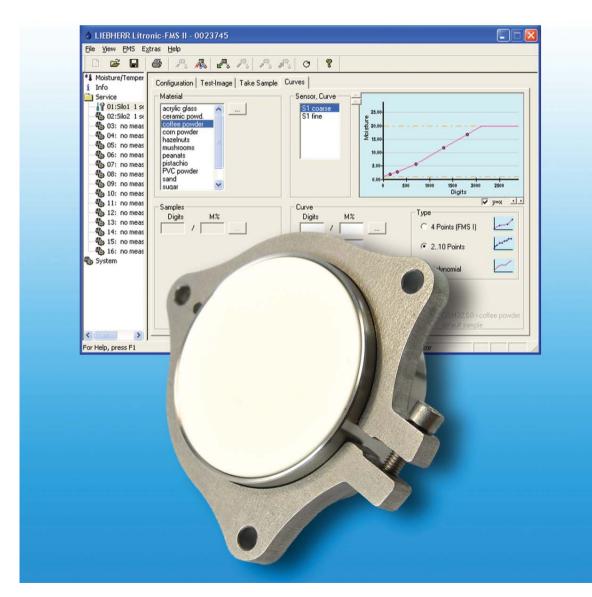
Litronic-FMS II Reliable Moisture Measuring System.



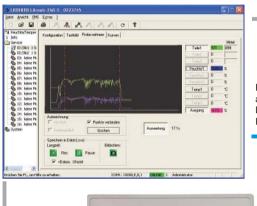
LIEBHERR

System Overview.

An autonomous stand-alone-system with a world of possibilities. Highest quality and best results during process are guaranteed by the exact material moisture measurement. The Litronic-FMS II will meet vour requirements in every case. A easy-to-use PC software enables a fast and exact calibration.

Features: Modular design, adjustable measuring range, 3 sensitivity levels. channel bundling, material curve change over, sensor replacement without re-calibration, material temperature measuring, zirconium oxide wear protection, suitable for batch and continuous processes.

= standard === option







Parameterisation and visualisation via Litronic-FMS II PC-software



Litronic-FMS II

Planar Sensor

Technical Data Sensor:

Physical principle:

Capacity determination with high-frequencyleakage field frequency 0.02 GHz.

Sensor locations: Silo discharge, outside silo on material chute, on conveyor belt with sliding shoe, pipe, screw conveyor.

Measuring range: 0% - 100% M Capacity resolution: 10-1fF Cycle of up-date: 32.64 ms

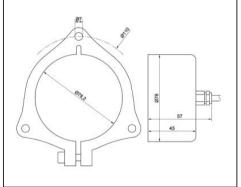
 $16 \times 10^6 - 25 \times 10^6$ Sampling rate: Measuring precision max.: ± 0.05% M 1.)

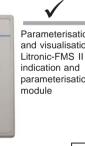
Measured value transm. digital: RS485.

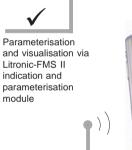
multiprocessor protocol

Max. number of sensors: 16 at bus Max. cable length: 1 2 km -10°C - 90°C Measuring range of temp.: 5°C - 72°C Working - ambient temp.: Working temp, electronics: -20°C - 80°C Protection class: IP68 Wearing protection: ZrO, Al,O, Material shell / flange: V4A (1.4404) Weight without cable: 500 g

1.) Representative according to the batch or the period of continuous operation with the corresponding evaluator Litronic-FMS II, depending on ideal material, flowability and calibration according to the rules







WLAN-AP



Parameterisation

Up to 16 sensors

Sensor bus RS 485

Litronic-FMS II

evaluation unit

interchange and

RS232/Ethernet Digital outputs for limit signal.

STATE OF THE PARTY

expandable

Analogue output

0-10 V 12 bit or

0/4-20 mA 12 bit

change over.

Digital inputs for start/stop control and material curve



Litronic-FMS II Planar Sensor installed in a material chute.



Litronic-FMS II Planar Sensor installed directly under a silo outlet



Litronic-FMS II Planar Sensor for glass manufacturing.



Ethernet

Litronic-FMS II Planar Sensor for seed manufacturing installed in a dryer.



Litronic-FMS II Planar Sensor installed in a sliding shoe on a conveyor belt.



Litronic-FMS II Planar Sensor installed in a sliding shoe for quartz sand.



Interchange and evaluation unit and indication and parameterisation module installed in a housing made of stainless steel.

Material List.

Food and Luxury almonds beans beans beans biscuits herb potato proteins herb potato proteins rape randy cereals lentils maize products salt marzipan soya spices flavouring peanuts protein peas sweets fruit mixings fruit mixings fruit mixings amino acid ascorbic acid asperin pills amino acid beta-carotin powder barium carbonat beta-carotin powder charcoal granule clay coke/powder charcoal granule clay coke/powder coereal grand much more					
biscuits butter candy cereals cheese coffee beans/-powder flakes flavouring french fries fruit mixings fruit powder Products Chemical and Pharmaceutical Products Further Products biscuits butter candy cereals cheese coffee beans/-powder flakes coabeans/-powder flakes flavouring flour french fries fruit mixings fruit powder Chemical and Pharmaceutical Products Further Products biscuits hops (vine) lactoprotein/-powder lentils rusk salt rusk salt rusk salt rusk seasoning soya marzipan soya marzipan suspar supar flavouring pasta / pasta dough peanuts sunflower kernels sumshrooms spices syntlower kernels sumshrooms spices sumshrooms spices sumshrooms spices sumshrooms sugar colour pigments silica/-acid softener strontium-carbon softener strontium-carbon synthetic asperin powder barium carbonat beta-carotin powder barium carbonat beta-carotin powder barium carbonat beta-carotin powder barium carbonat beta-carotin powder ceramic mass ceramic powder charcoal granule clay coke/powder cement production) potato proteins rape rape rape rape rape race colour materials colour pigments silica/-acid stilizer softener strontium-carbon spitch sumshrooms spices synthetic softener strontium-carbon synthetic granules synthetic granules synthetic granules synthetic granules synthetic sand sawdust sawd		and Luxury	almonds		potatocrisps/starc
butter candy cereals cheese coffee beans/-powder flakes flavouring flour french fries fruit mixings fruit powder Products Chemical and Pharmaceutical Products asperin powder barium carbonat basperin powder barium carbonat beta-carotin powder Products Further Products butter candy cereals lentils rusk maize products malt products marzipan mushrooms spices sunflower kernels sunflower suparticum	Food		beans	hazelnuts	h
candy cereals lactoprotein/-powder rusk cheese maize products salt salt coffee beans/-powder cocoa beans/-powder flakes mushrooms pasta / pasta dough flour peanuts sunflower kernels fruit mixings fruit mixings pistachio tobacco yeast Chemical and Pharmaceutical Products Products Chemical and Servic glass granule asperin pills asperin powder barium carbonat beta-carotin powder Further Products Candy cereals lentils rusk maize products salt rusk salt maize products maize products in maize product product in powder in ore sand foundry sand sawdust ceramic powder charcoal granule clay raw material (for materials wooden pellets wooden pellets in powden production)			biscuits	herb	potato proteins
cereals cheese coffee beans/-powder flakes flavouring flour french fries fruit mixings fruit powder Products acrylic glass granule acrylic glass pearls amino acid asperin pills asperin powder barium carbonat beta-carotin powder Products ceramic powder malt products malt products malt products malt products malt products seasoning marzipan mushrooms spices spices spices sumflower kernels sumflower kernels sweets sweets tobacco yeast Chemical and Pharmaceutical Products Chemical and acetate acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills lime hydroxide minerals synthetic granules products Further Products Further Products Ceramic mass ceramic powder charcoal granule clay coke/powder cement production) Ientils rusk salt rusk salt rusk salt rusk salt seasoning mater products seasoning mater products seasoning mater products seasoning mater products sumflower kernels sumflower s			butter	hops (vine)	rape
cheese coffee beans/-powder flakes flavouring flour french fries fruit mixings fruit powder Products acetate acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Further Products cheese coffee beans/-powder flakes malt products malt products marzipan mushrooms spices spasta / pasta dough peanuts peas sweets sweets tobacco yeast Colour materials colour pigments silica/-acid softener strontium-carbon synthetic materials synthetic materials synthetic granules products peas sweets tobacco yeast Colour pigments silica/-acid strontium-carbon synthetic materials synthetic granules products products			candy	lactoprotein/-powder	rice
coffee beans/-powder cocoa beans/-powder flakes mushrooms spices flavouring pasta / pasta dough peanuts sunflower kernels sunflower kernels sunflower kernels sweets fruit mixings pistachio tobacco yeast Chemical and Pharmaceutical Products Products Chemical and Pharmaceutical Products Further Products Colour materials colour pigments silica/-acid silica/-acid servilizer softener strontium-carbon lactose synthetic asperin pills lime hydroxide materials saperin powder minerals sperin powder barium carbonat beta-carotin powder PVC-powder washing powder Further Products Consum materials dry brown coal seed sand sawdust ceramic powder charcoal granule recycling glass raw material (for cement production) Chemical and acetate colour materials Saccarose silica/-acid silica/-			cereals	lentils	rusk
Coccoa beans/-powder flakes marzipan mushrooms spices			cheese	maize products	salt
flakes flavouring flour flour french fries fruit mixings fruit powder Chemical and Pharmaceutical Products Products Further Products F			coffee beans/-powder	malt products	seasoning
flavouring flour peanuts sunflower kernels sunflower kernels sweets fruit mixings fruit powder peas sweets tobacco yeast Chemical and Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills apperin powder barium carbonat beta-carotin powder PVC-powder peace barium carbonat beta-carotin powder charcoal granule ceramic powder charcoal granule ceramic powder charcoal granule ceramic powder recycling glass ceramic powder clay coke/powder cement production) flavouring peasta / pasta dough sugar sunflower kernels sunflower kernels sunflower hands sweets tobacco yeast colour materials Saccarose silica/-acid softener strontium-carbon stilica/-acid strontium-carbon ascorbic acid lactose synthetic materials synthetic granules granules granules washing powder washing powder washing powder washing powder sand thermal insulation materials wooden chips wooden pellets			cocoa beans/-powder	marzipan	soya
flour french fries fruit mixings fruit powder Chemical and Pharmaceutical Products Products Further Carcoal granule colour materials sunflower kernels sweets tobaccomes sweets tobaccome yeast tobaccome years to years to years to years to years to years tobaccome years to years to years to years to years to years to ye			flakes	mushrooms	spices
french fries fruit mixings fruit powder Chemical and Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Further Products Duilding materials ceramic powder charcoal granule ceramic powder charcoal granule ceramic powder charcoal granule ceramic powder coke/powder Chemical and acetate colour materials silica/-acid silica/-acid silica/-acid silica/-acid silica/-acid silica/-acid silica/-acid silica/-acid strontium-carbon strontium-carbon synthetic materials synthetic granules granules granules granules washing powder Building materials dry brown coal seed sawdust sawdust sawdust sawdust sawdust recycling glass raw material (for materials wooden pellets)			flavouring	pasta / pasta dough	sugar
fruit mixings fruit powder Chemical and Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Further Products building materials colour materials colour pigments silica/-acid silica/-acid strontium-carbon strontium-carbon synthetic materials synthetic materials synthetic granules granules beta-carotin powder building materials ceramic mass foundry sand sawdust sawdust ceramic powder recycling glass ceramic powder clay coke/powder cement production) fruit mixings pistachio tobacco yeast Saccarose Salica/-acid silica/-acid strontium-carbon strontium-carbon synthetic materials synthetic granules synthetic granules synthetic granules washing powder washing powder thermal insulation materials clay coke/powder cement production)			flour	peanuts	sunflower kernels
Chemical and Pharmaceutical Products Chemical and Pharmaceutical Products acrylic glass granule acrylic glass pearls fertilizer softener amino acid herbicide strontium-carbon ascorbic acid lactose synthetic asperin pills lime hydroxide materials asperin powder minerals synthetic barium carbonat beta-carotin powder PVC granules granules beta-carotin powder PVC-powder washing powder Further Products Duilding materials ceramic mass ceramic powder iron ore sand charcoal granule clay coke/powder cement production) cement production) cement production cement production			french fries	peas	sweets
Chemical and Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Products Building materials ceramic mass ceramic powder charcoal granule clay coke/powder Chemical and Pharmaceutical acrylic glass granule colour pigments silica/-acid silica/-acid strontium-carbon strontium-carbon strontium-carbon strontium-carbon synthetic materials synthetic granules granules granules granules washing powder Building materials dry brown coal seed sawdust sawdust sawdust sawdust sawdust sawdust sawdust sawdust recycling glass thermal insulation materials wooden pellets			fruit mixings	pistachio	tobacco
Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Products building materials ceramic mass ceramic powder charcoal granule clay coke/powder acrylic glass granule fertilizer softener strontium-carbon synthetic materials synthetic granules granules granules granules washing powder sawdust			fruit powder		yeast
Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Products building materials ceramic mass ceramic powder charcoal granule clay coke/powder acrylic glass granule fertilizer softener strontium-carbon synthetic materials synthetic granules granules granules granules washing powder sawdust					
Pharmaceutical Products acrylic glass granule acrylic glass pearls amino acid ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Products building materials ceramic mass ceramic powder charcoal granule clay coke/powder acrylic glass granule fertilizer softener strontium-carbon synthetic materials synthetic granules granules granules granules washing powder sawdust					
Products acrylic glass pearls amino acid herbicide strontium-carbon synthetic asperin pills lime hydroxide materials asperin powder barium carbonat beta-carotin powder PVC granules granules granules granules washing powder Building materials dry brown coal ceramic mass foundry sand ceramic powder iron ore sand charcoal granule recycling glass coke/powder Cement production) acrylic glass pearls fertilizer softener strontium-carbon synthetic materials synthetic granules granules washing powder Washing powder washing powder sand sawdust seed sand thermal insulation materials wooden pellets	Chemical and			colour materials	
amino acid herbicide strontium-carbon ascorbic acid lactose synthetic materials asperin pills lime hydroxide materials synthetic barium carbonat pVC granules granules beta-carotin powder PVC-powder washing powder Further building materials dry brown coal seed ceramic mass foundry sand sawdust ceramic powder iron ore sand charcoal granule recycling glass thermal insulation clay coke/powder cement production) amino acid herbicide strontium-carbon synthetic materials synthetic granules granules washing powder sand charcoal granule recycling glass thermal insulation materials wooden pellets	Pharm	aceutical	acrylic glass granule	colour pigments	silica/-acid
ascorbic acid asperin pills asperin powder barium carbonat beta-carotin powder Products building materials ceramic mass ceramic powder charcoal granule clay coke/powder lime hydroxide materials synthetic granules granules washing powder Washing powder dry brown coal seed foundry sand sawdust seramic powder recycling glass raw material (for materials wooden pellets	Produ	cts	acrylic glass pearls	fertilizer	softener
asperin pills asperin powder barium carbonat beta-carotin powder PVC granules granules washing powder Further Products building materials dry brown coal ceramic mass foundry sand sawdust ceramic powder iron ore sand charcoal granule recycling glass thermal insulation raw material (for materials wooden pellets)			amino acid	herbicide	strontium-carbon
asperin powder barium carbonat beta-carotin powder Further Products building materials dry brown coal ceramic mass foundry sand sawdust ceramic powder iron ore sand charcoal granule raw material (for coke/powder cement production) asperin powder minerals granules washing powder dry brown coal seed sawdust sawdust sawdust sand thermal insulation materials wooden chips wooden pellets			ascorbic acid	lactose	synthetic
barium carbonat beta-carotin powder PVC granules washing powder PVC-powder Building materials ceramic mass foundry sand sawdust ceramic powder iron ore sand charcoal granule recycling glass thermal insulation raw material (for materials coke/powder cement production) barium carbonat pvC granules granules washing powder washing powder seed sawdust sawdust sawdust sand thermal insulation materials wooden chips wooden pellets			asperin pills	lime hydroxide	materials
Further building materials ceramic mass foundry sand sawdust ceramic powder iron ore charcoal granule clay coke/powder cement production) beta-carotin powder washing powder dry brown coal seed sawdust sawdust sawdust sand thermal insulation materials wooden chips wooden pellets					
Further building materials ceramic mass foundry sand sawdust seramic powder iron ore sand charcoal granule clay raw material (for materials coke/powder cement production) Seed sawdust sawdust sawdust sand thermal insulation materials wooden chips wooden pellets			barium carbonat		
Products ceramic mass ceramic powder charcoal granule clay coke/powder coke/powder ceramic mass ceramic mass foundry sand recycling glass raw material (for cement production) wooden chips wooden pellets			beta-carotin powder	PVC-powder	washing powder
Products ceramic mass ceramic powder charcoal granule clay coke/powder coke/powder ceramic mass ceramic mass foundry sand recycling glass raw material (for cement production) wooden chips wooden pellets					
ceramic powder iron ore sand charcoal granule recycling glass thermal insulation clay raw material (for materials coke/powder cement production) wooden chips wooden pellets		* *			
charcoal granule recycling glass thermal insulation clay raw material (for materials coke/powder cement production) wooden chips wooden pellets	Produ	cts	ceramic mass	foundry sand	sawdust
clay raw material (for materials coke/powder cement production) wooden chips wooden pellets			· · · · · · · · · · · · · · · · · · ·		
coke/powder cement production) wooden chips wooden pellets			charcoal granule		thermal insulation
wooden pellets				· ·	
			coke/powder	cement production)	wooden chips
and much more					wooden pellets
					and much more

Liebherr offers Litronic WMS water-content-measurement (Ex - design) for oils, emulsion and dusts.

50 years of worldwide experience.

The range of measuring systems has been developed from 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 for innumerable different materials. Liebherr-Mischtechnik GmbH is one of more than 90 companies of the international Liebherr group.



Liebherr-Mischtechnik GmbH

Postbox 145, 88423 Bad Schussenried / Germany Phone +49 (0)75 83 / 9 49-0, Fax +49 (0)75 83 / 9 49-3 99

www.liebherr.com, E-mail: info.lmt@liebherr.com

