Litronic®-WMS
Reliable Water Content Measuring System.
Litronic-WMS designed as Shaft Sensor or Planar Sensor.

An autonomous stand-alone-system for the exact determination of the water content during process. Highest quality and best results are guaranteed by the system during production, processing and refinement of most emulsions, powder and bulks. The Litronic-WMS will meet your requirements in every case. An easy-to-use PC software enables a fast and exact calibration.

Features:
- Adjustable measuring range
- Material curve change over
- Sensor replacement without recalibration
- Temperature compensation
- Limiting value analysis
- Connection for optional measured value display and parameterisation module
- Usable as interface detector

**Technical Data:**
- Physical principle: Capacity calculation with high-frequency stray field
- Frequency: 0.02 GHz
- Measuring range: 0-1 %..100 %
- Resolution display: 0.01 %
- Number of stray field condensers: 1 - 3
- Capacity resolution: 10 x 10^-15 F
- Actualisation cycle: 100 ms
- Possible measuring precision: ± 0.05 % moisture
- Power supply: 24 V, 150 mA DC
- Temperature measuring: -10° C – 90° C
- Analogous output: 4 – 20 mA, active
- Error report: 3.6 mA / 22 mA
- Remote parameterisation: HART®-modem
- On-site parameterisation: MINICOM
- On-site measured value display: LCD-Display
- Working temperature: 9° C – 80° C (100° C)
- Material housing: 1.4571
- Protection class: IP 67

**Shaft Sensor:**
- Sensor locations: Pipeline, tank
- Pressure resistance: 110 bar
- Process connection: 2” ANSI 600
- Material measurement field: PEEK

Quick Change- / Retractable Fitting
For pipeline diameters from 8” to 30” and for tank installations optional exchange devices are available. These fittings allow to change the sensor under process.

**Planar Sensor:**
- Sensor locations: material chute, conveyor belt, silo, screws, pipe, tank
- Process connection: Ø 78 mm
- Adjustable range flange: 0..10 mm
- Material measurement field: ZrO₂ + Al₂O₃

**Pipe Adaption**
For pipeline diameters from 1” to 6” (DN 25 to DN 150) a special housing, made of stainless steel, is available. This housing will be installed directly inside the pipe or is used for bigger pipes than 30” as a bypass.

Ex-Protection Gas: II 1 / 2 G IEEx d[ia] II C T6
(zone 0/zone 1 in accordance with CENELEC, ATEX 95/100)

Ex-Protection Dust: II 1 / 2 D T 80° C IP6X Ex ia IIC
(zone 20/zone 21 in accordance with CENELEC, ATEX 95/100)

**Measured Value Display**
- Bar Graph, 4 characters
- Protection class: IP 67

**Parameterisation Module (MINICOM)**
Insertion module for parameterisation with clear text display and 6 keys for parameterisation, installation and service.

PC-Software „WIO“
For initiation, parameterisation and service of Litronic-WMS Planar and Shaft sensors. Used with standard-HART-modem and PC calibration of up to 5 medium specific courses.

**Technical Data:**
- Physical principle: Capacity calculation with high-frequency stray field
- Frequency: 0.02 GHz
- Measuring range: 0-1 %..100 %
- Resolution display: 0.01 %
- Number of stray field condensers: 1 - 3
- Capacity resolution: 10 x 10^-15 F
- Actualisation cycle: 100 ms
- Possible measuring precision: ± 0.05 % moisture
- Power supply: 24 V, 150 mA DC
- Temperature measuring: -10° C – 90° C
- Analogous output: 4 – 20 mA, active
- Error report: 3.6 mA / 22 mA
- Remote parameterisation: HART®-modem
- On-site parameterisation: MINICOM
- On-site measured value display: LCD-Display
- Working temperature: 9° C – 80° C (100° C)
- Material housing: 1.4571
- Protection class: IP 67

**Shaft Sensor:**
- Sensor locations: Pipeline, tank
- Pressure resistance: 110 bar
- Process connection: 2” ANSI 600
- Material measurement field: PEEK

Quick Change- / Retractable Fitting
For pipeline diameters from 8” to 30” and for tank installations optional exchange devices are available. These fittings allow to change the sensor under process.

**Planar Sensor:**
- Sensor locations: material chute, conveyor belt, silo, screws, pipe, tank
- Process connection: Ø 78 mm
- Adjustable range flange: 0..10 mm
- Material measurement field: ZrO₂ + Al₂O₃

**Pipe Adaption**
For pipeline diameters from 1” to 6” (DN 25 to DN 150) a special housing, made of stainless steel, is available. This housing will be installed directly inside the pipe or is used for bigger pipes than 30” as a bypass.

Ex-Protection Gas: II 1 / 2 G IEEx d[ia] II C T6
(zone 0/zone 1 in accordance with CENELEC, ATEX 95/100)

Ex-Protection Dust: II 1 / 2 D T 80° C IP6X Ex ia IIC
(zone 20/zone 21 in accordance with CENELEC, ATEX 95/100)

**Measured Value Display**
- Bar Graph, 4 characters
- Protection class: IP 67

**Parameterisation Module (MINICOM)**
Insertion module for parameterisation with clear text display and 6 keys for parameterisation, installation and service.

PC-Software „WIO“
For initiation, parameterisation and service of Litronic-WMS Planar and Shaft sensors. Used with standard-HART-modem and PC calibration of up to 5 medium specific courses.
Applications / Material List.

- Oil, Crude Oil
- Diesel
- Bio Diesel
- Hardness Oil
- Coolant
- Colour (Off-Set Print)
- Paint
- Solvent
- Lubrication Oil
- Sludge
- Margarine
- Wax / resin
- Ceramic slick
- Other emulsions and suspensions
- Water – product – separation
- and more

For the moisture measurement in powder and bulks, granulate, dust … there is the separate brochure „Litronic-FMS II Reliable Moisture Measuring System“ is available.

Further applications by using of Litronic-FMS II:

Litronic-FMS II, without Ex-protection:
Flange adaption DN 80 for pipes DN 150 and bigger as well as for tanks. 
Pressure PN 16, Material: 1.4404/1.4435, 316 L

The sensor housing will be welded on the flange adaptation and will be mounted in the customer provided pipe/tank.

Sensor P30 with Varivent Adaption:
- For pipes DN 40 – DN 125
- Pressure PN 16, Material 1.4404
- Measurement through sapphire window
- Application for food and drugs industry
- All used materials with FDA certification

50 years of worldwide experience.
The range of measuring systems has been developed based on the experience of the mixing technology. To guarantee a constant high quality and best results of produced concrete a reliable moisture measurement is most essential. This perfected and advanced system is used today world-wide in innumerable different materials.

Liebherr-Mischtechnik GmbH is one of more than 110 companies of the international Liebherr group.

Ident-Nr. 8203 153 05-E-11.09 Subject to technical modifications.