

Product line

Technologies for Professional Quality Assessment





Each instrument is thoroughly checked in our testing area.

Pfeuffer - Technologies for Professional Quality Assessment

In over 75 years, our company has established itself as a global market leader in the business of measuring and sampling equipment for grains and seeds. Tradition and innovation, quality made in Germany, a passion for sustainability and flexible services with a dedicated customer focus are the main pillars supporting the dynamic growth of Pfeuffer GmbH - yesterday, today and tomorrow.

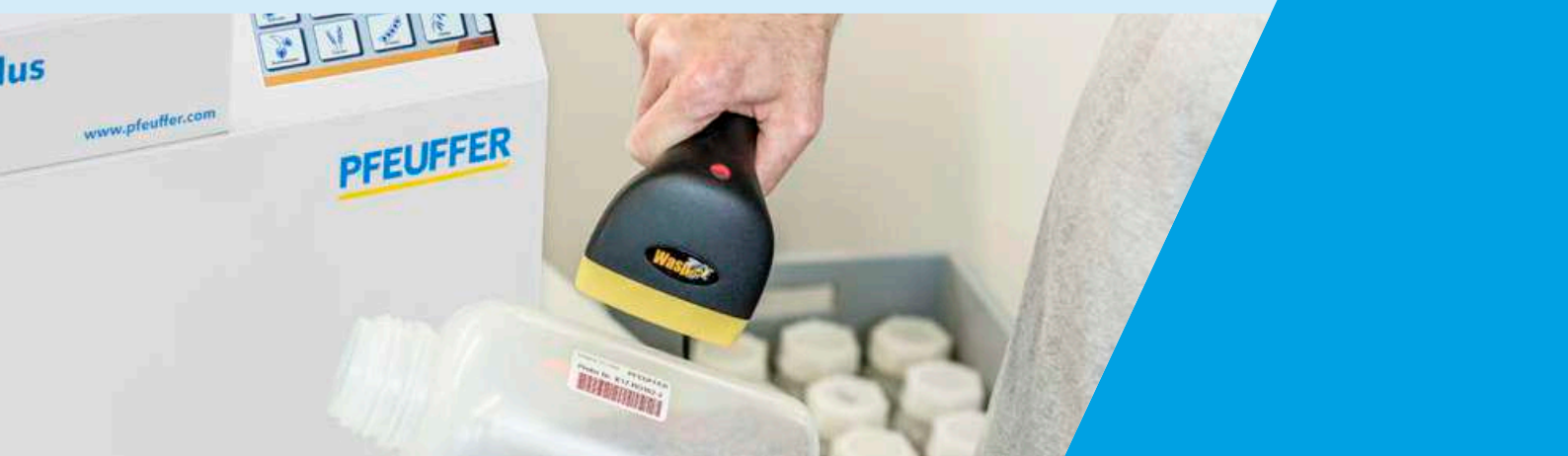
We are a medium-sized family business with highly qualified and committed employees. Short links, focused action and an inspiring working environment are driving the efficient collaboration with our customers and partners.

PFEUFFER



Cornerstones of our company history:

- 1947, foundation by mill design engineer Franz Pfeuffer
- 1981, relocation to Kitzingen (near Würzburg, Bavaria)
- 2006, acquisition of Denmark's Rationel Kornservice A/S
- 2015, expansion of development, manufacturing, storage and administration facilities



Global Focus in the Heart of Europe

Since relocating the company to Kitzingen in 1981, we have built Pfeuffer GmbH into a globally focused development, manufacturing and sales organization. In 2014, the export share of the business rose to a record high of more than 60 percent.

In 2015, we embarked on an ambitious investment program to modernize and expand our engineering, manufacturing and logistics capacities, including two photovoltaic plants for sustainable self-sufficient power supply.

Pfeuffer GmbH

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Precision is important to us down to the smallest detail.

Each sample cleaner is tested and must meet strict quality criteria before shipment.

Industry-leading Performance and Expertise

At Pfeuffer, maximum quality and reliability are the basis of our customers' confidence and guide our activities throughout product development, manufacturing and services.

- **Quality:** Our quality management has been certified to DIN EN ISO 9001 since 2001. In addition, since 2003, our sampling and measuring technology also meets the strict explosion protection requirements of the European ATEX standard (RL 2014/34/EU).
- **Environmental responsibility & sustainability:** We are committed to environmental protection, to the sustainable use of natural resources and to strict adherence to the highest environmental standards, including waste prevention and recycling. Contributing to the sustainable procurement of our resources, two photovoltaic plants at our Kitzingen site supply about 50 percent of our mean annual power needs.
- **Vertical manufacturing integration:** Based on state-of-the-art in-house facilities for product development, manufacturing and assembly, we offer a diversified portfolio of humidity and temperature measuring devices, laboratory equipment, and systems for sampling, sample division and sample preparation. A sophisticated ERP system ensures swift order processing and short delivery times.
- **Services:** The encompassing approach of our corporate philosophy also includes a complete set of customer-focused services for installation, maintenance and repair. This is backed by years of experience and solid, in-depth market knowledge. Today, Pfeuffer GmbH is a competent full-service provider with a reputation for shortest response times and on-time order processing.



PFEUFFER

M18

MaxiFlex
9.6V 4.0Ah

Rakoraf CEE / CHE

Truck sampler

The quickest and most effective way of taking a representative sample from the vehicle

- For all agricultural grain crops
- Patented and tested sampling quality
- Leading in Europe
- Automatic transfer of sample to laboratory
- Operation of weighbridge and sampler

Usage area

The goal of goods inward testing in the acquisition and trading of grain crops is efficient sampling for quick and above all correct evaluation of the deliveries. Sensitivity to foreign substances and lack of quality mean that the representativeness of the delivery samples must be ensured. Correct delivery samples are essential for quality control, documentation and retraceability. Sampling can take place while the vehicle is on the weighbridge.

Function

The sample spear is pushed into the product using the remote control. When this takes place, a proper cross-sectional sample is pushed into the inner tube chamber of the sample spear. The Rakoraf operates using the patented Convac air circulation system. No suction effect is applied to the product. No lightweight fractions (e. g. broken grain, dust and dirt) are drawn in from the immediate vicinity. The air flow only takes the sample which is present in the sample spear and transports it to the weighing room or a laboratory through a PVC hose. There the sample is separated from the air in the reception box (collection container), emptied and is ready for quality control.



Positioning

The Rakoraf sampler is installed free-standing on a foundation. The positioning must be adapted to the local situation. The working and swiveling range can be preselected, and extends to rotation of approximately 350°, covering a diameter of 4.8 m to 8.8 m.

Variants

The CEE model is completely under electro-mechanical control. In the CHE model, the upwards and downwards movement of the telescopic arm is hydraulically controlled.

Pfeuffer, DuoLine, HE, Granomat, Granolyser and Rakoraf are registered trademarks of Pfeuffer GmbH.

Technical data

| Model | Voltage | Output | Weight | Item number |
|-------------|----------------------|---------|--------|-------------|
| Rakoraf CEE | 3x400 V, 50 Hz, 10 A | 4000 VA | 475 kg | 1715 0000 |
| Rakoraf CHE | 3x400 V, 50 Hz, 10 A | 4000 VA | 475 kg | 1715 0010 |

Accessories

| Accessories | Item number |
|---|-------------|
| Control box hand held with 5.0 m cable | 2320 1500 |
| Wireless remote control | 2320 1520 |
| Sample spear 2.1 m (standard) | 1715 0029 |
| Sample spear 2.3 m | 1715 0030 |
| Sample spear 2.5 m | 1715 0031 |
| Sample spear 3.0 m | 1715 0032 |
| PVC transport hose, different lengths | By request |
| Foundation attachment frame | 3321 0300 |
| Foundation sheet metal box with fork lift pockets | 1715 1031 |



Rakoraf 2 / Rakoraf 2 LINEAR

Truck sampler, stationary and with lateral movement

Complete and representative samples can be taken from both sides of articulated trains, semitrailers and railway wagons

- Maximum sampling area 8.8x18.8 m (linear)
- Column construction or alternatively wall-mounted
- Well-trieed and patented sampling technology
- Clearly arranged remote control
- Quick installation



Usage area

The goal of goods inward testing in the acquisition and trading of grain crops is efficient sampling for correct evaluation of the deliveries. Sensitivity to foreign substances and lack of quality mean that the representativeness of the delivery samples must be ensured. Correct delivery samples are essential for quality control, documentation and retraceability. The Rakoraf 2 linear easily reaches any area of the vehicle to do this, e. g. while the vehicle is on the weighbridge.

Function

The sample spear is pushed into the product using the remote control. When this takes place, a proper cross-sectional sample is pushed into the inner tube chamber of the sample spear. The Rakoraf operates using the patented Convac air circulation system. No suction effect is applied to the product. No lightweight fractions (e. g. broken grain, dust and dirt) are drawn in from the immediate vicinity. The air flow only takes the sample which is present in the sample spear and transports it to the weighing room or a laboratory through a PVC hose. There the sample is separated from the air in the reception box (collection container), emptied and is ready for quality control.



Positioning

The Rakoraf 2 with a column or wall console is available with lateral movement (linear) with a maximum sampling area of 8.8x18.8 m or also fixed with a maximum radius of 4.4 m.

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Technical data

| Model | Voltage | Output | Item number |
|------------------|----------------|---------|-------------|
| Rakoraf 2 | 3x400 V, 50 Hz | 4000 VA | 1715 0005 |
| Rakoraf 2 linear | 3x400 V, 50 Hz | 4000 VA | 1715 0006 |

Accessories

| Accessories | Item number |
|--------------------|-------------|
| Sample spear 2.5 m | 1715 0031 |
| Sample spear 3.0 m | 1715 0032 |

Transport system

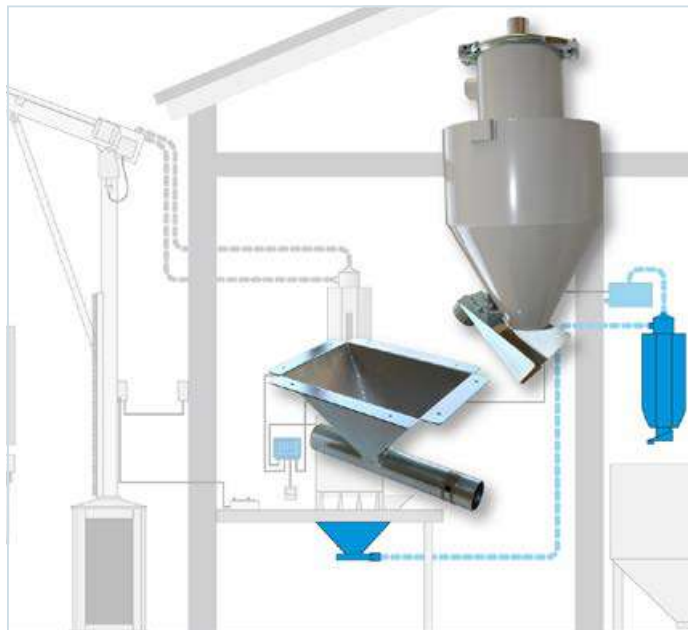
Extension to Rakoraf Truck sampler

Pneumatic transportation of samples, residual samples or surplus quantities

- Automatic transport
- Variable distances of up to 50 m
- Minimal effort required
- Extremely versatile

Function

Consisting of a feed funnel for installation, a blower unit, a reception box (collection container) and a switch box for automatic starting and stopping with a mains plug. A sheet metal housing is available as an accessory, into which the reception box, the switch box, the funnel and the agitator (optional) can be installed. It is used to provide protection against external influences (e. g. rain, snowfall and foodstuff pests).



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Technical data

| Product | Voltage | Output | Item number |
|------------------|--------------|--------|-------------|
| Transport system | 230 V, 50 Hz | 1200 W | 1715 0050 |

Accessories

| Accessories | Item number |
|---|-------------|
| Transport housing | 1715 1025 |
| Agitator | 2320 0620 |
| Blower unit (transport system from 35 m) | 2320 0610 |
| Switch cabinet (transport system from 35 m) | 2320 1070 |

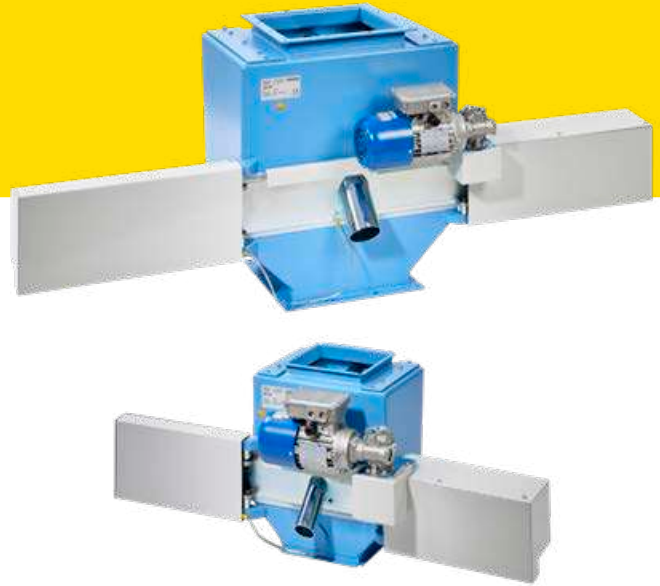


DVB 200 / 300

Process sampler for down pipes

Automatic removal of representative average samples

- Service-friendly design
- Robust, safe and reliable
- Compliant with the ISTA rules
- Extremely versatile
- ATEX version available

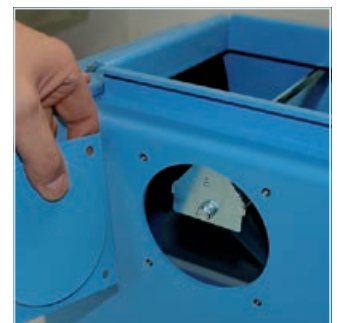


Usage area

The type DVB samplers are used for the product mixture made in the factory or for outgoing deliveries (loading of transport containers or vehicles), for example. The sampler is installed in a vertical down pipe (pipe incline = 25°). It can take samples in various locations in the process automatically and without a great deal of effort.

Function

Sampling takes place through a small cassette-like funnel, which has a removal gap at the top. This opening is automatically led through the flow of product over the entire width of the down pipe. A correct sample is taken across the entire cross-section when this occurs, not just at the sides or in the middle. The time between the individual samples is infinitely adjustable.



Variants

DVB 200, down pipe diameter 50 mm, inlet/outlet 200x200 mm with clamping rings
DVB 300, down pipe diameter 76 mm, inlet/outlet 300x300 mm with counter flanges

Technical data

| Model | Version | Voltage | Output | Weight | Item number |
|---------|-------------------|----------------|---------|--------|-------------|
| DVB 200 | with control | 3x400 V, 50 Hz | 0.09 kW | 36 kg | 1710 0080 |
| DVB 200 | without control | 3x400 V, 50 Hz | 0.09 kW | 36 kg | 1710 0280 |
| DVB 200 | ATEX with control | 3x400 V, 50 Hz | 0.09 kW | 36 kg | 1710 4980 |
| DVB 300 | with control | 3x400 V, 50 Hz | 0.16 kW | 85 kg | 1710 0081 |
| DVB 300 | without control | 3x400 V, 50 Hz | 0.16 kW | 85 kg | 1710 0281 |
| DVB 300 | ATEX with control | 3x400 V, 50 Hz | 0.16 kW | 85 kg | 1710 4981 |

Accessories

| Accessories | Item number |
|--|-------------|
| Sampling slot for DVB 200 with 8.0 mm | 1710 0088 |
| Sampling slot for DVB 200 with 12.0 mm | 1710 0090 |
| Sampling slot for DVB 200 with 14.0 mm | 1710 0091 |
| Sampling slot for DVB 300 with 12.0 mm | 1710 0312 |
| Sampling slot for DVB 300 with 14.0 mm | 1710 0314 |
| Sampling slot for DVB 300 with 30.0 mm | 1710 0330 |

Further slots on request!

PNS sample spear

Alloy version of sample spear

For simple manual sampling of grain and seeds from the vehicle or stored in large storage facilities

- Spirally opening chambers
- Robust design
- Easy to dismantle
- Outlet opening in handle

Function

The spear is pushed into the product to be tested in the closed condition. When the handle is rotated, the removal slots open in an offset order from bottom to top. These spiral openings ensure that the sample material does not mainly fall into the spear through the upper openings. The spear is open towards the rear in the handle so that all of the removed sample (400-600 g) runs out. The spear can be easily pulled apart for cleaning using an internal notch in the screw cap.



Technical data

| Model | Length | External diam. | Weight | Item number |
|--------|--------|----------------|--------|-------------|
| PNS84 | 1.45 m | 38 mm | 2.0 kg | 1720 0300 |
| PNS88 | 2.00 m | 38 mm | 2.5 kg | 1720 0310 |
| PNS88 | 2.50 m | 38 mm | 3.0 kg | 1720 0315 |
| PNS88 | 3.00 m | 38 mm | 3.5 kg | 1720 0318 |
| Pellet | 1.30 m | 50 mm | 2.3 kg | 1720 0320 |



Pfeuffer sample spear

Mechanical sample spear

Removal of average samples up to a depth of 2 m

- Evenly opening chambers
- Robust design
- Easy to dismantle
- Outlet opening in handle
- Light weight

Function

Insert the closed spear into the bulk material. Open the chambers by rotating the handle and then turn it back again. The specially shaped openings prevent grains from being cut up. The original broken grain part is not increased. The spear consists of two anodized aluminum tubes and can easily be pulled apart for cleaning.



Technical data

| Product | Length | External diam. / openings | Weight | Sample quantity | Item number |
|-----------------------|--------|---------------------------|--------|-----------------|-------------|
| Pfeuffer sample spear | 1.50 m | 40 mm / 6 | 1.8 kg | 600 g | 1720 0500 |
| Pfeuffer sample spear | 2.00 m | 40 mm / 8 | 2.3 kg | 800 g | 1720 0510 |

Vario sample divider

Sample divider equipment range for quickly reduced laboratory samples

The standard machine for grain recording

- The quickest way of dividing samples in a representative way
- Large filling funnel
- Infinitely adjustable dividing ratio
- Models for 1 to 8 subsamples
- Extremely good static distribution of the different sample parts

Usage area

The sample divider is the most neglected device in the quality evaluation chain of agricultural grain when delivery takes place. Collection samples are produced in accordance with a fixed number of sampling points. The sample that is acquired in this way usually weighs 5–8 kg. Modern analysis devices required between 300–1000 g.

Function

Switch on sample divider and put the sample into the feed funnel. The surrounding distributor pipe passes the eight variably adjustable openings inside the device. The sub-samples are taken to the collection trays alternately via a tube system. The excess material flows through the middle and can be collected in a collection container or taken away via a pneumatic transportation system. The yellow scale on the front of the sample divider indicates the dividing ratio.

The Vario 1G sample divider is also available with a built-in electric actuator (actuation cylinder) and associated PC software. The device can be used in a single work operation to divide the initial sample, whereby either the size of the subsample or a fixed divided sample / subsample can be chosen.



Technical data

| Model | Number of samples | Voltage / output | Dimensions | Weight | Item number |
|-----------|-------------------|---------------------|----------------|--------|-------------|
| Vario 1G | 1 | 230 V, 50 Hz / 60 W | 492x465x800 mm | 65 kg | 1745 0057 |
| Vario 2H | 2 | 230 V, 50 Hz / 60 W | 492x485x840 mm | 60 kg | 1745 0050 |
| Vario 4/8 | 4 or 8 | 230 V, 50 Hz / 60 W | 492x550x840 mm | 72 kg | 1745 0053 |

Accessories

| Accessories | Item number |
|--|-------------|
| Standard funnel Ø 48 mm | 3331 0500 |
| Extension funnel for capacity of 8 kg | 3331 0510 |
| Funnel diam. 30 mm (9 kg/min) | 3331 0520 |
| Different funnel inserts | By request |
| Stainless steel hook-in plates for changing the dividing ratio | 3331 0530 |
| PVC collection tray, 2 liters | 3110 0050 |

| Accessories | Item number |
|--|-------------|
| Stainless steel collection pan, 2 liters | 3351 0500 |
| Stainless steel collection pan, 3.5 liters | 3331 9015 |
| Stainless steel continuous sample pan | 1740 0081 |
| Side funnel for Vario 2H model | 3321 4020 |
| Agitator for non-free-flowing products | 1745 0065 |
| For Vario 4/8 only: Stainless steel collection pan, 2 liters | 3331 9010 |



Sample divider

Sample dividing into 8 or 32 subsamples in a single operation

Divider for round robin tests and test series

- 8 or 32 subsamples in a single work operation
- Fixed dividing ratio
- Suitable for large sample containers and quantities
- Three funnel sizes available



Usage area

The model 8 / model 32 sample divider is used to produce homogeneous round robin test samples. It is also used to prepare internal control samples, which are needed for regular comparative measurements.

Function

Switch on sample divider and put the sample into the feed funnel. The surrounding distributor pipe distributes the sample among the 8 or 32 sample outlets. The sample is fully distributed, which means that there is no surplus quantity. Because of the large number of openings that are coated when the sample is passing through, the sample divider achieves extremely good statistical distribution of the different sample parts.



Technical data

| Product | Number of samples | Voltage / output | Dimensions | Weight | Item number |
|----------|-------------------|----------------------|----------------|---------|-------------|
| Model 8 | 8 | 230 V, 50 Hz / 60 VA | 540x540x695 mm | 38.5 kg | 1745 0055 |
| Model 32 | 32 | 230 V, 50 Hz / 60 VA | 530x480x575 mm | 51 kg | 1745 0056 |

Accessories

| Accessories | Item number |
|---------------------------------------|-------------|
| Extension pipe (for model 32 only) | 2330 0390 |
| Extension funnel for capacity of 8 kg | 3331 0510 |
| Funnel diam. 30 mm (9 kg/min) | 3331 0520 |
| Different funnel inserts | By request |

Rifle sample divider

Mechanical sample divider product range

Made from stainless steel

- Available in four sizes: 3, 5, 10 and 18 liters
- Three different numbers of slots: 10, 18 and 34
- Different slot widths: from 9.8 to 29.0 mm
- Also suitable for granulates, flour and powder



Function

The initial sample is put into the attached container and closed by tilting it (dividing ratio 50:50). If the sample is to be divided again, depending on the model a drawer can be relocated or the contents of a drawer put into the attached container and the procedure repeated.

Deliverable containers

Container type 1 is supplied with 2 collecting containers, has a closed attached container and is optimum for halving the initial sample quantity. Container type 2 is supplied with 3 identical collecting containers. It has an attached container with an opening for sliding in and for quick relocating of the collecting container. It also has a flap that opens just before the highest point and minimizes the amount of dust. The closed structure is therefore particularly suitable for multi-stage dividing of dusty samples, flour, granulates and powder. Container type 3 has an additional flap for alternative use with or without a collecting container.



Technical data

| Maximum sample quantity | Container type | Number of slots | Slot width | Weight | Item number |
|-------------------------|----------------|-----------------|------------|---------|-------------|
| 3 liters | 1 | 10 | 19.2 mm | 8.0 kg | 1745 0020 |
| 3 liters | 1 | 18 | 10.3 mm | 8.5 kg | 1745 0021 |
| 5 liters | 1 | 18 | 19.1 mm | 13.0 kg | 1745 0022 |
| 3.5 liters | 2 | 18 | 19.1 mm | 13.0 kg | 1745 0023 |
| 5 liters | 1 | 34 | 9.8 mm | 13.5 kg | 1745 0019 |
| 3.5 liters | 2 | 34 | 9.8 mm | 13.5 kg | 1745 0024 |
| 10 liters | 1 | 10 | 29.0 mm | 15.0 kg | 1745 0025 |
| 10 liters | 3 | 10 | 29.0 mm | 15.0 kg | 1745 0018 |
| 10 liters | 1 | 18 | 15.2 mm | 15.5 kg | 1745 0026 |
| 10 liters | 3 | 18 | 15.2 mm | 15.5 kg | 1745 0027 |
| 18 liters | 3 | 18 | 28.2 mm | 23.6 kg | 1745 0028 |
| 18 liters | 3 | 34 | 14.5 mm | 24.0 kg | 1745 0029 |



MLN sample cleaner

Sieve machine with aspiration and deawner

The cleaning procedure essentially corresponds to that of a normal process cleaning machine

- Fully automatic cleaning
- With deawner and aspiration
- Quick sieve change



Usage area

The proportion of impurities (coarse particles, fine particles, aspiration discharge) and the proportion of quality grain can be determined directly upon receipt using a sample. This makes it possible to accept quality grain and reject batches that do not fulfill the contractual conditions in a targeted way.

Function

Put in sample and start the cleaning process. If necessary, the sample is first deawned for a preselectable time. Then the deawner opens automatically and the sample falls through the aspiration chamber. The lightweight dirt such as dust is extracted by the aspiration and deposited in the dust bag by the cyclone. The sample runs over the straw sieve, which removes bigger impurities, and then runs over the sand sieve. Sand and small impurities such as weed seeds fall through the sand sieve. The impurities, sand and weed seeds run into the left-hand collection pan, and the quality grain runs into the right-hand collection pan. A feed funnel is available as an accessory. This means that the sample cleaner can be used for large sample quantities such as for seed cleaning for trial plots.



Technical data

| Model | Number of sieves | Voltage | Output | Weight | Item number |
|-------|------------------|--------------|---------|--------|-------------|
| MLN | 2 | 230 V, 50 Hz | 0.37 kW | 55 kg | 1740 0020 |

Accessories

| Accessories | Item number |
|---|-------------|
| Feed funnel (5 kg capacity) | 1740 0080 |
| Stainless steel collection pan for flow | 1740 0081 |
| Bag holder, 1-way | 1740 0082 |
| Bag holder, 2-way | 1740 0083 |
| Stainless steel collection pan | 3351 0500 |
| PVC collection pan | 3110 0050 |
| Dust bag holder and dust bag | 1740 0100 |
| Different sieves with round and elongated holes | By request |
| Support table MLN/SLN | 1740 0060 |

Standard sieves for MLN

| Sieve | Dimensions | Item number |
|-------------|------------------------------------|-------------|
| Straw sieve | 4.5x20 mm / 300x350 mm | 3115 6088 |
| Sand sieve | 1.5x3.5 mm + Ø 2.0 mm / 300x350 mm | 3115 6999 |

SLN sample cleaner

Sieve machine with sorting sieve

The cleaning procedure essentially corresponds to that of a normal process cleaning machine

- Fully automatic cleaning
- With deawner and aspiration
- Quick sieve change
- Additional sorting sieves for sorting out shriveled and small grain
- Sorting sieve system with cleaning balls

Usage area

The proportion of impurities (coarse particles, fine particles, aspiration discharge) and the proportion of quality grain can be determined directly upon receipt using a sample. This makes it possible to accept quality grain and reject batches that do not fulfill the contractual conditions in a targeted way.

Function

Put in sample and start the cleaning process. If necessary, the sample is first deawned for a preselectable time. Then the deawner opens automatically and the sample falls through the aspiration chamber. The lightweight dirt is extracted by the aspiration and deposited in the dust bag by the cyclone. The sample runs over the straw sieve, which removes bigger impurities and then runs over the sand sieve. Sand and small impurities fall through the sand sieve. The sample is finally led through the sorting sieve (model SLN4 = 2 sorting sieves). Rubber balls prevent the sorting sieve from clogging. The impurities run into the side collection pan. The shriveled and small grain is collected in the left-hand tray and the quality grain in the right-hand tray. For accessories see the MLN sample cleaner.



Technical data

| Model | Number of sieves | Voltage | Output | Weight | Item number |
|-------|------------------|--------------|---------|--------|-------------|
| SLN3 | 3 | 230 V, 50 Hz | 0.37 kW | 85 kg | 1740 0040 |
| SLN4 | 4 | 230 V, 50 Hz | 0.37 kW | 85 kg | 1740 0050 |

Standard sieves for brewing barley SLN3

| Sieve | Dimensions | Item number |
|-------------------------|------------------------------------|-------------|
| Top sieve (straw sieve) | 4.5x20 mm / 300x350 mm | 3115 6088 |
| Sand sieve | 1.5x3.5 mm + Ø 2.0 mm / 300x350 mm | 3115 6999 |
| Sorting / grading sieve | 2.5x20 mm / 300x470 mm | 3115 8057 |

Standard sieves for brewing barley SLN4

| Sieve | Dimensions | Item number |
|-----------------------------|------------------------------------|-------------|
| Top sieve (straw sieve) | 4.5x20 mm / 300x350 mm | 3115 6088 |
| Sand sieve | 1.5x3.5 mm + Ø 2.0 mm / 300x350 mm | 3115 6999 |
| 1st Sorting / grading sieve | 2.2x20 mm / 300x470 mm | 3115 8046 |
| 2nd Sorting / grading sieve | 2.5x20 mm / 300x470 mm | 3115 8057 |



Auto Sample Cleaner

Dockage testing, sorting and weighing

For a wide range of grains and seeds

- With aspiration and deawner
- Self-cleaning sorting sieve through ball cleaning system
- Low noise operation
- Touch screen display
- Integrated printer and LAN interface



Function

The Auto Sample Cleaner weighs an initial sample of grain or seeds (approx. 1.5 liters) in a single operation, starts the SLN 3 sample cleaner, carries out the deawning, opens and closes the deawner floor, performs the cleaning in a time-controlled manner and automatically weighs the two fractions of small grain and quality grain (cleaned sample). The modern operating software shows the determined masses and the corresponding percentages on the display. If required, the result can be printed out immediately or later. The result consists of the cleaning loss (aspirator discharge, straw and sand sieve) and the quality grain and small grain content. The weighed samples can be taken in collecting trays for further analysis or fall into a large material container (volume approx. 90 litres). The Panel PC stores all results. It has two USB interfaces for barcode scanner, keyboard or USB data storage. For easy processing with MS Excel® the results can be exported to a USB data memory. In addition, the Panel PC has a network connection (RJ45, LAN) for fast, automatic transfer of results to a ERP or merchandise management system. A sample cleaner SLN 3 is required for operation of the Auto Sample Cleaner. Optionally, a pneumatic transport system can be used for automatic sample disposal.



Illustrations show Auto Sample Cleaner together with sample cleaner SLN 3.

Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|---------------------|--------------|---------|-----------------|----------------------|-------------|
| Auto Sample Cleaner | 230 V, 50 Hz | 0.40 kW | 790x720x1650 mm | 135 kg, without SLN3 | 1740 0072 |

Accessories

| Accessories | Item number |
|-----------------------------------|-------------|
| Collection pan for flow | 1740 0081 |
| Mounting frame for sample divider | 2350 0775 |
| Barcode scanner | 1920 0900 |

Milomat

Laboratory mill

Ideal for sample grinding for moisture determination with the HE 60 / HE 90 moisture meters

- High sample throughput - fast grinding
- Less force required than grinding with a hand mill
- Easy to clean
- Compact design



Function

The Milomat impact mill effortlessly grinds almost any agricultural grain crop. Add the sample (20 ml). When the metering handle is turned, the product runs into the grinding chamber. The product is ground between a stationary and a rotary metal pin ring (impact effect). The ground material falls via the outlet connection directly into the bottom of the measuring cell of the HE 60 / HE 90 moisture meter. Powerful airflows and heating are avoided during the grinding work so that the actual moisture content is not affected.



Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|---------|--------------|--------|----------------|--------|-------------|
| Milomat | 230 V, 50 Hz | 70 VA | 280x160x300 mm | 10 kg | 1520 0700 |



Pellet mill

Laboratory mill

Crushing of feedstuffs in the form of pellets, bruised grain, cake and granulate

- Low noise
- High grinding capacity 100-200 kg/h
- 3 kg grinding capacity in a single pass
- Collection tray with a capacity of 5 liters
- Also suitable for pellets rich in fat



Function

The sample material to be crushed is put into the funnel and falls through the filling facility into the grinder. The sample material is ground between the grinding pins or the rotating pin roller and the stationary grinding comb in the grinder. The coarsely ground mill material falls through a safety grating

into the drawer. The mill material is intended for further quality control by a suitable analyzer. The pellet mill can also be used for the representative determination of continuously acquired process samples in combination with a Vario sample divider and a DVB sampler.

Insect sieve

Sieve box with drawer

Determination of insect attack during acceptance and storage

Function

Add a representative sample of approx. 100 g and sieve by hand for one minute making movements to and fro. Then check the removable white drawer for the presence of beetles or insects. The effect can be increased by heating the sample.



Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|-------------|--------------|---------|----------------|--------|-------------|
| Pellet mill | 400 V, 50 Hz | 0.55 kW | 360x440x560 mm | 25 kg | 1520 0300 |

Technical data

| Product | Sample quantity | Dimensions | Weight | Item number |
|--------------|-----------------|---------------|--------|-------------|
| Insect sieve | approx. 200 g | 250x250x80 mm | 1 kg | 1290 0010 |

Handheld test sieves

Standard-compliant analysis sieves for grain crops

Classic method for manual total dockage determination

- Compliant with DIN EN ISO 5223
- Stainless steel
- Sample quantity approx. 100 g



Function

The well-tried handheld test sieves consist of a robust stainless steel sieve frame with a high degree of form stability and glued-in perforated plates. No openings are cut into the edge area of the sieves. Sieve diameter \varnothing 200 mm, effective height 25 mm. A lid and a base are available as accessories. DIN EN ISO 5223 determines the features for analysis sieves which are used to determine dockage in grain samples in accordance with DIN EN 15587.



Technical data

| Sieve | Elongated hole | Round hole | Item number |
|----------------|----------------|------------|-------------|
| Fine sieve | 1.00x20 mm | - | 1290 5040 |
| Rye | 1.80x20 mm | - | 1290 5060 |
| Durum wheat | 1.90x20 mm | - | 1290 5062 |
| Wheat | 2.00x20 mm | - | 1290 5065 |
| Barley | 2.20x20 mm | - | 1290 5070 |
| Brewing barley | 2.50x20 mm | - | 1290 5075 |
| Brewing barley | 2.80x20 mm | - | 1290 5067 |
| Chaff | 3.55x20 mm | - | 1290 5090 |

| Sieve | Elongated hole | Round hole | Item number |
|----------|----------------|-----------------------|-------------|
| Rapeseed | - | \varnothing 0.50 mm | 1290 5208 |
| Rapeseed | - | \varnothing 1.80 mm | 1290 5260 |
| Rapeseed | - | \varnothing 3.00 mm | 1290 5280 |
| Maize | - | \varnothing 4.50 mm | 1290 5295 |
| Cover | | | 1290 5005 |
| Base | | | 1290 5010 |



Filling funnel

Sample bag tripod

The filling funnel makes the filling of retained samples in bags quick and easy

Function

The height of the bag tripod is variable, and can be adapted to the size of the bag. The aluminum funnel is easy to clean and can also be sterilized if necessary.



Balance

Compact, robust and practical

Used in agriculture

- Easy to operate
- High precision
- Value for money



Usage area

Balances must be compact, robust and practical for use in agriculture, without having to tax the budget or make concessions with regard to accuracy. These balances with their

striking design are versatile, easy to operate and portable. Automatic shut-off after 5 minutes (mains adapter optional). Three models with different load capacities and accuracies are available.

Technical data

| Product | Funnel diam. | Bag length | Dimensions | Weight | Item number |
|----------------|--------------|--------------|----------------|--------|-------------|
| Filling funnel | 310 mm | up to 310 mm | 200x275x500 mm | 3.4 kg | 1745 0080 |

Technical data

| Product | Version | Power supply | Dimensions | Weight | Item number |
|---------|---------------|-------------------------------|---------------|--------|-------------|
| Balance | 5000 g / 2 g | 3x1.5 V batteries (AA Mignon) | 193x135x39 mm | 470 g | 1610 0052 |
| Balance | 2000 g / 1 g | 3x1.5 V batteries (AA Mignon) | 193x135x39 mm | 470 g | 1610 0053 |
| Balance | 200 g / 0.1 g | 3x1.5 V batteries (AA Mignon) | 193x135x39 mm | 470 g | 1610 0054 |

Granolyser

NIR analyzer for grain, oil seeds and legumes

Determines all of the parameters for your sample quickly and accurately

- Large sample volume of 600 ml
- NIR (near infrared) diode array technology
- 1500 individual scans per sample
- Corresponds to the current Standard Weights and Measures Law in Germany
- Touch screen display and built-in printer



Function

Pour the sample (600 ml) into the Granolyser. The start and settings for the measurement are carried out on the touch screen. The transport wheel ensures that the density is consistent during the measurement. The sample is continuously moved past the detector, and the reflection of the sample in the NIR range is measured. The built-in spectrometer scans within the range of 950 to 1540 nm (NIR). The spectrums recorded by the detector are processed by the evaluation electronics. The analysis parameters are optically determined in less than one minute. Different parameters are determined depending on the selected product: Moisture, protein, sedi, gluten, oil content and starch. The measurement result is displayed and can be printed out.



PC (e.g. with MS Excel®), all measurement data can also be exported onto a USB data memory.

Pfeuffer, DuoLine, HE, Granomat, Granolyser and Rakoraf are registered trademarks of Pfeuffer GmbH.

Connectivity

The Granolyser has a network connection and two USB interfaces for a bar code scanner, keyboard or USB data memory. It can store measuring data in the LAN of an MS Access® database using the Granolyser Data Server application. A database connection can be established quickly using an interface. For simple processing using the

Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|------------|---------------------|--------|----------------|--------|-------------|
| Granolyser | 100-240 V, 50/60 Hz | 70 VA | 370x450x380 mm | 23 kg | 1180 0002 |

Accessories

| Accessories | Item number |
|--|-------------|
| Beaker 0.5 liters | 3112 8605 |
| Rolls of thermal paper (5 pieces) | 3262 8601 |
| Bar code scanner | 1920 0900 |
| Granolyser Data Server database application for MS Access® | 1180 0100 |



Granolyser HL

NIR analyzer with bulk density module

Increase the efficiency of your grain analysis

- All NIR parameters and bulk density
- Corresponds to the current Standard Weights and Measures Law in Germany
- Results in less than 50 seconds
- User-friendly software, available in 20 languages
- Touch screen display and built-in printer

Function

The Granolyser HL supplements the well-tried NIR analysis device with a module for bulk density. A large sample (600 ml) is poured in. The touch screen is used to start the measurement and make the required settings. A long-life halogen lamp with controlled light intensity illuminates the sample. The sample material is continuously transported, the reflection of the sample is scanned in the NIR range and the material is then poured into the bulk container. The weight of a 500 ml sample is determined using an integrated weighing system. As well as different grain types (wheat, rye, barley and maize) oil seeds (rapeseed and sunflower seeds) can also be measured. Grain legumes such as peas and broad beans can also be measured. The important parameters of moisture, protein, sedi, gluten, oil content and starch are supplemented by the hectoliter weight (bulk density) in the Granolyser HL. The measurement result is shown on the display and printed out. The Granolyser HL with LAN and USB interfaces also has the same connectivity as the Granolyser.



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Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|---------------|---------------------|--------|----------------|--------|-------------|
| Granolyser HL | 100-240 V, 50/60 Hz | 70 VA | 500x349x507 mm | 31 kg | 1180 007 |

Accessories

| Accessories | Item number |
|--|-------------|
| Beaker | 3112 8605 |
| Rolls of thermal paper (5 pieces) | 3262 8601 |
| Barcode scanner | 1920 0900 |
| Granolyser Data Server database application for MS Access® | 1180 0100 |

Granomat plus

Whole grain moisture meter

Quickly and accurately determines moisture and bulk density

- High precision
- Measurement result in less than 15 sec.
- Touch screen display and built-in printer
- Clearly arranged and easy to operate in 11 languages
- Compliant with Standard Weights and Measures Law for moisture in Germany

Usage area

Precise determination of the product moisture and bulk density (kg/hl) of the entire grain of agricultural grain crops. Standard version for field beans, spelt (without glumes), durum, peas, barley, oats, maize, rapeseed, rye, soya beans, sunflower, triticale and wheat.

Function

The operator puts the sample (600 ml) into the feed hopper of the Granomat plus. The touch screen is used to make the required settings and start the measurement. The measuring procedure is started by tapping the product symbol on the display. An electric motor unlocks the flaps and the sample falls abruptly into the rectangular measurement cell. It is then homogeneously compacted. A brush removes surplus material above the measurement cell. The reflection, the weight and the temperature of the sample are measured. The measurement result appears on the display within 15 seconds and can be printed out.

Connectivity

The Granomat plus has a network connection and two USB interfaces for a barcode scanner, a keyboard or a data memory.



It can store measuring data in an MS Access® database using the application "Data Server" in the LAN/WLAN. A database connection can be quickly established using an interface in this way. For simple processing using the PC (e.g. with MS Excel®), all of the measurement data can also be exported onto USB data memory.

Pfeuffer, DuoLine, HE, Granomat, Granolyser and Rakoraf are registered trademarks of Pfeuffer GmbH.

Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|---------------|---------------------|--------|----------------|---------|-------------|
| Granomat plus | 100-240 V, 50/60 Hz | 60 VA | 488x304x400 mm | 21.8 kg | 1196 0000 |

Accessories

| Accessories | Item number |
|---|-------------|
| Beaker 0.5 liters | 3112 8605 |
| Rolls of thermal paper (5 pieces) | 3262 8601 |
| Barcode scanner | 1920 0900 |
| Data Server database application for MS Access® | 1180 0100 |





HE 60 / HE 90

Moisture meter with grinding in the storehouse

A measuring method that has been tried and tested thousands of times - reliable and accurate for harvesting, drying and storage

- Easy to operate
- Exact measuring results
- Automatic temperature correction
- Corresponds to the current Standard Weights and Measures Law for moisture in Germany
- Also suitable for flour and bruised grain



Usage area

The moisture meters are used to measure the majority of grain crops. A total of 200 different calibrations are available. Crush the sample (20 ml) with the hand mill or optionally with the Milomat lab mill. Then screw in the top of the measuring cell as far as it will go. The homogeneous press cake is the guarantee of consistently high measuring accuracy. Select product, and after 30 seconds the exact measurement result appears in the display. The sample temperature is measured and taken into consideration automatically.

HE 60 for mobile use

The HE 60 moisture meter is suitable for use in the field or in field offices, and is the guarantee of high precision on site. The built-in battery makes a measuring time of up to 10 hours possible, independently of the power supply. The HE 60 can be programmed with up to 39 calibrations.

HE 90 with document printer

The HE 90 moisture meter is accommodated in a hard wood carry case, and is extremely robust. It contains an integrated document printer. The HE 90 can be programmed with up to 28 calibrations. A PC interface (RS232C) is optionally available



via which the measurement results can be transmitted to a PC or a billing system.

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Technical data

| Model | Voltage | Dimensions | Weight | Configuration | Item number |
|-------|--------------|----------------|--------|---------------|-------------|
| HE 60 | 230 V, 50 Hz | 470x250x120 mm | 6 kg | Battery | 1160 0019 |
| HE 90 | 230 V, 50 Hz | 540x270x130 mm | 9 kg | Printer | 1190 0019 |



HE 50

Grain moisture meter for agriculture

Precision for the most important reference variable in combine harvesting - reliability during threshing, drying and storage

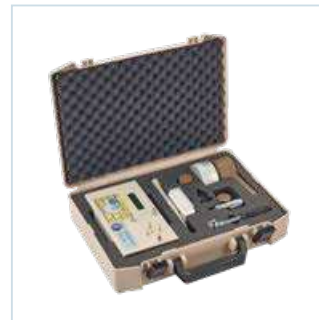
- Easy to operate
- Fast measurement
- Automatic temperature correction
- Wide measuring range of more than 30 % moisture content
- 14 products can be read off directly



Function

Pour the sample (11 ml) into the bottom part of the measuring cell and screw the measurement cell together using the ratchet. Fit the measurement cell to the measuring instrument, turn the switch to the relevant product and press the measuring key. The HE 50 carries out the measurement in seconds, automatically corrects the temperature and displays the measurement result. The measurement cell, which has been specially developed for agriculture, allows a wide range of products to be measured. The homogenization of the sample in the measurement cell provides the optimum prerequisites for accurate moisture measurement. The HE 50 is therefore extremely reliable with freshly harvested grain up to the high measuring range. The HE 50 can be calibrated for more than 200 different products, and is therefore the most versatile moisture meter on the market. Calibrations for peanuts and false oat-grass, grasses and other grain crops are also available.

With the new HE 50 Grain Moisture app, the HE 50 BT (optionally available) can easily be remote-controlled. Connect the device to the app and make measurements. The results with date, time, comments and the position of your



smartphone (GPS coordinates) can be saved, forwarded and exported.

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Technical data

| Product | Power supply | Dimensions | Weight | Item number |
|-----------------------------------|----------------------|---------------|--------|-------------|
| HE 50 | 9 V monobloc battery | 220x120x65 mm | 1.7 kg | 1150 0010 |
| Bluetooth® (BT) adapter for HE 50 | | | | 2250 0020 |

Accessories

| Accessories | Item number |
|---|-------------|
| Measurement cell for floury products and hops | 2150 0020 |

HE lite

Portable and robust moisture meter

The moisture content is crucial for determination of the correct harvesting time

- High measuring range
- Simple menu navigation
- Well-tried measuring principle
- Average calculation
- Adjusting facility



Function

The HE lite measures the conductivity and temperature of a crushed grain sample. State-of-the-art measurement technology calculates the exact moisture value from this. The integrated measurement cell of the HE lite is based on the Pfeuffer principle which has been well-tried for more than 45 years: The sample is crushed and homogenized at the same time by special grinding discs. The HE lite is therefore extremely reliable with freshly harvested grain. Pour the sample into the beaker built into the top of the measuring cell (11 ml) and put it into the grinding chamber. Fit top part and screw together as far as possible. Then switch on device, select type of grain and trigger a measurement. The measurement result appears on the display after a few seconds.

Average calculation

The HE lite automatically calculates the average of several measurements. Simply select the number of measurements and the displayed measured values under "Average" in the settings menu. The display of the HE lite then shows the average and the individual values after every measurement.



Adjusting facility

If necessary, the HE lite can be individually calibrated by the user. The measurements can be modified around a constant value and a multiplicative value can be modified for each product. The HE lite can therefore be optimally adjusted to individual requirements.

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Technical data

| Product | Power supply | Dimensions | Weight | Item number |
|---------|-------------------------------|--------------|--------|-------------|
| HE lite | 3x1.5 V batteries (AA Mignon) | 200x82x85 mm | 0.9 kg | 1170 0000 |

Accessories

| Accessories | Item number |
|-------------|-------------|
| Case | 3111 0270 |



Pfeuffer HFM

Measuring lance for hay and straw moisture

Quick determination of moisture and temperature of pressed hay and straw

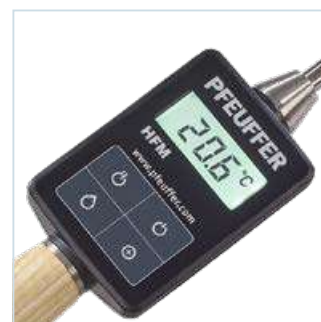
- ▶ Robust stainless steel lance, length 50 cm
- ▶ Moisture from 9 % to 50 %
- ▶ Temperature from -10 °C to +100 °C
- ▶ Quick display
- ▶ Holding, counting and average function

Usage area

The Pfeuffer HFM can be used in the hay and straw trade. You safeguard the quality of your feedstuffs with this device. The correct storage moisture and temperature gives you reliability during storage and protects from destruction by fungal attack and rotting. The Pfeuffer HFM has a continuous stainless steel probe for measuring, which is held by an ergonomically shaped wooden handle.

Function

The display shows the current moisture value during the measuring procedure. The measurement can be reliably taken within a few seconds on different locations in bales or a large number of bales - without pressing a button. The resolution of the device is around 0.1 %, and the accuracy in practical use is around +/-0.8 % points. Temperature measurement - switch the device to temperature mode and insert the measuring probe into the bale in the required location. Wait until the displayed value is stable before reading off the temperature. The Pfeuffer HFM has a highly sensitive temperature sensor which quickly adapts itself to the product.



Technical data

| Product | Power supply | Dimensions | Weight | Item number |
|--------------|----------------------|--------------|---------|-------------|
| Pfeuffer HFM | 9 V monobloc battery | 772x70x48 mm | 0.65 kg | 1315 0015 |

Contador

Seed counter

Counting and filling of all seeds from 0.3 mm to 15 mm

- Fast counting speed
- Exact counting results
- Flexible due to easily changeable feed container
- All functions can be controlled via PC software
- Little inherent noise



Function

The Contador is an optical counter with integrated vibration channel. The counting speed is automatically controlled depending on the size of the material to be counted, so that the counting time is minimized and a high degree of counting accuracy is achieved. The feed container is held by a magnet and is easy to change. Both a sample change and a crop type change can therefore be carried out very quickly. The Contador can be controlled using the keyboard on the device or using the serial interface, e. g. with the SeedCount PC software which is available as an accessory.



Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|----------|---------------------|--------|----------------|--------|-------------|
| Contador | 115-230 V, 50/60 Hz | 50 VA | 430x235x380 mm | 16 kg | 1410 0011 |

Accessories

| Accessories | Item number |
|--|-------------|
| Feed container no. 1 for rapeseed, seeds, fine seeds | 2410 0101 |
| Feed container no. 2 for grain and sunflower seeds | 2410 0102 |
| Feed container no. 3 for maize, broad beans and peas | 2410 0103 |
| SeedCount PC software for automatic processing of counting lists and printing labels | 1410 0320 |

Contafill

Filling station for Contador seed counter

Effortless filling of small seed batches

- For all of the most popular paper and plastic bags
- Carousel for plastic and glass bottles
- Number of seeds and bags can be preselected
- Detection of missing bags or bottles
- Continuous operation or stop after one cycle



Function

Put the seeds into the feed hopper and fit bags to the carousel. Preselect the number of grains per bag on the Contador or using the PC software and start. The Contador starts and counts the required number of grains into the first bag. The bags can be circulated continuously or individually. In this way, the bags can be replaced at regular intervals, or the entire carousel can be reloaded at the end of counting. This procedure is made easier by the base for the carousel. This reduces the stop times during the filling procedure to a minimum. The Contador automatically detects the bags using a sensor so that no valuable seeds are wasted.



Technical data

| Product | Voltage | Dimensions | Weight | Item number |
|-------------------------|---------------------|----------------|--------|-------------|
| Contafill | 24 V (via Contador) | 480x440x340 mm | 16 kg | 1410 0050 |
| Contafill (high design) | 24 V (via Contador) | 480x440x420 mm | 16 kg | 1410 0055 |

Accessories

| Accessories | Item number |
|--|-------------|
| Base for supporting a carousel | 2410 0650 |
| Carousel for bags and bottles approx. 50 to 120 mm long for 10 filling positions | 2410 0501 |
| Carousel for bags and bottles approx. 50 to 200 mm long for 10 filling positions | 2410 0502 |

Contador 2

5-Channel seed counter

Increase the efficiency of your counting processes

- Count and fill at high speed
- Counting rates of up to 5000 grains/min
- Compact design, light weight
- Flexible due to easily changeable feed container
- All functions can be controlled via PC software



Function

The Contador 2 is a lightweight and compact seed counter with an extremely fast counting speed, short transport section and high counting speed. The attached feed container makes quick and flexible use for different types of seed possible. This makes quick sample changing possible without having to run the transport section empty. The new type of feed container and a counting algorithm that is coordinated with it are the guarantee of fast counting speed and accuracy. The Contador 2 can be controlled using either the function keys on the device or via the interface, e. g. with the SeedCount PC software that is available as an accessory.



Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|------------|--------------|--------|----------------|--------|-------------|
| Contador 2 | 230 V, 50 Hz | 24 VA | 375x168x185 mm | 4.5 kg | 1410 0019 |

Accessories

| Accessories | Item number |
|--|-------------|
| Feed container no. 1 for rapeseed and small seeds | 2410 0301 |
| Feed container no. 2 for grain | 2410 0302 |
| Feed container no. 3 for maize and legumes | 2410 0303 |
| Feed container no. 4 for fine seeds | 2410 0304 |
| SeedCount PC software for automatic processing of counting lists and printing labels | 1410 0320 |

Contafill 2

Filling station for Contador 2 seed counter

Effortless filling of small seed batches

- For all of the most popular bags and bottles
- Slimline design for free access
- Number of bags can be preselected
- Detection of missing bags or bottles
- Continuous operation or filling stop after one circulation of the carousel



Function

Put seed, e. g. rapeseed into the feed container of the Contador 2. Equip the carousel with bags, hang up and secure. Preselect number of grains per bag and start the counting process. Filled bags can be removed and empty bags fitted continuously in operating mode B. In operating mode P the Contafill 2 fills the first ten bags. If a second carousel is equipped with bags, the two carousels are swapped at the end of the filling procedure. Because of the electronic sensor in the Contafill 2, the Contador 2 automatically detects whether all bags are actually present and skips empty positions without a bag.



Technical data

| Product | Voltage | Dimensions | Weight | Item number |
|-------------|---------------------|----------------|---------|-------------|
| Contafill 2 | 24 V (via Contador) | 520x420x345 mm | 11.5 kg | 1410 0060 |

Accessories

| Accessories | Item number |
|--|-------------|
| Base for supporting a carousel | 2410 0650 |
| Carousel for bags and bottles 50 to 200 mm long for 10 filling positions | 2410 0502 |

Sortimat

Laboratory sorting machine

Sorting and appraisal of grain

- Determination of the full barley proportion
- Tiltable sieve stack and sieve cleaning
- Available with 3, 4 or 5 sieves
- Robust and solid construction
- Official method in accordance with MEBAK, EBC and ICC



Usage area

The Sortimat is designed for sorting and classifying agricultural grain crops and products derived from them. The main focus of use is in the boldness determination of brewing barley. The Sortimat can be used to appraise the productive capacity of grain, legumes, oil seeds and pellets.

Function

The Sortimat is designed for a sample quantity of 100 g. The tiltable stack of sieves and the integrated sieve cleaning make it possible to carry out several samples within a minimal amount of time. Complicated dismantling and cleaning after every sorting. The laboratory sorting machine is available in three variants with three, four or five sieves. The Sortimat consists of a mechanical vibrating device with an electric motor and an electronic timer for controlling the sieving time.

Accessories

Separating device for wheat or for barley and rye: These plastic channels with milled recesses sort broken and round grain from the sample. They are inserted into the filling opening and held in place with a mounting bracket. A double tray is available for sorting malt. The sieves are exchangeable.



Technical data

| Model | Number of sieves | Voltage / output | Dimensions | Weight | Item number |
|-------|------------------|----------------------|----------------|--------|-------------|
| K3 | 3 | 230 V, 50 Hz / 40 VA | 550x270x350 mm | 28 kg | 1240 0100 |
| K4 | 4 | 230 V, 50 Hz / 40 VA | 550x270x380 mm | 29 kg | 1240 0110 |
| K5 | 5 | 230 V, 50 Hz / 40 VA | 550x270x410 mm | 30 kg | 1240 0120 |

Accessories

| Accessories | Item number |
|---|-------------|
| Broken and round grain separating device for barley and rye | 2440 0020 |
| Broken and round grain separating device for wheat | 2440 0021 |
| Collection tray for malt | 2440 0022 |
| Clamp for separating device | 2440 0023 |
| Various sieves made from brass or stainless steel (round or elongated hole) | By request |

Friabilimeter

Measuring instrument for malt friability

Quick and easy evaluation of the brewing value of malt for breweries and malthouses

- Uncomplicated mechanical analysis
- Practical brewing value statement
- Simplification of the malt analysis
- Robust and solid construction
- Internationally recognized method (IM)



Usage area

Brewers need high-quality malt for producing beer. The brewing value of the malt can be determined quickly and easily in practice using the Friabilimeter. In the malthouse, the Friabilimeter makes it possible to monitor the quality of the malt immediately after drying. Irregularities during the malting procedure are detected and corrected. The brewery can determine the quality of the malt upon delivery and then adjust the malt mixtures so that they are consistent.

Function

A malt sample (50 g) is mechanically separated into its hard and crumbly constituents. The grains are pressed against a rotating sieve drum for 8 minutes by a roller with constant spring pressure. The crumbly parts fall through the wire braiding. Glassy grains and hard broken parts remain in the sieve drum. As far as the hard malt components are concerned, a distinction is made between partial hyaline and whole hyaline. The individual fractions are weighed and converted to a percentage. The percentage values are a constituent of the malt specification between breweries and malthouses. Excessive glassiness has a detrimental effect during the mashing and lautering process. Deficiencies occur in the



brewing process in wort clarification, fermentation, maturing and filtration, whereby climate and variety-related influences can occur.

Technical data

| Product | Voltage | Output | Dimensions | Weight | Item number |
|---------------|--------------|--------|----------------|--------|-------------|
| Friabilimeter | 230 V, 50 Hz | 50 W | 400x265x270 mm | 12 kg | 1810 0000 |

Accessories

| Accessories | Item number |
|---------------------------------------|-------------|
| Pressure roll | 2810 0080 |
| Drive roll | 2810 0030 |
| Sieve drum | 2810 0100 |
| Can of test malt, 400 g | 4898 0120 |
| Can containing official EBC test malt | 4898 0130 |

Hecto grain tester

Handy volume measuring device

Up to five times faster than conventional mechanical determinations

- Bulk density for barley, oats, rye and wheat.
- Robust design (stainless steel), 0.5 liters
- Simple and easy operation
- Mobile and power supply-independent
- Exact measurements



Function

Insert the cut-off slide into the Chondrometer. Insert plunger weight and pour in the grain sample. Pull out the cut-off slide quickly. The plunger weight and the grain fall into the bottom part of the Chondrometer. Cut the volume exactly using the cut-off slide. Pour out surplus grain and weigh the contents on the compact digital balance. The bulk density (kg/hl) of the different grain types is then determined on the basis of the provided calibration chart. Particularly suitable for farmers, universities and field testing. The Hecto grain tester is not compliant with the current Standard Weights and Measures Law in Germany!



Technical data

| Product | Version | Case dimensions | Weight with case | Item number |
|--------------------|-----------------|-----------------|------------------|-------------|
| Hecto grain tester | with balance | 425x340x115 mm | 4.5 kg | 1745 1000 |
| Hecto grain tester | without balance | 425x340x115 mm | 4.0 kg | 1745 1001 |



Grain tester model 1938

Volume measuring device

Determination of the bulk of a liter of grain and conversion to EEC bulk density for trade

- Bulk density for barley, oats, rye and wheat.
- Robust design (brass), 0.25 liters or 1.0 liters
- Simple and easy operation
- Exact measurements
- Good reproduction



Usage area

The high-precision grain testers are used to measure the EEC bulk density (bulk per hectoliter, hectoliter weight) of barley, oats, rye and wheat. The bulk is determined with the aid of a balance. The ratio of bulk to volume results in the bulk density, which is corrected with the factors from the official tables for liter and quarter liter samples. A calibrated balance is required for determination in the trade, and is available as an accessory.

Function

Insert the skimming knife, insert the plunger weight into the measuring cylinder, fit the forward cylinder (1.25 liters) and pour in the grain sample. Pull out the skimming knife quickly. The plunger weight and the grain fall into the measuring cylinder (1.0 liter). Cut the volume exactly using the skimming knife. Pour out excess grain, remove the forward cylinder and weigh the contents on a calibrated precision balance. The bulk density (kg/hl) of the different grain types is then determined on the basis of the provided correction table.



Technical data

| Product | Version | Weight | Item number |
|-------------------|-------------|--------|-------------|
| Grain tester 1938 | 0.25 liters | 3.2 kg | 1745 5010 |
| Grain tester 1938 | 1.0 liters | 6 kg | 1745 5015 |

GT 1 temperature measuring probe

Monitoring the temperature in bulk material

Versatile assistant in agriculture and in small grain stores

- Large LCD display
- Temperature sensor in measuring tip and housing
- Robust probe made from GRP, 0.5 m to 2.8 m
- Conical or knife tip
- Simple and easy operation

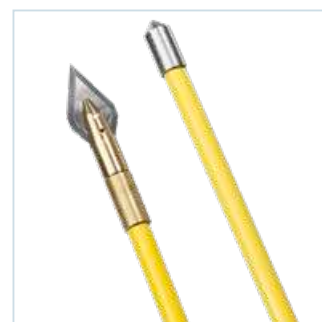


Usage area

The GT 1 temperature measuring probe is suitable for measuring in batches at different depths and on the surface. It has two temperature sensors, one in the measuring tip and one in the display housing. The temperature measurement is within the range of -10 °C to +70 °C in loose agricultural bulk materials such as grain, silage, compost, hay and straw.

Function

Insert the GT 1 temperature measuring probe into the bulk material. Wait until the temperatures of the bulk material batch and the sensor in the measuring tip have equalized. The exact temperature value can be conveniently read off on the digital display. The GT 1, GT 1-2 and GT 1-3 are supplied with a robust conical tip made from stainless steel. The GT 1S, GT 1H and GT 1-3H contain a screw-on two-piece knife tip with a knife holder and a durable quality knife made from hardened and sharpened stainless steel. The knife is supplied in a separate case and can be unscrewed for transportation purposes. Weight: 350 g to 530 g depending on model; power supply: 1x1.5 V battery (AAA Micro)



Technical data

| Model | Products | Length | Item number |
|---------|--------------------------|--------|-------------|
| GT 1 | Grain, oil seeds, grains | 1.5 m | 1332 1102 |
| GT 1-2 | Grain, oil seeds, grains | 2.0 m | 1332 1108 |
| GT 1-3 | Grain, oil seeds, grains | 2.8 m | 1332 1103 |
| GT 1S | Silage | 0.5 m | 1332 1105 |
| GT 1H | Hay, straw, compost | 1.5 m | 1332 1106 |
| GT 1-3H | Hay, straw, compost | 2.8 m | 1332 1107 |



GTM 800

Temperature logger for grain stores

The standard for documentation in small grain stores

- Storage for up to 800 measurements
- Infrared interface (serial, RS232)
- Measurement time memory
- Adjustable limit temperature
- For up to 200 temperature measuring probes (cable-bound)



Function

Connect the GTM800 to the respective temperature measuring probe via a cable. Select position and press measure. If the limit is exceeded or undershot, an acoustic signal provides an immediate warning. The affected temperature values are marked. Call-up of temperatures in the display. Print and save the measuring data on the PC together with the date and time. Up to 200 temperature measuring probes can be measured and saved using the GTM 800.



Measuring feeders

Temperature measuring probes (wired)

Detailed quotation on request.



Item

| Model | Item number |
|---------|-------------|
| GTM 800 | 1336 0800 |

Accessories

| Accessories | Item number |
|---------------|-------------|
| Carrying case | 1336 0100 |



DuoLine STAR

Temperature measuring system

Quick and efficient management of the temperatures in the silo and the grain store

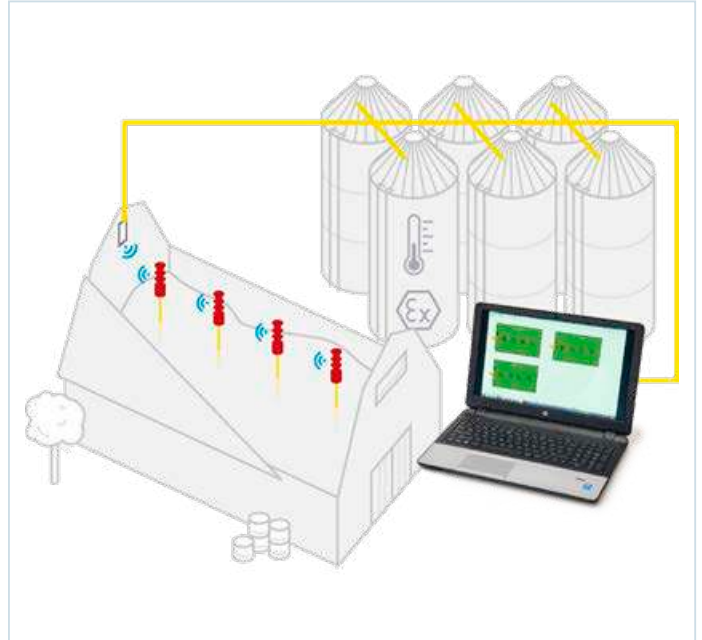
- Minimal installation work
- Fail-safe and reliable data communication
- High cable and wireless ranges
- Wireless bus communication
- Flexible, compatible and expandable

Usage area

The temperature in the grain store is the most important indicator for changes to the stored quality. Increasing temperatures are an indication of infestation by storage pests or moisture problems. The DuoLine STAR (DLS) temperature measuring system is used for fully automatic temperature control of grain stores, and helps to detect problems at an early stage and make decisions about measures that can be taken to preserve the health of the stored grain. The control of cooling or ventilation measures is directly related to the resulting temperatures.

Easy installation

In order to record the temperatures, measuring transducers are attached in several locations in the silo or grain store. The measuring transducers are digitally connected to an evaluation unit via a four-wire bus cable (portable, stationary, PC software) so that temperature problems can be quickly localized. An external sensor for temperature, humidity and dew point can also be optionally connected. The DLS Bus makes quick and cost-effective installation possible. The cost of installation is reduced to a minimum, since only four wires are needed for the entire remote cabling. DLS can



be installed serially or radially, or in combinations of both variants.

The DLS temperature measuring system is individually adapted to your requirements. Do you have any questions or would like to receive further information? Just call us or send us an email, we would be pleased to help!

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DuoLine STAR mobile

Portable temperature measuring system

Handy measuring device for temperature control in grain silos and grain stores

- Combination of silos and grain stores
- Intuitive operation
- Easy installation
- Infrared interface
- Suitable for use in ATEX Zone 20/21



Usage area

Professional support for documentation in the grain store. Quick and reliable delegation of the necessary measuring data. With DLS mobile the temperatures of up to 2x10 silo cells with sensor cables and up to 200 temperature measuring probes (wired) can be measured and stored.

Function

Connect DLS mobile to the GT-DLS connection box using the connecting cables and start the temperature measurement of the silo system. If a set limit is exceeded, an acoustic signal provides an immediate warning. The affected temperature values are marked. Call up the temperatures in the display, and print or save the measuring data on the PC.

Measuring feeders

Temperature measuring probes (wired), sensor cables with suspension brackets or sensor cables with a floor socket and a control module



Detailed quotation on request.

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Item

| Model | Item number |
|---------------------|-------------|
| DuoLine STAR mobile | 1336 0000 |

Accessories

| Accessories | Item number |
|---|-------------|
| Connection cable DLS mobile - GT-DLS1/2 | 2236 0055 |
| Carrying case | 1336 0100 |
| GT-DLS1 connection box | 2236 0001 |
| GT-DLS2 connection box | 2236 0002 |



DuoLine STAR mobile PLUS

Mobile temperature control in grain storage

- Combination of silos and grain stores
- Intuitive Android® app
- Access point with antenna
- Can be retrofitted for existing installations
- Durable components for minimized system costs



Usage area

Fast and reliable delegation of measurement data. Temperature monitoring with DLS mobile PLUS combines the benefits of a flexible solution with the familiar hardware of a smartphone or tablet. The complete system configuration and temperature measurement is done via the app. The proven bus system ensures digital data transmission of the measurement data via the access point with antenna. All DLS components are particularly durable and perfectly matched to one another. DLS mobile PLUS can be used in parallel with existing DLS medium/mobile installations, which can be supplemented with receiver units and wireless measuring probes. The app is designed for temperature measuring systems with a maximum system configuration of 2 silo systems with 22 sensor cables each, 3 grain stores with a total of 255 wireless measuring probes and an external humidity sensor.

Range of functions of the app

Setting up the connection to the access point and to the existing WLAN; Configuration for temperature measurements (sensor cables), temperature queries (wireless measuring probes) and external humidity (optional humidity sensor); Setting of limit temperatures and critical temperature



values; Starting, stopping and saving individual temperature measurements; Optical alarm display when limits are exceeded; Graphical temperature gradient display; Creating PDF logs for saving, printing and sending by e-mail (requires commonly available standard apps)

Measuring feeders

Wireless measuring probes, sensor cables with suspension brackets or floor sockets and a control module. Detailed quotation on request.

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Accessories

| Accessories | Item number |
|---|-------------|
| Access point for DLS mobile PLUS app | 1337 1000 |
| License for DLS mobile PLUS app | 1337 1050 |
| Probe antenna (indoor, range with line of sight approx. 50 m) | 3299 4060 |
| Directional antenna (outdoor, range with line of sight approx. 100 m) | 3299 4012 |
| Control cable (bus cable) | 3234 3151 |





PFEUFFER

temperaturmeßstab

DuoLine STAR soft

Temperature measuring system with PC software

Quick and efficient management of the temperatures in the silo and the grain store

- Simple and intuitive operation
- Graphical display of temperature curves
- Easy installation using bus system
- Integrated database
- Suitable for use in ATEX Zone 20/21



Function

Sensor cables and/or wireless measuring probes with receivers are connected to the DLS soft Gateway via the DuoLine STAR four-wire bus cable. Up to 255 wireless measuring probes can be used per system. The receiver of the grain store reports the detected wireless measuring probes, and the operator moves these to the usage location in the installation plan in the DLS soft PC software using drag & drop. In this way, not only silos but also grain stores with wireless measuring probes can be managed in the new PC software. This includes planning of the fully automatic measuring intervals, convenient evaluation and a graphical display of the installation plan with silos, sensor cables, grain stores and wireless measuring probes. The DLS soft PC software provides you with a complete overview quickly, clearly and efficiently. As well as automatically planned measurements, the current temperature can also be measured with just a click. DLS soft stores all measurements in a database. For documentation purposes, temperature logs can be printed out locally and automatically transmitted by e-mail in PDF format. The PC software is approved for the Windows® 7, 8 and 10 operating systems.



Measuring feeders

Wireless measuring probes with receivers, sensor cables with suspension brackets or floor sockets and a control module

Detailed quotation on request.

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Item

| Model | Item number |
|---|-------------|
| DuoLine STAR soft Gateway | 1336 1000 |
| DuoLine STAR soft Gateway (for 256 control modules) | 1336 1010 |

Accessories

| Accessories | Item number |
|--|-------------|
| External temperature and humidity sensor | 2236 0700 |
| USB relay output | 2236 0750 |



DuoLine STAR link plus

Bus interface for interrogating data for process controllers

The minimized solution for PLC-controlled grain stores.

- Direct access to the DuoLine STAR Bus
- Top hat rail installation
- 24 V power supply
- Suitable for ATEX Zone 20/21



Function

The DLS link plus bus controller provides the ATEX-compliant power supply of the STAR Bus, and is the communication partner for the PLC. The "Measure ID" command is issued via the PLC. The RS232 interface accepts the command and transmits it to the DLS bus. The module which is addressed replies immediately and transfers the current temperatures. 128 temperature measuring sensor cables, 1000 wireless measuring probes (via additional receiver units) and outside temperature and moisture sensors can be read out as standard with DLS link plus. The bus topology can be extended to an almost unlimited extent using an optionally available expansion module for an additional 128 temperature measuring sensor cables or longer cable lengths. The command set includes quick checking for the presence of the modules on the bus, measurement of the temperature measuring sensor cables (with up to 16 sensors), the wireless measuring probes (up to 4 sensors) and the external temperature and humidity sensors. The data that is determined can be processed directly for the system visualization in a higher-order process control system (PLC, WinCC, SCADA). Because of the top hat rail design, the bus controller is very easy to integrate in almost any environment.



Detailed quotation on request.

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Item

| Model | Item number |
|--|-------------|
| DuoLine STAR link plus basic modul (128 modules) | 1336 2000 |
| DuoLine STAR link plus extended module (256 modules) | 1336 2010 |
| Wide-area power supply | 3250 8036 |

Accessories

| Accessories | Item number |
|--|-------------|
| External temperature and humidity sensor | 2236 0700 |



Sensor cables

Measuring feeders for concrete and steel silos

Temperature sensors for the DuoLine STAR measuring systems

- Suitable for use in ATEX Zone 20/21
- Suspension bracket or floor socket
- Up to 15 temperature sensors on one measuring line
- Maximum measuring line length: 60 m



System

A sensor cable is attached in the silo in one or more locations for recording temperatures at different heights in a conventional grain silo. A sensor cable consists of a sensor cable head, a control module, a hollow cable with a measuring line and a conical tip. The control module is pre-wired in the factory. Up to 128 sensor cables (optionally 256 or 512 sensor cables) can be connected to the DLS temperature measuring system.

Variants

High-performance sensor cable with suspension bracket for fitting to supports, gangways and roof struts. High-performance sensor cable with floor socket for fitting to the silo roof or for casting in the concrete ceiling. The floor socket is a dust-tight housing which accommodates the sensor cable head with round control module. Instead of a floor socket, a distribution box can be used to accommodate a round or rectangular control module. Several control modules can be accommodated in a large distribution box. Distribution boxes for bus cables are also available.



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Item

| Model | Item number |
|---|-------------|
| Sensor cable suspension bracket, 10 m, 6 measuring points | 1357 0310 |
| Sensor cable suspension bracket, 20 m, 6 measuring points | 1357 0620 |
| Sensor cable floor socket, 10 m, 3 measuring points | 1359 0310 |
| Sensor cable floor socket, 20 m, 6 measuring points | 1359 0620 |

Accessories

| Accessories | Item number |
|-----------------------------|-------------|
| Distribution box | 2236 0003 |
| Floor socket, concrete silo | 2136 8203 |
| Floor socket, steel silo | 2136 8204 |
| Control cable (bus cable) | 3234 3151 |

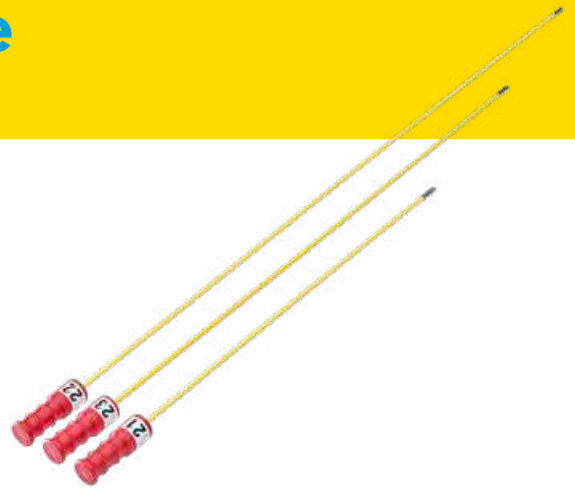


Wireless measuring probe

Data transmission via radio to a receiver

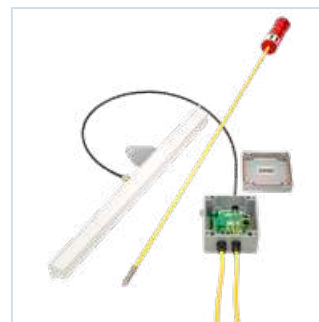
For the DuoLine STAR soft and link measuring systems

- ▶ Long radio range
- ▶ 4 measurements per hour
- ▶ Battery service life: >5 years (easy to change)
- ▶ Fully compatible with existing systems
- ▶ Up to 255 wireless measuring probes per system



System

Temperature measuring probes can be equipped with up to four temperature sensors. The flexible GRP material and the ergonomically shaped handle of the measuring probe make insertion into the bulk material easier. An LED which flashes during measurement is integrated in the handle for function checking purposes. There are no interfering cables which have to be unrolled and cleared away again. The measuring probes do not need to be assigned to receivers. The grain store receiver reports the detected wireless measuring probes, and the operator moves these to the usage location in the installation plan in the DLS soft PC software using drag & drop. The distance between the measuring probes can be varied. The wireless measuring probes transmit the measuring data (temperatures, ID number and battery status) to a receiver every 15 minutes. The receiver recognizes the assigned ID number and is connected to the DLS soft Gateway via the DLS bus cable. The current measuring data is transmitted whenever it is requested by the DLS soft PC software. A receiver covers a range of approx. 40x100 m with the supplied antenna.



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Item

| Model | Item number |
|---|-------------|
| Wireless measuring probe, 2 m, 2 sensors | 1337 0202 |
| Wireless measuring probe, 10 m, 4 sensors | 1337 0410 |

Accessories

| Accessories | Item number |
|---------------------------|-------------|
| Receiver | 1337 0000 |
| Control cable (bus cable) | 3234 3151 |



Temperature measuring probe

Measuring feeder for flat stores, grain stores and boxes

DuoLine STAR mobile, medium and GTM 800 measuring systems

- Robust design
- High flexibility
- Up to 4 temperature sensors
- Fill height max. 12 m
- Available up to 10 m in length

System

Temperature measuring probes can be equipped with up to four temperature sensors. The flexible GRP material and the ergonomically shaped handle of the measuring probe make insertion into the bulk material easier. The measuring probes are set step by step when the grain store is being filled and brought in after filling. The distance between the measuring probes can be varied. There is a 5-pin DIN socket on the handle for connecting the measuring cable for transferring the measurements.



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Item

| Model | Item number |
|--|-------------|
| Temperature measuring probe, 2 m, 2 sensors | 1332 0202 |
| Temperature measuring probe, 10 m, 4 sensors | 1332 0410 |

Accessories

| Accessories | Item number |
|--|-------------|
| Connection cable for measuring probes 5 m | 2233 0105 |
| Connection cable for measuring probes 25 m | 2233 0125 |



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Pfeuffer: Technology for professional quality assessment

As an internationally active specialist for sampling and grain measurement technology, we have over 75 years of experience in equipment for agriculture, trade, mills, mixed feed plants, seed cultivation, malting plants and breweries. Our product portfolio covers the entire area of grain quality control. The vertical integration of our company - from development and production via marketing to system maintenance - offers you the highest levels of quality, precision and security of investment.

Do you have questions or wish for further information?
Call us or send us an email, we would be happy to help you.



The quality management of our design, development and production is certified according to ISO 9001:2015.



We develop, design and construct all of our products in-house.

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