Artikelnummer Betriebsanleitung:
Article no. operating instructions: **1337 9101**

PFEUFFER

Operating instructions

DuoLine mobile PLUS

Mobile temperature measurement in silo and grain store

Access point and Android® application

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Edition 1/21.11.2019
Translation of the original operating instructions

These operating instructions form part of the DLS temperature monitoring system, and must be made available to the operating personnel at all times.

The Pfeuffer GmbH has prepared and reviewed these Operating Instructions with the greatest care. However, no guarantee is made for its completeness or accuracy.

Subject to technical modifications.

Translation

In the event of delivery of subsequent sale to the countries of the European Economic Area (EEA), the operating instructions must be translated into the corresponding language of the country of use.
In the event of discrepancies in the translated text, the original operating instructions (German) must be used for clarification, or the manufacturer must be contacted.

Operating instructions in electronic format

The original operating instructions (German) and translations of the original operating instructions can be requested as PDF files by e-mail: doku@pfeuffer.com
Specifying the correct type designation and serial number is important for further processing!

Copyright

Contents

1 Access point

1.1 Designated use

The DLS access point is a central evaluation unit for a DuoLine STAR temperature monitoring system in conjunction with the DLS mobile PLUS App for mobile end devices (Android® smartphone/tablet).
It sends the measurement data received from the DLS bus from sensor cables and wireless measuring probes to the App.
Sensor cables with control modules can be connected directly without additional accessories, wireless measuring probes require a receiver unit. The access point can be combined with existing evaluation units DLS soft/link and DLS medium.
The storage and evaluation of the measurement data and the configuration of the access point is carried out on the mobile end device with the DLS mobile PLUS application.

EXPLOSION PROTECTION

The access point is not approved for use in EX zones!

If you have questions, please contact Pfeuffer GmbH.

The access point is designed for a fixed surface-mounted wall mounting with mains plug.

Private use of the access point is not allowed.

NOTICE

The access point is exclusively intended for the aforementioned purpose.

Any other use beyond this definition, or conversion of the access point without written consultation with Pfeuffer GmbH, is regarded as not in accordance with the designated use. Pfeuffer GmbH will not be liable for any damage resulting from this! The risk is the responsibility of the owner alone.

The access point is only allowed to be taken into operation if it can be ensured that all safety devices are functioning.

The designated use also includes complying with the operating instructions as well as the maintenance and servicing conditions as defined in these operating instructions.

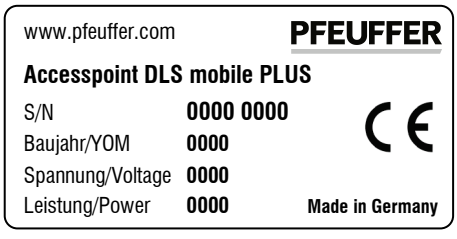
These operating instructions do not release the owner from its responsibility to develop and apply, or have applied, health and/or safety regulations appropriate for the requirements of the overall system, and to monitor compliance with the same.

1.2 Identification

The type plate with the type designation can be found on the rear panel and in the covers of the housing.

It is important for all questions to specify the correct type designation, serial number and year of manufacture. Only in this way will rapid processing be possible.

Example for a Pfeuffer GmbH type plate:



1.3 Declaration of Conformity

EC/EU Declaration of Conformity

In accordance with the EC/EU Directives:

- Low voltage
- Electromagnetic compatibility (EMC)
- Radio equipment (RED)

Manufacturer: **Pfeuffer GmbH**
Flugplatzstraße 70
97318 Kitzingen
GERMANY

Person authorized to compile the technical documents: Lothar Pfeuffer, General Manager

Product: **DuoLine STAR access point**

Serial number: _____

The aforementioned product complies with the requirements of the following relevant directives:

Directive / standard	Title
2014/35/EU	EU directive: Low voltage
2014/30/EU	EU directive: Electromagnetic compatibility (EMC)
2014/53/EU	EU directive: Radio equipment (RED)

Any modification to the access point not agreed with us shall result in this declaration becoming null and void.

Kitzingen, _____ _____
Lothar Pfeuffer, General Manager

1.4 Structural features of the danger notes

The operating instructions from Pfeuffer GmbH contain instructions that you must comply with for your personal safety as well as to avoid damage to property. The instructions for your personal safety are highlighted by a warning triangle.

Comply with the following categories of danger notes and explanations of symbols:

Pictogram

⚠ SIGNAL WORD

Type of danger and its source

Possible consequence of failure to comply

⇨ Measure to guard against the danger.

⚠ DANGER

This is a warning about a highly dangerous situation that will lead to serious or fatal injuries.

⚠ WARNING

This is a warning about a dangerous situation that may result in serious or fatal injuries.

⚠ CAUTION

This is a warning of a possibly dangerous situation that will lead to slight or moderate injuries.

NOTICE This is a warning about harmful situations for the product and/or environment.

1.5 Pictograms in the operating instructions

	Comply with the operating instructions		Warning
	Notes of particular importance and/or additional information		Warning of electrical voltage
	Pull out mains plug		Recycling marking – Supply refuse for recycling
	Protective earth connection		

1.6 Safety

Electrical connections

The connections of the access point to the electrical power supply are the responsibility of the customer/operator and should only be carried out by a **qualified electrician**.

Radio disturbance and interferences

Radio interference can be generated by any device that emits electromagnetic signals. Due to the large number of devices that transmit and receive radio waves, interference from superimposed radio waves can occur.

⇨ Do not use the access point in places where the use of radio equipment is prohibited.

1.6.1 General safety notes

The safety equipment and safety notes described in these operating instructions must be complied with.

1. Disconnect the access point from the power supply in case of emergency or malfunction by disconnecting the mains cable from the electrical power supply.
2. Secure the mains cable appropriately against unauthorized reconnection by placing it where it can be monitored continuously.
3. Do not allow the access point to get wet during transport, storage, cleaning and operation.
4. Make sure that the access point is only operated when in correct working order.
5. Never touch the mains cable with moist hands.
6. Only use genuine spare parts and accessories

1.6.2 Safety tests

Pfeuffer GmbH carried out the following safety tests at the factory:

Testing and checking according to DIN EN 60204-1:

⇨ Check that the electrical equipment is in compliance with the technical documentation.

⇨ Continuous connection of the protective earth system

⇨ Insulation resistance tests

⇨ Voltage tests

⇨ Protection against residual voltages

⇨ Function tests

The functions of the electrical equipment, in particular those relating to safety and protective measures, have been tested.

1.6.3 Residual dangers in connection with the access point

⇨ During all work on electrically operated components, pay attention to dangers from electrical current.

1.7 Technical data

1.7.1 Access point

Power supply	85-264 V, 50/60 Hz
Power	130 VA
Bus voltage	24 V
Index of protection housing	IP54 according to DIN EN 60529
Weight	approx. 760 g
Dimensions without antenna	approx. 220x220x40 mm
Ambient temperature	+5 °C to +40 °C
Storage temperature	-10 °C to +60 °C

1.7.2 Indoor antenna – Push-on antenna with articulated joint

Ambient temperature	–
Frequency	2.4 to 2.48 GHz
Polarization	vertical
Weight	approx. 42 g
Dimensions	approx. Ø 13x385 mm
Index of protection	–

1.7.3 Outdoor antenna (type Interline Sector V70, 12dBi), option

Ambient temperature	-40 °C to +80 °C
Frequency	2.36 GHz to 2.5 GHz
HPBW / vertical	20 °
HPBW / horizontal	72 °
Weight with holder	approx. 600 g
Dimensions without holder	104x338x23 mm
Index of protection	IP64 according to DIN EN 60529

1.8 Positioning

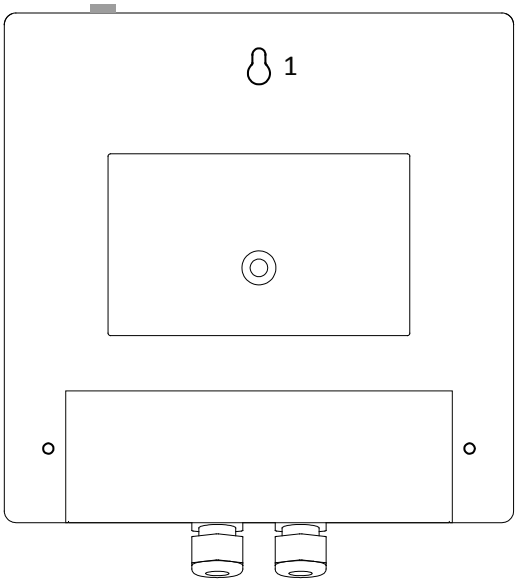
When positioning the access point, it is important to find a location that does not limit the range of the radio network from the outset. You can orient yourself on the following points:

1. If possible, position the access point in a centrally located, low-dust, heated room (control center, office). The access point has an omnidirectional antenna. The radio signal is therefore radiated spherically in all directions. Optionally, an external WLAN directional antenna can also be connected, see **chapter 1.11.2.**
2. Do not position the access point directly in the corner of a room.

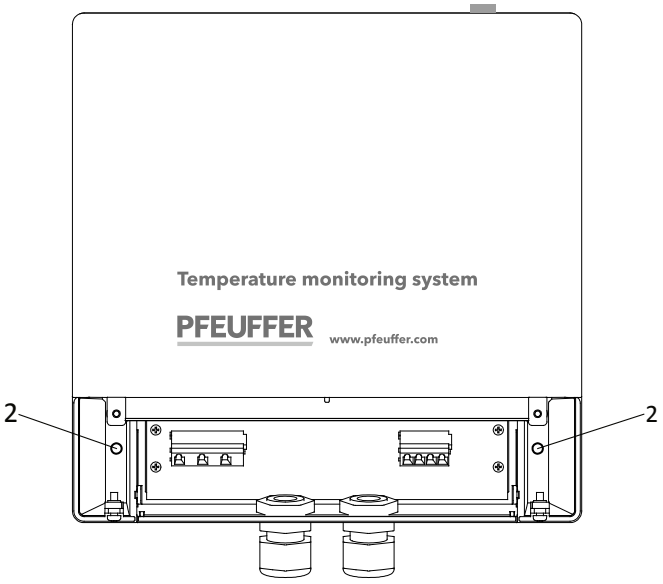
3. Position the access point as freestanding as possible, i. e. not directly behind or under an obstacle, such as a cabinet or heater.
4. Position the access point as high up in the room as possible. The mounting height must be selected so that the bus cable and power supply (socket) connections are easy to handle and there is enough space for the antenna to be aligned.
5. Position the access point so that there are as few obstacles as possible between it and the mobile device. Even small objects in the immediate vicinity of the access point can greatly reduce the propagation of the radio signal. Metallic or water-containing objects, such as radiators, a refrigerator or houseplants, significantly reduce the quality of the radio signal. Plasterboard panels and modern windows with multiple glazing can also strongly slow down the radio signal.
6. Position the access point away from other wireless transmitters, such as microwave, wireless speaker or Bluetooth device.
7. Ensure sufficient air circulation around the access point.
8. Do not cover the access point.
9. Maintain normal office working conditions.

1.9 Assembly

In accordance with the points in **chapter 1.8** mount the access point using the three flat-head clamping plate screws 4.0x30 mm and the matching nylon anchors Ø 5.0x25 mm included in the scope of delivery.
On the rear panel of the access point there is a suspension keyhole (item 1) and on the front side under the lower cover there are two drill holes (item 2).



Access point rear panel



Access point front side

1.10 Connect bus line and power supply

The connections of the access point to the electrical power supply and to the bus line are the responsibility of the customer/operator.
The connection to the electrical power supply must be made with a mains plug.

DANGER

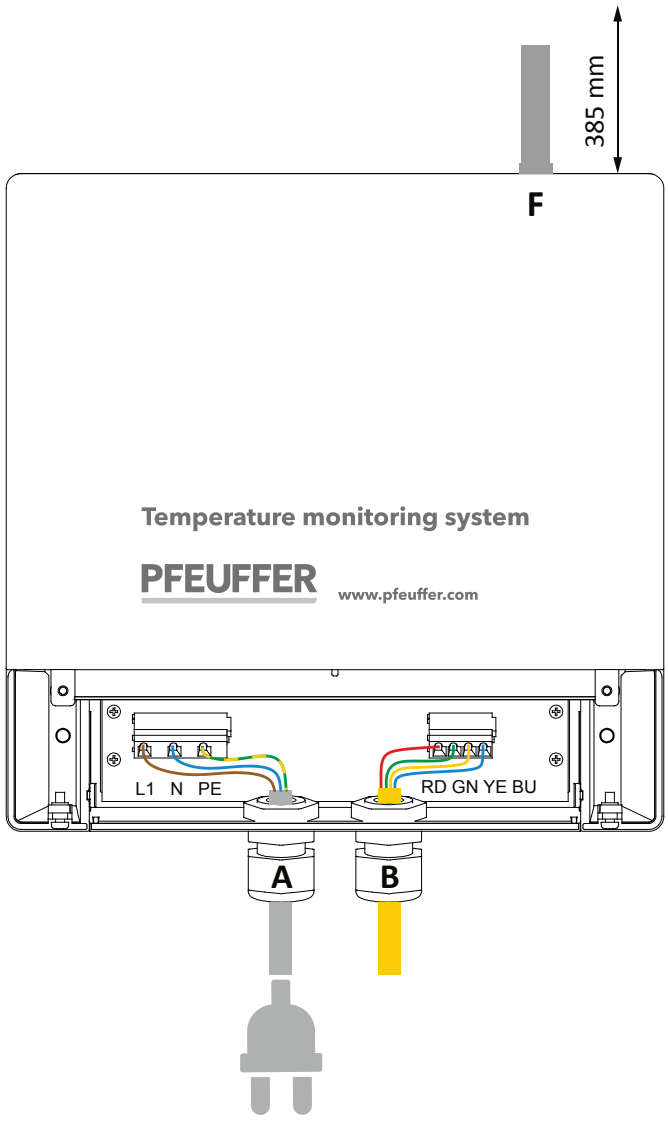
Touching live parts can be fatal!

- ⇨ Have all electrical connections installed and checked by an electrician!
- ⇨ The power connection must be made in Germany according to DIN VDE 0100 (international IEC 60364).

- ⇨ Do not open any firmly screwed covers from the housing of the access point.
- ⇨ The access point is only allowed to be connected to a socket earthed in accordance with the regulations, using a protective conductor.

- ⇨ Disconnect the access point from the power supply in case of emergency or malfunction by disconnecting the mains cable from the electrical power supply.

⇨ Open the bottom cover at the access point and connect the cables as follows:



Access point front side – interfaces

Cable connection **A** – power supply:

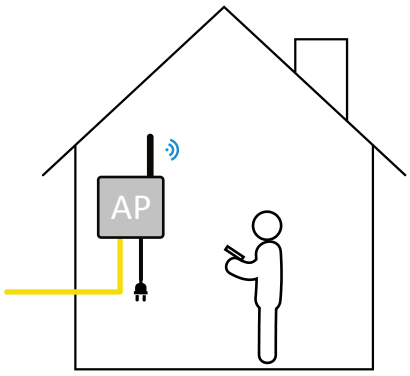
Designation	Wire color
L1	BN
N	BU
PE	GNYE

Cable connection **B** – bus line:

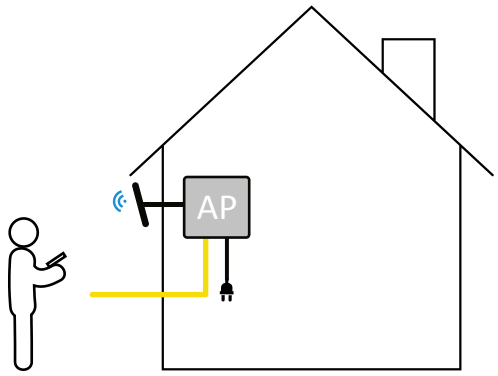
Designation	Wire color
+ 24 V	RD
Bus H	GN
Bus L	YE
GND	BU
Not used	GY, BN, WH, BK, GNYE

Connection **F** – antenna, see **chapter 1.11.**

1.11 Antennas



Access point (AP) with indoor antenna



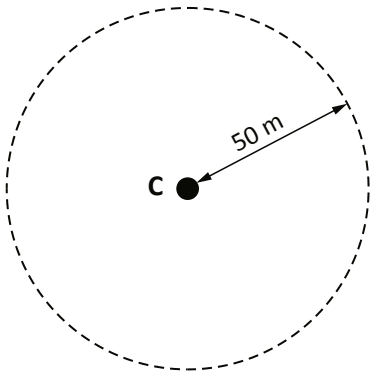
Access point (AP) with outdoor antenna

1.11.1 Mounting indoor antenna

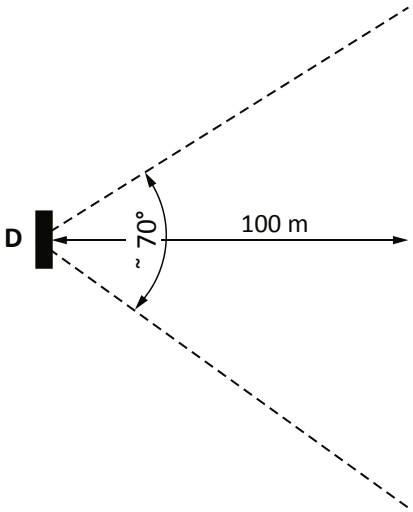
Omnidirectional rod antenna – range approx. 50 m.

The indoor antenna with RP SMA connector is directly connected and screwed into place to the SMA socket on the access point housing.

Ranges as plan view:



C = Omnidirectional rod antenna



D = Directional antenna (option)

1.11.2 Mounting outdoor antenna (option)

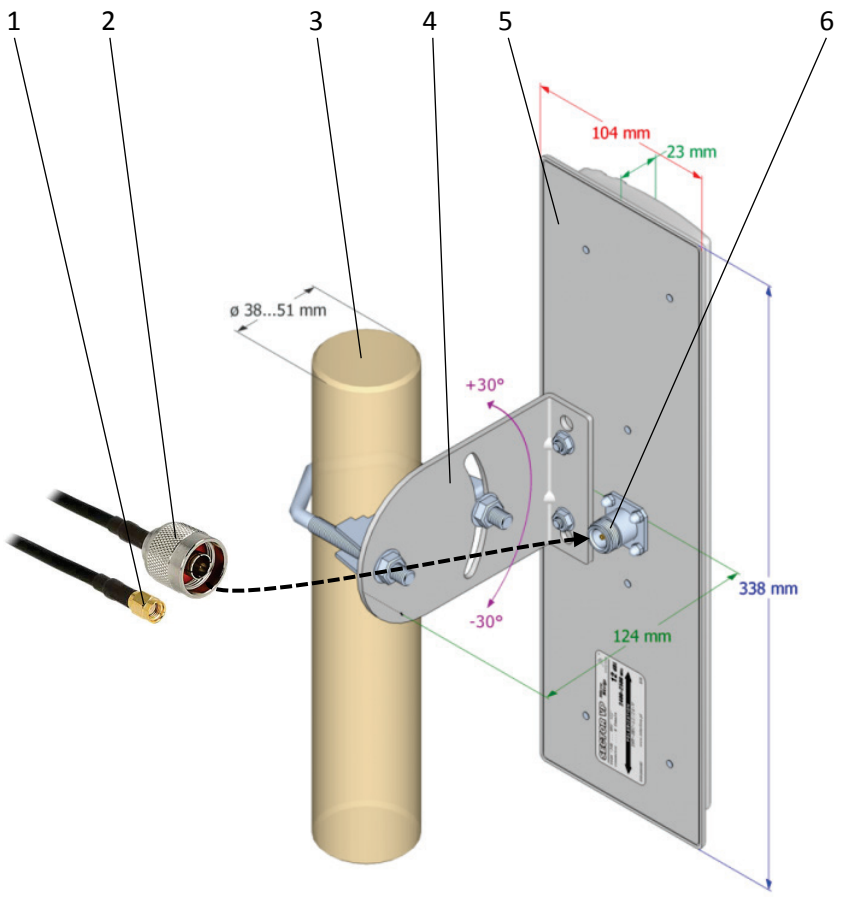
Directional antenna – range approx. 100 m.

The antenna is mounted on an external wall, for example. For a reliable radio connection/data transmission, the free line of sight to the antenna must be taken into account during installation. No buildings, crossways and roof structures are allowed to interfere with or interrupt the wireless connection.

Correct installation of the mast, the antenna and the coaxial cable ensure stable and proper operation of the antenna system. The mast (pipe) must be erected by the customer.

⇨ Mount the antenna front panel (side without nameplate and N socket backwards, ventilation hole downwards) on the bracket included in the scope of delivery, see following figure.

⇨ Mount the holder with the antenna to the mast.



Mount antenna

Item	Designation
1	Coax cable, RP SMA plug connector
2	Coax cable, N plug connector
3	Mast
4	Holder (accessory antenna)
5	Antenna
6	N socket, connection for item 2

⇨ Mount the antenna at a sufficient height.

⇨ For reliable reception of all wireless measuring probes, set the holder for the antenna at a slight angle. This fine adjustment of the antenna ensures the correct propagation of the radio signals.

⇨ Connect the enclosed coaxial cable with the N plug connector to the antenna and screw on the connector.

⇨ The RP SMA connector is directly connected and screwed into place to the SMA socket on the access point housing.

NOTICE The coaxial cable must not be bent during installation. There is a risk of cable breakage!

1.12 Maintenance and cleaning

DANGER

Touching live parts can be fatal!

Before cleaning, maintenance or repair work, the access point must be disconnected from the electrical power supply.

→ Otherwise, electric shocks or short circuits may result.

NOTICE	Opening the housing and inappropriate operation will invalidate the warranty.

1.12.1 Cleaning

NOTICE	Do not use any sharp objects or tools for cleaning. Only use objects that are expressly intended for this purpose. During cleaning, make sure that no water, steam or dust can penetrate the electronics area.

Cleaning	Rectification	Interval
Access point housing and antenna	With a clean, dry and lint-free cloth.	**As required**

1.12.2 Maintenance

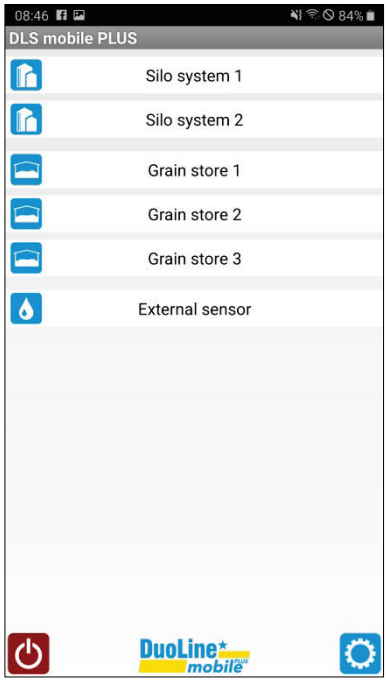
The access point is maintenance-free.

2 Application DLS mobile PLUS

2.1 Install app

Our DLS mobile PLUS app is now available on Google Play®.

2.2 Maximum system configuration



No. of silo systems	1 – 2
No. of sensor cables with control module per silo system	1 – 22 (Silo system 1 ID 1 – ID 22) (Silo system 2 ID 23 – ID 44)
No. of temperature sensors per sensor cable	1 – 16
No. of grain stores	1 – 3
No. of wireless measuring probes	1 – 255 (ID 1 – ID 255)
No. of temperature sensors per wireless measuring rod	1 – 4
No. of receiver per grain store	1 – 4
No. of external humidity sensor	1

The app offers the following functions:

Silo system and grain store:

- Manual measurement of silo, grain store and external humidity sensor.
- If the limit value is exceeded, the measurement results are displayed in color and an optical alarm is displayed.
- Save, print and send the measurement data in a PDF print protocol.

  The PDF files are saved in your mobile device in My Documents → Documents → PFEUFFER.
- Storage of the measurement data on the mobile device as TXT file for further processing with e. g. Excel®, etc.

  The TXT files are saved in your mobile device in My Documents → Documents → Siloanlage 1-2 or Schuetthalle 1-3.
- Display of a temperature gradient as a curve (can be zoomed and scrolled).

Silo system:

In the silo only sensor cables with control modules are measured.

- Settings:
  - Number of sensor cables (control modules) per silo system
  - Number of temperature sensors in one sensor cable
  - Limits (setting of temperature limits and critical temperatures per silo system)
- The measurement data is received and displayed.

Grain store:

In the grain store only wireless measuring probes are measured.

- Settings:
  - Receiver ID
  - Real time clock (time, date for the corresponding receiver)
  - Limits (setting of temperature limits and critical temperatures per grain store)
- Automatic recognition of the number of wireless measuring probes and the number of temperature sensors per wireless measuring probe.
- The measured data (temperatures + battery voltage) are collected and displayed by the receiver.

Humidity sensor:

- The measured data are received and displayed (external temperature, external humidity and dew point).

2.3 Hardware components according to scope of delivery

- Access point with evaluation electronics and software in plastic housing.....1337 1000
  - Setting up the access point in the app, see **chapter 2.6.2.**
  - Assembly of the access point, see **chapter 1.9.**
- Indoor antenna for access point 3299 4060

  Option:
- WLAN sector antenna 2.54 GHz; 12 dBi.....3299 4012
- Antenna holder angle galvanized 15x25 cm 3299 4013
- Coaxial antenna cable RF-240; 2 m long 3299 4014
- Sensor cables with control module and/or
  wireless measuring probes, receiver with antenna depending on system configuration
- External humidity sensor
- Bus line

Installation of the sensor cables, see operating and installation instructions DLS medium, soft/link.

Installation of the wireless measuring probes and receivers, see operating and installation instructions DLS soft with wireless measuring probes.

2.4 System requirements

Android® smartphone/tablet version 4.X or higher

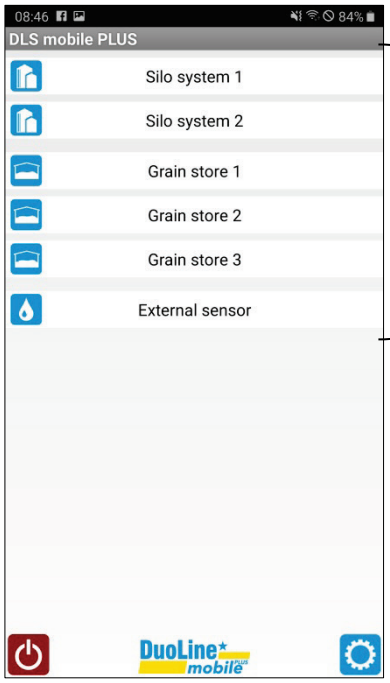
2.5 Symbol explanation

Icon	Description
	Settings
	Silo systems
	Grain store
	Access point
	External sensor
	Start measurement
	Stop measurement
	Save settings
	First data set
	Last data set
	Display temperature gradient as curve (zoom and scroll possible)
	Real time clocks: Setting date and time in the receiver
	Reading out the date/time of the selected receiver
	Importing another date/time
	Imprint
	Alarm for exceeding limit values (colors critically measured sensor cables or wireless measuring probes red). Only optical display, no operable function.
	Output of measurement data as PDF (saving, sending and printing of PDFs possible *)
	Exit App

* Additional apps from other providers are required for these functions.

The appearance of the screenshots can vary with different mobile devices and versions.

2.6 Start menu

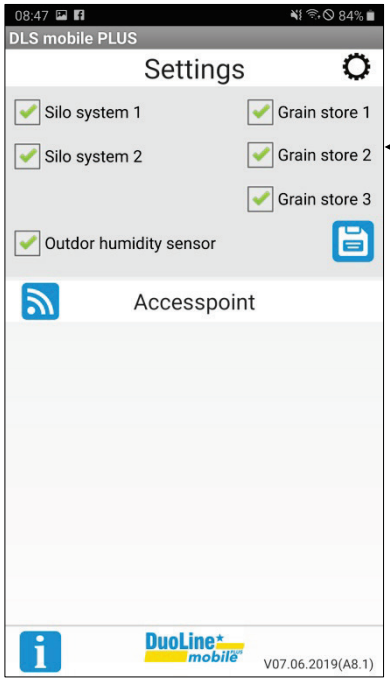


Selected system configuration
Here in the example the maximum configuration

Exit App

Settings start menu

2.6.1 Start menu settings



Define system configuration

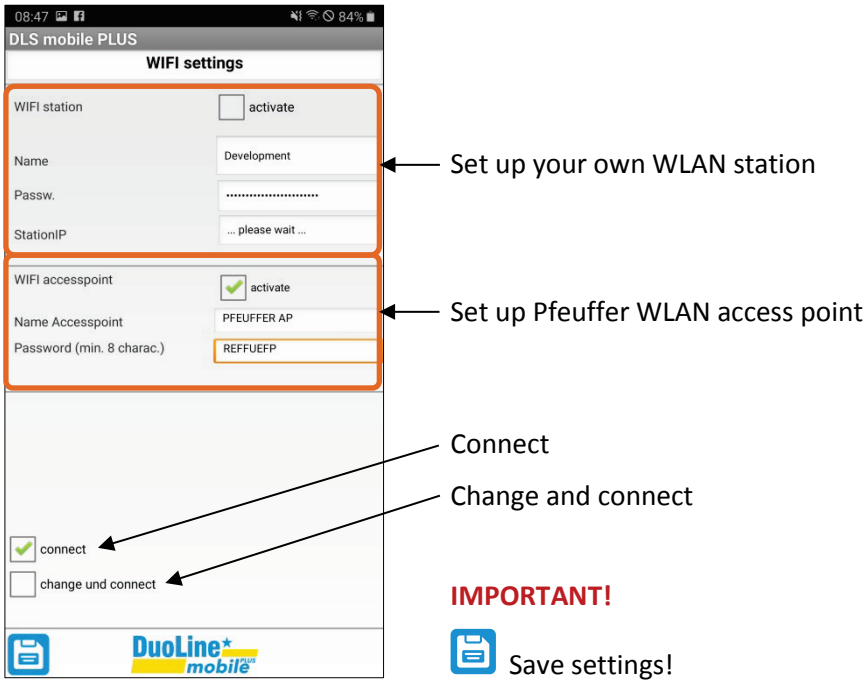
IMPORTANT!

Save selection of system configuration!

Settings access point

Imprint

2.6.2 Settings access point



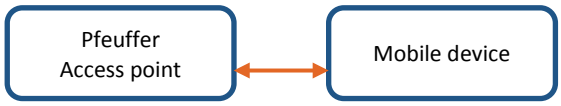
With **Change and connect** you can change the name for the access point "PFEUFFER AP" and the password (**min. 8 characters**).

Pfeuffer GmbH recommends that you assign your own name and password for the access point. Please document your entries carefully!

If you want another mobile device to access the access point (max. 2 units), you must enter these changed details in the app of the other device.

Simultaneous measurement of two mobile devices is not possible. The bus line can only ever be occupied by one mobile device or an evaluation center DLS medium, soft/link = status message "**Bus busy !**". When the bus line is free again, "**Bus free !**" is displayed.

2.6.3 Setup Pfeuffer access point



Activate WLAN access point

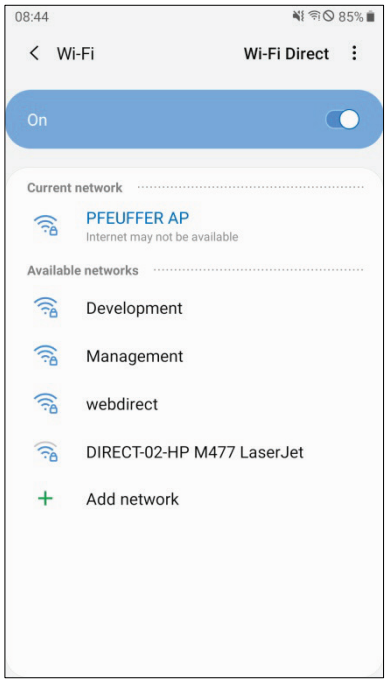
Enter name:
PFEUFFER AP

Enter password:
REFFUEFP (enter min. 8 characters)

Select **connect**

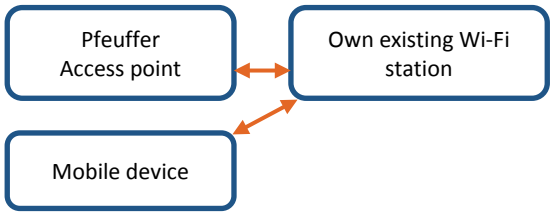
IMPORTANT!

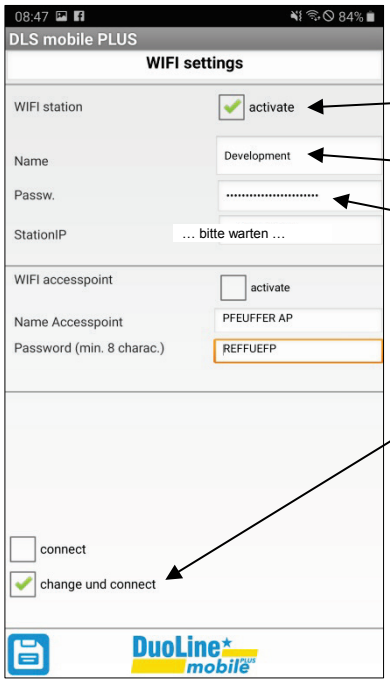
Save settings!



In your mobile device, select the PFEUFFER AP under Settings → Connections → Available Networks. It then becomes the current network.

2.6.4 Setting up your own WLAN station



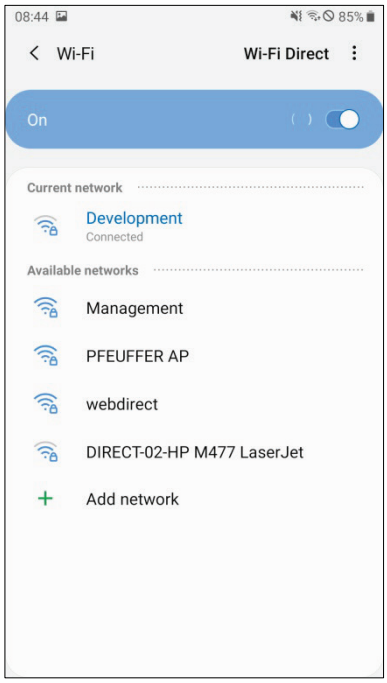


Process:

1. Activate WLAN station
2. Enter the name of your own WLAN
3. Enter your own password
4. Select **Change and connect**

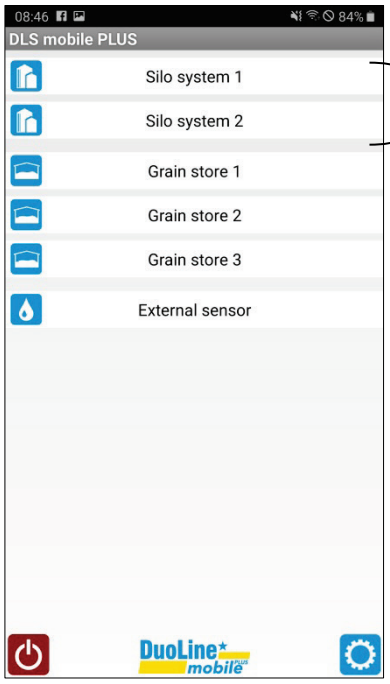
IMPORTANT!

5. Save settings!
6. Please wait … the IP address is requested.



In your mobile device, select your own WLAN under Settings → Connections → Available Networks (in this example: Development). It then becomes the current network.

2.7 Silo system



In the silo only sensor cables with control modules are measured.

Select a silo system

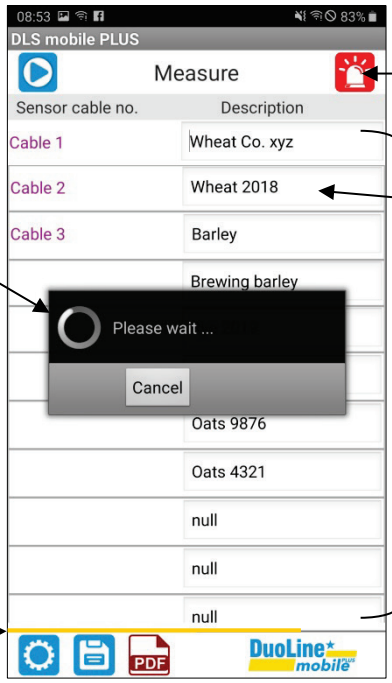
2.7.1 Measure silo system

Start measurement

This can take some time (depending on the number of sensor cables to be measured)

Colored temperature display:
Green = OK
Purple = critical
Red = limit

The progress of the measurement is indicated by a yellow bar



Alarm symbol
Display only when limit value is exceeded (critical and limit)

Enter description, e. g. stored product

No. of sensor cables

Configuration silo system

PDF Output of the current print protocol of the measurement data as a PDF file

IMPORTANT!

Save settings!

If another bus master (second mobile device or DLS medium, soft/link) simultaneously performs a measurement, "**Bus busy !**" is displayed. This means that the bus line is busy. Wait some time until the bus line is free again and restart the measurement.

If the measuring menu is permanently open, the access point terminates the connection after a certain time. For new measurements, always leave the measuring menu, select silo system again and measure.

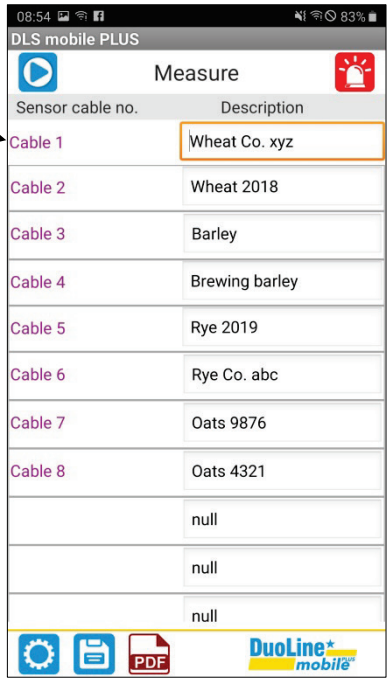
The TXT files with the measurement data are stored in your mobile device in My Documents → Documents → Siloanlage 1-2 or Schuetthalle 1-3.

The PDF files are saved in your mobile device in My Documents → Documents → PFEUFFER.

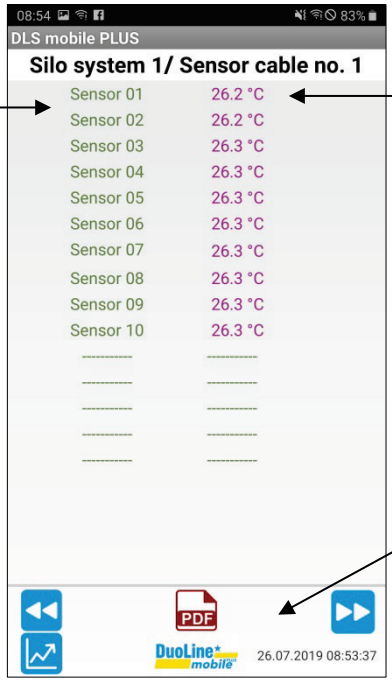
2.7.2 Display temperature

Display of e. g. silo system 1/sensor cable no. 1:

Tip on sensor cable no. 1



Here in the example:
The sensor cable no. 1
has ten temperature sensors



Colored temperature display:
Green = OK
Purple = critical
Red = limit

100 °C = Sensor defective or not correctly positioned in the control module

-50 °C = Sensor not positioned

First data set

Last data set

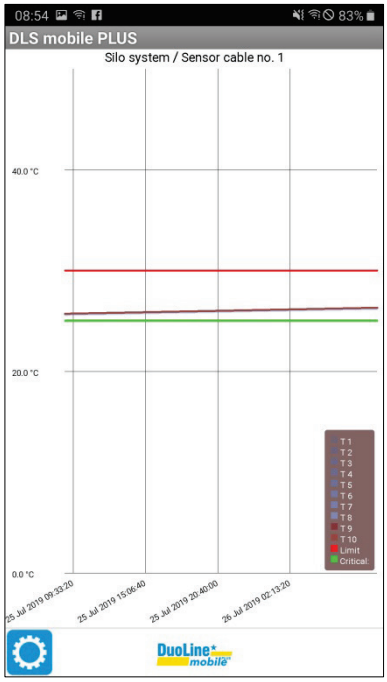
Temperature gradient

Output of the current print protocol of the measurement data as a PDF file

Scrolling to the previous/next data set is only possible here in the lower control panel.

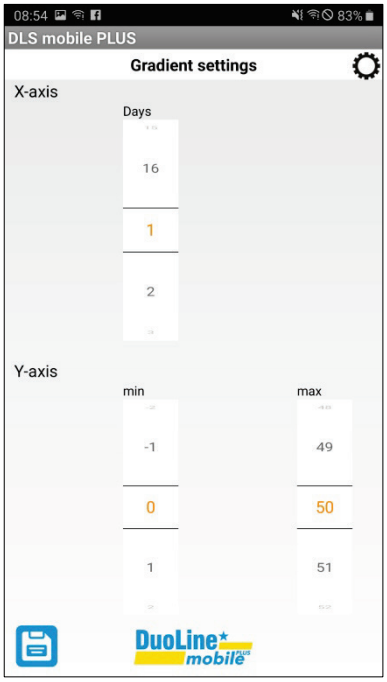
2.7.3 Display temperature gradient

Temperature gradient:



Setting the axis

Setting the axis



IMPORTANT!

Save settings!

PDF print protocol:

DuoLine mobile PLUS

26.07.2019 08:53:37

Date / Signature

Description	System	ID No.	Sensor no.: temperature °C 1	2	3	4	5	6	7	8	9	10
Wheat Co. xyz	1	1	26.2	26.2	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
Wheat 2018	1	2	26.3	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4
Barley	1	3	26.4	26.4	26.4	26.5	26.5	26.5	26.5	26.5	26.5	26.5
Brewing barley	1	4	26.4	26.5	26.5	26.5	26.5	26.5	26.6	26.5	26.5	26.5
Rye 2019	1	5	26.5	26.5	26.5	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Rye Co. abc	1	6	26.5	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Oats 9876	1	7	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Oats 4321	1	8	26.6	26.6	26.6	26.6	26.6	26.7	26.6	26.6	26.6	26.7

The print protocol in PDF format can be saved, printed and sent. Other provider apps may be required for these functions.

2.7.4 Configuration silo system and setting the limit

Silo system 1:

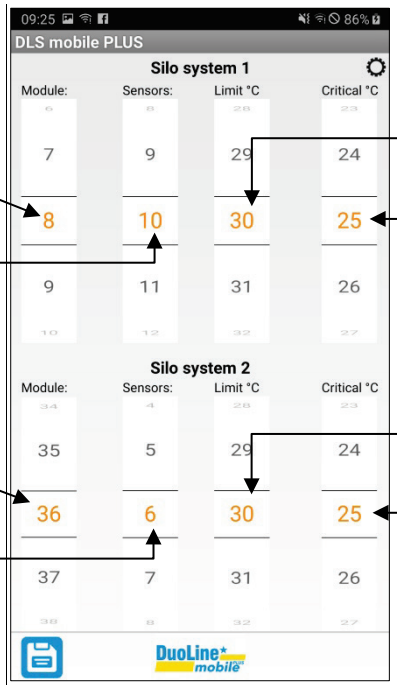
No. of control modules/sensor cables for silo system 1 (ID 1 to ID 22)

No. of temperature sensors per sensor cable

Silo system 2:

No. of control modules/sensor cables for silo system 2 (ID 23 to ID 44)

No. of temperature sensors per sensor cable



Silo system 1:

Temperature limit [°C]

Critical temperature [°C]

Silo system 2:

Temperature limit [°C]

Critical temperature [°C]

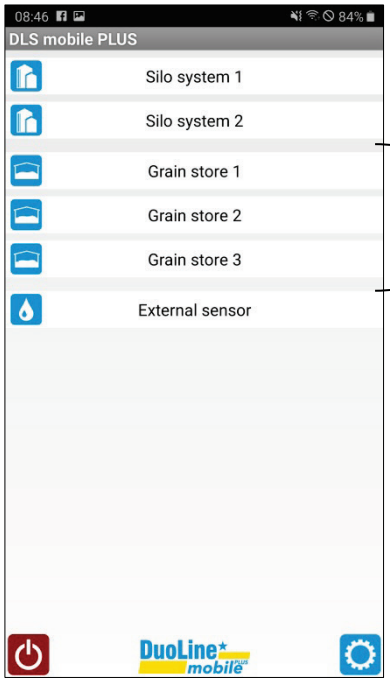
IMPORTANT!

Save settings!

If there are six control modules/sensor cables in **silo system 2**, for example, ID 28 must be set for modules.

All settings are only accepted when you call up the respective silo system again.

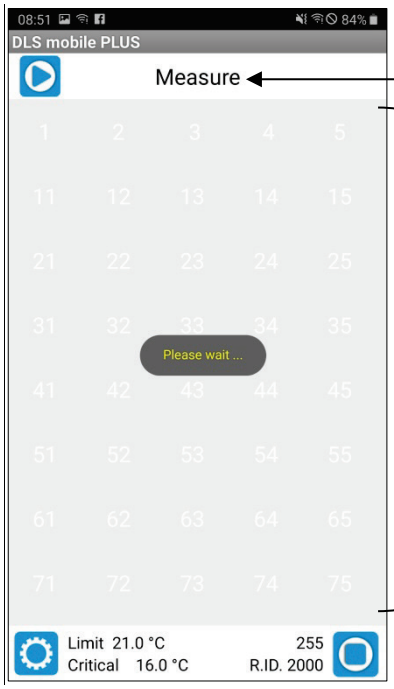
2.8 Grain store



In the grain store only wireless measuring probes are measured.

Select a grain store

2.8.1 Measure grain store



Start measurement

or collection of the measurement data, this can take some time (depending on the number of wireless measuring probes).

Please wait …

ID numbers of the wireless measuring probes

Scroll in the field in all directions to display all 255 wireless measuring probes.

Configuration grain stores

Stop/cancel current measurement.

The receivers receive measurement data from the wireless measuring probes every 15 minutes. Only the last transmission is ever stored in the receiver. When the measurement data is retrieved via the mobile device or the evaluation center (DLS soft/link), the internal memory of the receiver is deleted. The new measurement data can only be retrieved after more than 15 minutes have elapsed.

If the measuring menu is permanently open, the access point terminates the connection after a certain time. For new measurements, always leave the measuring menu, select grain store again and measure.

If another bus master (second mobile device or DLS soft/link evaluation centre) simultaneously collects the measurement data, "**Bus busy !**" is displayed. This means that the bus line is busy. Wait at least 15 minutes and restart the collection of the measurement data.

The TXT files with the measurement data are stored in your mobile device in My Documents → Documents → Siloanlage 1-2 or Schuetthalle 1-3.

The PDF files are saved in your mobile device in My Documents → Documents → PFEUFFER.

Example:

The measurement data were successfully collected from 35 wireless measuring probes. No limit values exceeded.

Touching an ID number opens up an overview of the individual temperature sensors in a wireless measuring probe, see **chapter 2.8.2.**

Alarm symbol
Display only when limit value is exceeded (critical and limit)

The measurement data were successfully collected from all 35 wireless measuring probes.

At two wireless measuring probes the temperature is critical and at two the limit is exceeded.

Colored temperature display:
Green = OK
Purple = critical
Red = limit
White = not available/recognized

Set temperature values for limit and critical.

Displays the wireless measuring probe ID and receiver ID where measurement data is currently being retrieved

2.8.2 Display temperature in one wireless measuring probe

ID no. of wireless measuring probe

Der Funkmessstab mit der ID 22 hat 4 Temperatursensoren

Battery voltage

Green = OK

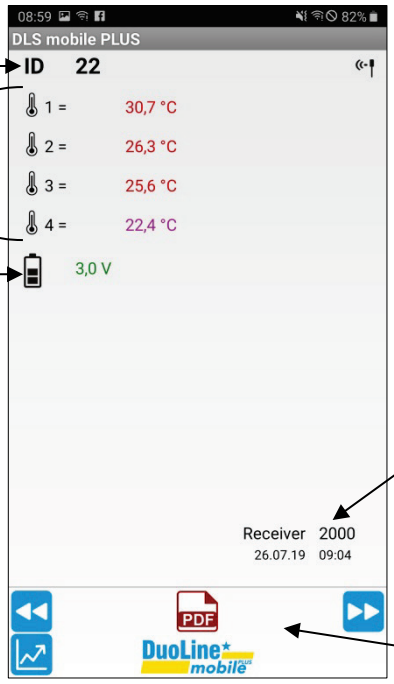
Red = Change battery

First data set

Last data set

Temperature gradient

Output of the current print protocol of the measurement data as a PDF file



Colored temperature display:

Green = OK

Purple = critical

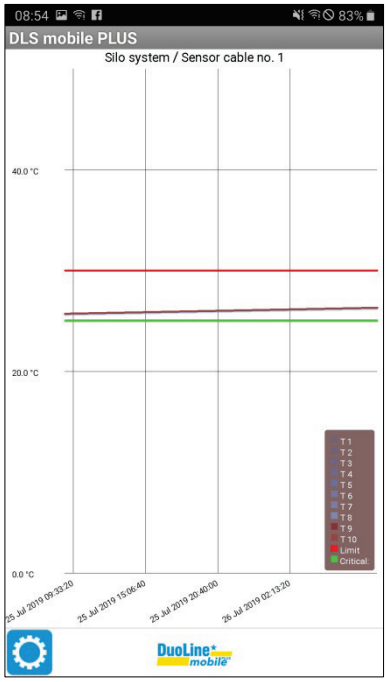
Red = limit

The wireless measuring probe with ID 5 is assigned to the receiver with ID 2000.

Scrolling to the previous/next data set is only possible here in the lower control panel.

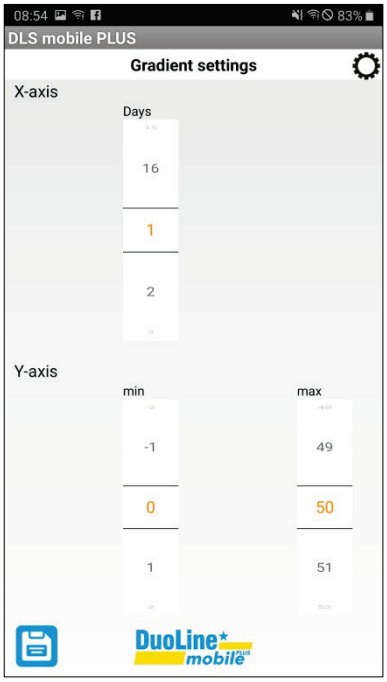
2.8.3 Display temperature gradient

Temperature gradient:




Setting the axis

Setting the axis



IMPORTANT!


Save settings!

PDF print protocol:

24.07.2018 11:30:46

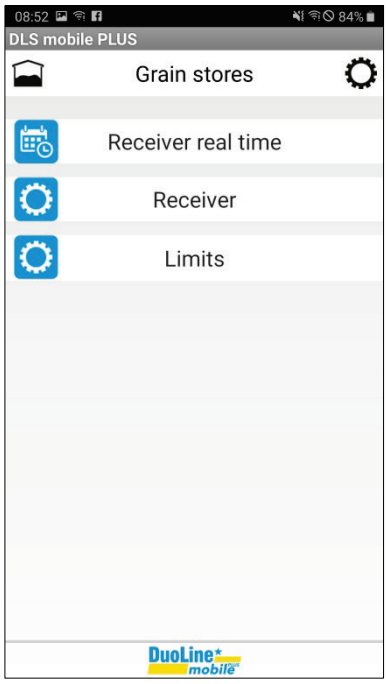
.....

Date / Signature

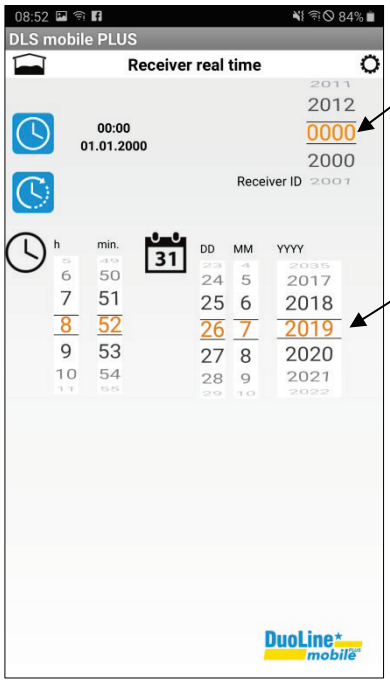
Description	Store	Probe ID	Rec. No.	Sensor no.: temperature °C 1	2	3	4	Receiver	Time	Battery V
	1	004	2000	-3.9	9.9	-3.9	-13.0	24.07.18	11:31	2.9
	1	004	2001	-3.9	9.9	-3.9	-13.0	24.07.18	10:32	2.9
	1	004	2002	-3.9	9.9	-3.7	-13.0	24.07.18	10:36	2.9
	1	007	2000	39.3	9.9	-49.9	100.0	24.07.18	11:28	2.6
	1	007	2001	39.3	9.9	-49.9	100.0	24.07.18	10:32	2.6
	1	007	2002	39.3	9.9	-49.9	100.0	24.07.18	10:36	2.6
	1	020	2001	24.8	24.8	25.0	24.8	24.07.18	10:24	3.0
	1	020	2002	24.8	24.8	25.0	24.8	24.07.18	10:27	3.0
	1	032	2001	24.7	24.7	24.8	24.7	24.07.18	10:32	3.0
	1	032	2002	24.7	24.7	24.8	24.7	24.07.18	10:35	3.0

The print protocol in PDF format can be saved, printed and sent. Other provider apps may be required for these functions.

2.8.4 Configuration grain store



2.8.5 Setting receiver clock



1. Select receiver ID
2. With this symbol you read out the time of the selected receiver.
3. Set the current or desired time and date.
4. With this symbol you import the set time into the selected receiver.
5. Check the time imported as described in point 2.

The time of the receivers is preset. However, it may happen that the time changes (e. g. fluctuations in the mains voltage). You can import desired time (e. g. different time zone) into the selected receiver. Check the settings regularly!

The date and time data are important for the logging of the measurement data in the print protocols (documented proof for insurance in case of fire).

2.8.6 Configuration receiver

You can install up to 4 receivers in 3 grain stores.

Setting the receiver IDs

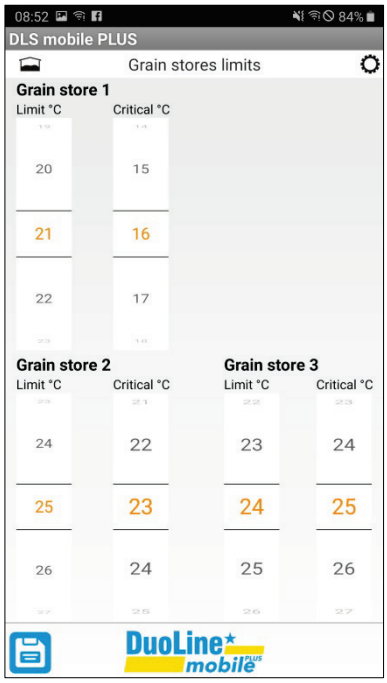
The ID numbers can be found in the system specification.

IMPORTANT!

Save setting!

Rec. = Receiver

2.8.7 Setting the limit in the grain store

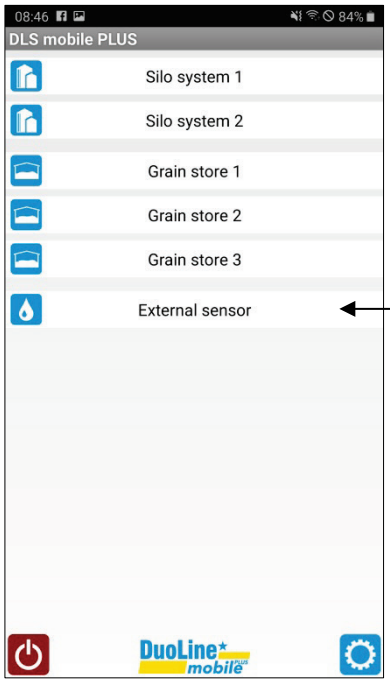


Here you can set the limit values (critical and limit) for each grain store individually.

IMPORTANT!

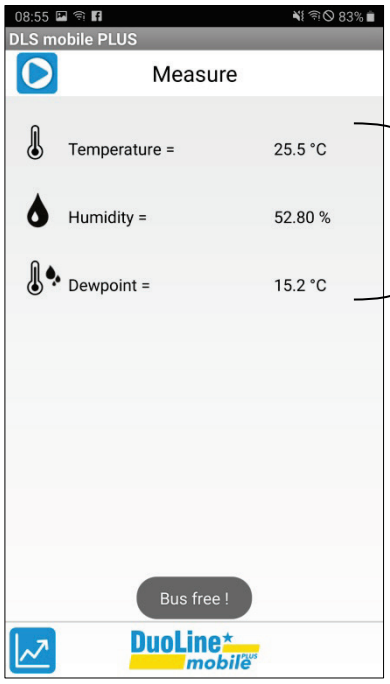
Save settings!

2.9 External sensor (option)



Select external sensor

2.9.1 Measure external sensor



Start measurement

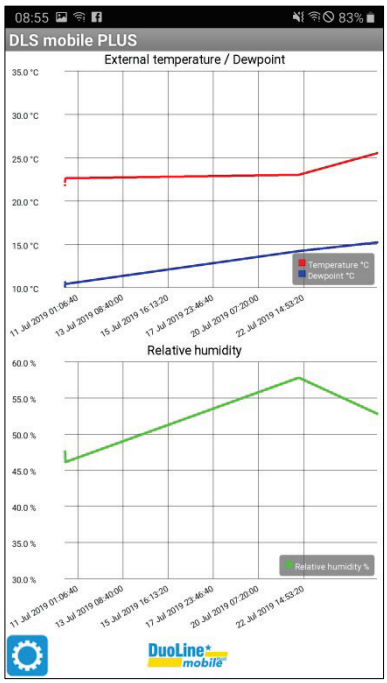
Temperature gradient

Display of external temperature, humidity and dew point

If another bus master (second mobile device or DLS medium, soft/link) simultaneously performs a measurement, "**Bus busy !**" is displayed. This means that the bus line is busy. Wait some time until the bus line is free again and restart the measurement.

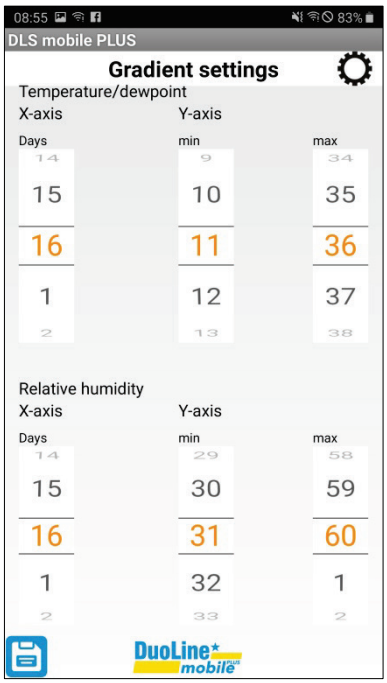
2.9.2 Display temperature gradient

Temperature gradient:



Setting the axis

Setting the axis:



IMPORTANT!

Save settings!