L&W FSD Sensor measures the amount of water at any desired position in the forming section. The measurement results make it possible to gain control of drainage and to monitor that related important properties as fibre orientation, formation, plybonding and distribution of fine particles are correct.

With L&W FSD Sensor (Forming Section Drainage sensor) it is possible to optimize the wet-end chemistry of the stock, which will enable better runnability and increased paper quality.

Field of application
L&W FSD Sensor is used for single point measurements on forming fabrics between step foils or vacuum boxes. It is common to measure before the couch roll to be able to estimate moisture content in the paper before it leaves the wire. In multi-layer Fourdrinier machines all layers are easily monitored thanks to the possibility to apply the instrument to each layer, providing a better overall picture to improve multiple ply bonding. The instrument allows control of foils adjustments, vacuum, refining and the use of retention chemicals.

Advantages of measuring
The main advantages of controlling drainage is reduced energy consumption, reduced number of web breaks, reduced emissions, reduced usage of chemicals and reduced wear and maintenance. These are benefits that lead to lower costs, better runnability and increased paper quality. Another benefit with L&W FSD Sensor is that it uses high frequency technology instead of radioactivity and therefore requires no special permit to be used.

Features/benefits
- Reduce energy consumption
- Reduce web breaks
- Balance chemical usage
- Reduce emissions
- Reduce wear and maintenance requirements
- No radioactivity

Optimize
- Bonding of layers
- Drainage
- Formation
- Fibre orientation
- Effectiveness of retention aids
- Paper quality
- Wet-end chemistry
- Runnability

Process optimization
To get the best results possible – a suggestion is to combine the measurements from L&W FSD Sensor with measurements from the portable L&W Consistency Meter, which monitors the drainage profile all the way from headbox to couch.
**Technical specifications – L&W FSD Sensor, code 898**

**Inclusive**

Measuring head with cable (20 m), control box, user manual

**Measurement**

**Method**

High frequency electromagnetic resonance

**Range**

100–10 000 g H₂O/m² (20–2050 lb H₂O/1000 ft²)(max)

**Measuring head**

**Surface material**

Aluminum oxide

**Housing material**

Stainless steel

**Active measuring area**

Length 70 mm (2.8 in), width 25 mm (1 in)

**Total measuring area**

Length 116 mm (4.6 in), width 71 mm (2.8 in)

**Physical dimensions**

Length 116 mm, width 71 mm

**Temperature range**

10–70°C (50–158°F)

**Protection class**

IP 67

**Control box**

LCD matrix screen with backlight and navigation buttons for information and setup. Connected via a 20 metre cable for signal and power supply to the measuring head.

**Data output**

Water content scaled to 4–20 mA (4× Single line 4–20 mA).

(On request only – HART modem can be provided, which enables process temperature (°C) and diagnostic parameters)

**Measuring sampling rate**

Selectable steps: 1, 10, and 100 values/sec

**Power**

85–264 VAC, 47–63Hz, single phase

**Temperature range**

5–50°C (40–120°F)

**Humidity**

20–90% RH, no condensation

**Protection class**

IP 65

**General conditions**

Temperature and humidity during storage and transportation: -20°C to +70°C, 0–95% RH.

Quality assurance according to ISO 9001:2008. Safety and product responsibility according to applicable CE directives for LVD, EMC and machinery directive.

Measuring condition: pulp conductivity (free ions): 10 000 μS/cm max

Fabric thickness: 2.0 mm max (80 mils max)

**Optional**

Extra measuring head (up to four heads/control box)

Mounting device

**Dimensions**

**Measuring head**

340 × 71 × 75 mm (13.4 × 2.8 × 2.95 in)

**Control box**

350 × 240 × 100 mm (13.8 × 9.5 × 4 in)

**Net weight**

**Measuring head**

2.7 kg (5.95 lbs)

**Measuring head incl. mounting clamp**

3.9 kg (8.6 lbs)

**Control box**

2.5 kg (5.5 lbs)