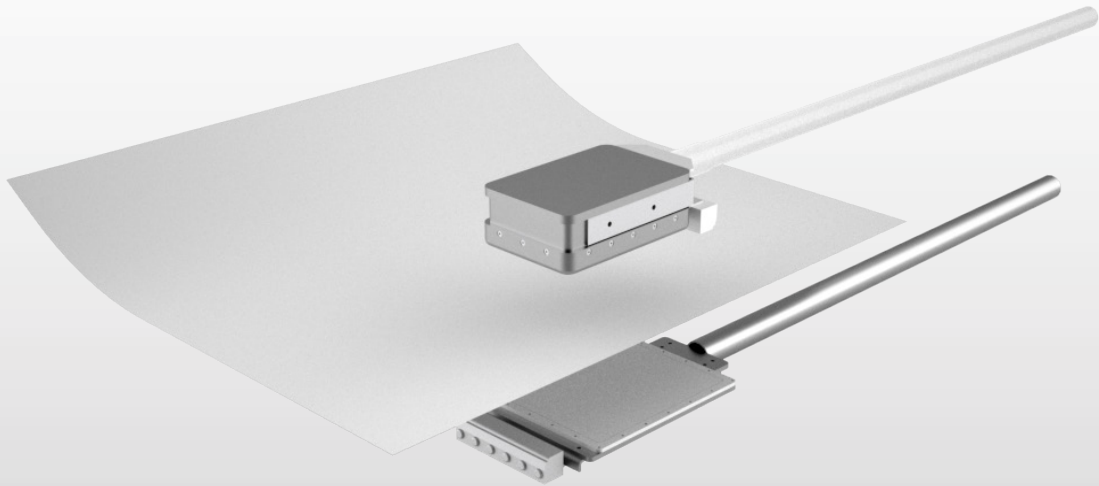


# AMS

Active Microwave Sensors



## R1

### R1 | Non contact on line moisture measurement

INCREASING  
QUALITY

1

IMPROVING  
EFFICIENCY

2

MAXIMIZING  
RUNNABILITY

3

#### Quality – Efficiency - Runnability

The water content on the paper sheet at the exit of the press section is very critical in pulp and paper production process because of his direct influence on the operation of the dryer section with important effects on energy consumption and runnability of machine.

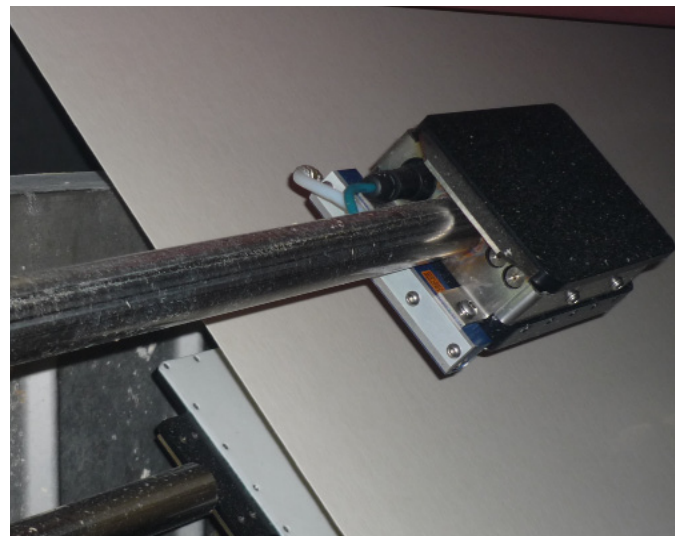
In this section a non contact measurement is needed to measure directly the sheet of paper.

#### Unique patented technology

The sensor is based on an advanced measurement concept that uses a very new microwave reflection approach which allows high performances in term of:

- Resolution,
- Accuracy
- Immunity against various environmental interferences like vibration, temperature, vapor and dust.

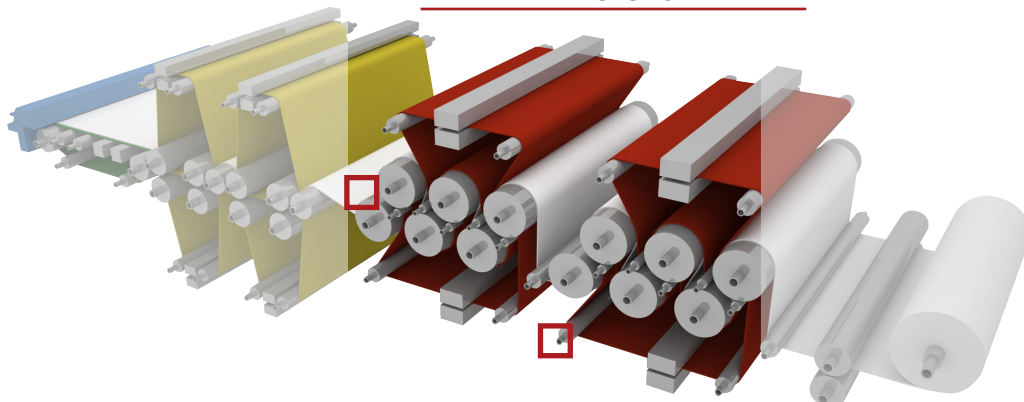
Microwave technology is used to make non contact measurements of physical and physical-chemical parameters such as moisture in pulp or paper sheet and in other sheet like materials used in several industrial processes. The R1 sensor measures the water with accuracy remaining in a safe distance respect to the sheet with no interference in the path of the sheet itself.



#### Main Features

- Non contact measurement
- Wide measurement range from 25 to 800g/m<sup>2</sup>
- Resolution of 0.1 g/m<sup>2</sup>
- High repeatability and reliability
- High color, temperature and vibration immunity
- Easy installation with a single cable
- Simple machine interfacing with via analog out put
- Advanced data processing features with FFT analysis

DRYER SECTION



R1

Flexible positioning

R1 Non contact remote microwave sensor, can be used to measure moisture directly on the running sheet of paper. The R1 can be easily placed at the end of the press section or inside the dryer section with proper cooling system.

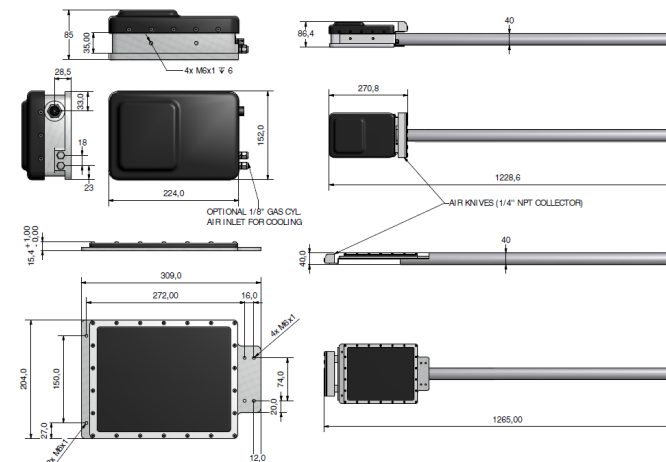
The R1 composed by two parts: the sensor and the reflector that are positioned on the two sides of the sheet. The reflector is a completely passive device with no electrical connection needed and reduced thickness of less than 2cm.

Data analysis with the AMS manager

The sensor R1 can be set to make very fast measurements. The data, in digital form, are accumulated on a computer and the processed and stoved following the acquisition.

Thanks to the accuracy and high measurement rate of the system, it is possible to perform advanced analisys (FFT) on the raw moisture data.

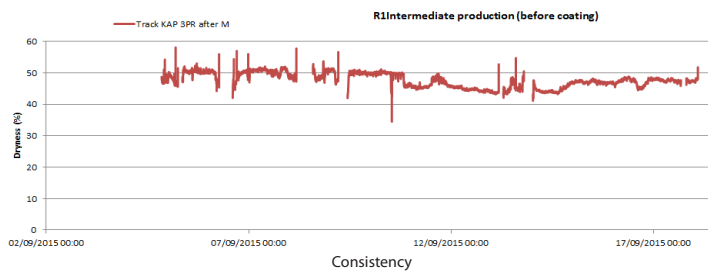
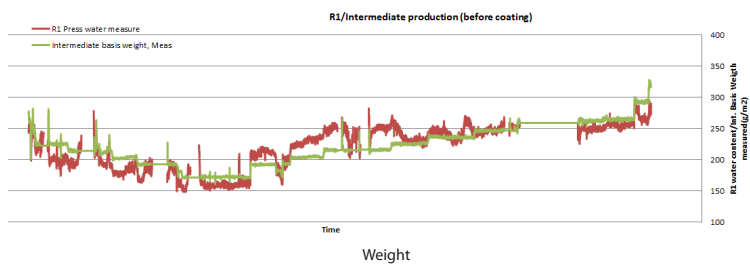
This information can help to found mechanical issues in the



process such as unwanted vibration.

Data collected from each sensors are saved in the internal memory for an easy review.

Easy connection to existing mill control system through flexible analog standard DCS/QCS output (VOLTAGE or CURRENT).



Technical specifications

Measurement specifications

Water content measurement range	g/m2 25 to 800
Resolution	g/m2 0,1
Sample rate	Sample/sec 40 max

Enviromental

Operating temperature	°C 10 - 60
Protection grade	IP 67





Mechanical Specificatio /R1 Sensor

Weight	Kg 2,5
Dimension	mm 222 x 85 x 150

Mechanical Specificatio /R1 Reflector

Weight	Kg 0,95
Dimension	mm 2309 x 204 x 12

Accessories

-  7m male soriau pigtail
-  Air knives
-  Teflon coated aluminium body
-  Brackets with 1m pole