



IoT Box

Technical manual

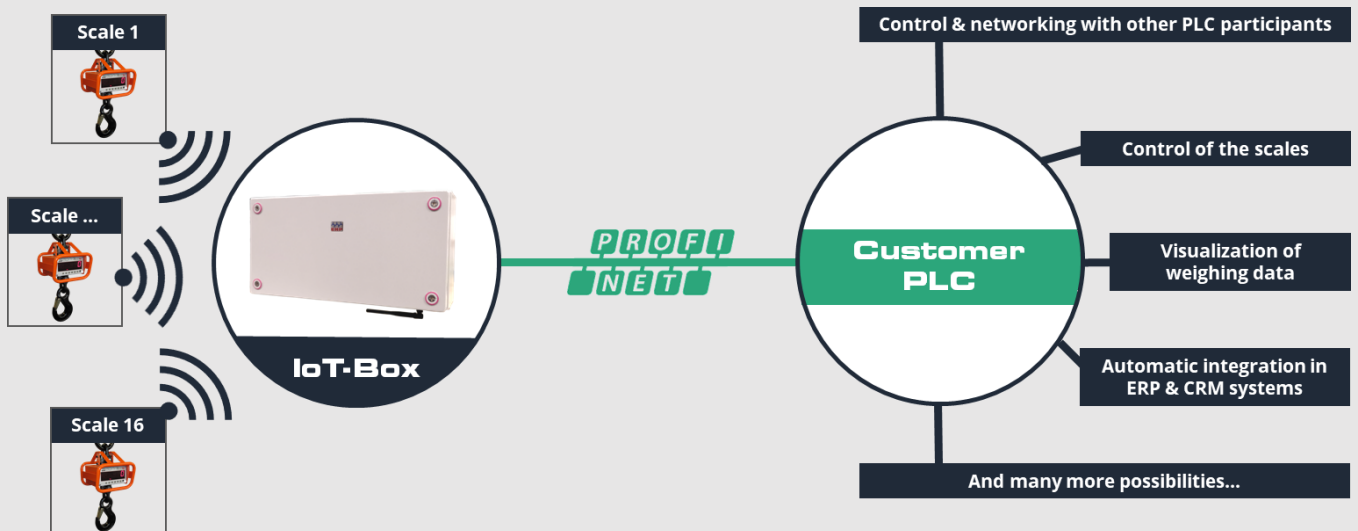


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Declaration of Conformity

Declaration of Conformity

Manufacturer: EHP-Wägetechnik GmbH

**Address: Dieselstrasse 8
D-77815 Bühl (Baden)**

hereby declares that the product: **Data Receiver Type IoT Box**

with all options complies with the following harmonized standards:

EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11 according to directive 2004/30/EU (electromagnetic compatibility)

EN 61010-031 Part 1/ Safety requirements for electrical equipment for measurement, control and laboratory use

EN 62368-1 Communication equipment - Part 1: Safety requirements

EN 60950-1:2006 according to Directive 2014/35/EU (Low Voltage Directive)

The radio equipment complies with Directive 2014/53/EU.

DIN VDE 0100

The product is marked with the CE mark.

Bühl, October 2022



Markus Ebel / Head of Technology

This declaration has been prepared in accordance with DIN EN ISO/IEC 17050-1.

Notes on the manual

In this technical manual you will find the necessary information for installation & operation of the **IoT Box**.

- ▶ Read this manual before operating the product. This will protect you and prevent damage to your device.
- ▶ Always keep this manual in a place where employees, service personnel, etc. can view it. Present this manual to the inspector or the contracted specialist company at each recurring inspection.

Design features of this guide

Various elements of this guide have specified design features. This way you can easily distinguish the following elements:

Normal text

- Enumerations
- ▶ Action steps

Table titles and **figures** are in bold.

- ① Tips contain additional information.

Figure design features

If elements of a figure are referred to in a legend or in the running text, they are assigned a number (1). The numbers in the running text always refer to the figure shown.



Figure 1 -Explanation Design Features

Safety instructions

TO NOTE

- Device may only be opened by a specialist!
- Device must be protected from heat and moisture!



IMPORTANT SAFETY INSTRUCTIONS



To avoid exposing yourself to the risk of electric shock, do not remove the housing cover. There are no user-repairable parts inside the unit. Leave repairs to the qualified EHP customer service. There is a risk of contact with non-insulated parts inside the device, which can lead to electric shocks.

Operating environment

Avoid installing this device in an insufficiently ventilated, humid or hot place.

Warning:

To disconnect the device completely from the mains, the power connection must be disconnected.

Warranty

The warranty is void in the event of:

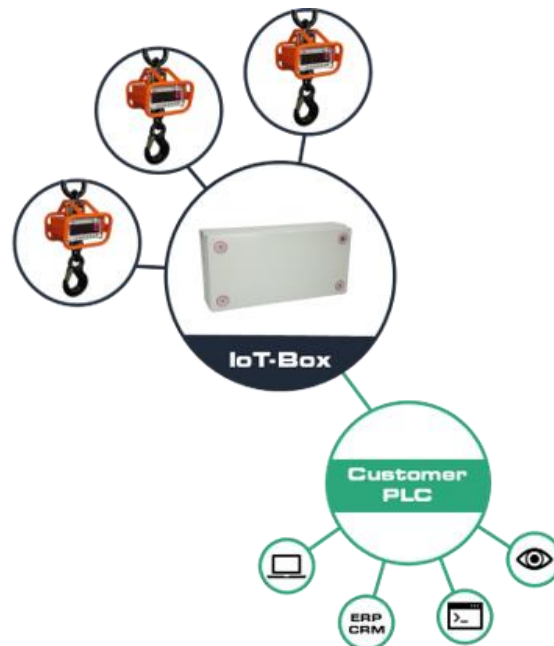
- Non-intended use of the manufacturer's specifications in this operating manual
- mechanical damage, damage due to heat, moisture and liquids
- Wear and tear

Technical data

Input voltage	230 V
Frequency range	433 MHz band
Housing	Sealed Metal housing
Dimensions	400 x 200 x 120mm
Weight	Approx. 5 kg
Nominal temperature range	-10°C... +40°C
Protection class	IP 54
Default IP-address	192.168.0.1 (PLC-Connection) 192.168.0.2 (NetScale)

Table 1 - Technical data

Overview



Using the IoT Box, you can integrate weighing data from **up to 16 EHP crane scales** simultaneously into your PLC system. Thanks to **predefined GSDML & UDT file**, a connection can be established in a few minutes without much effort.

Transmission takes place via **Profinet or Modbus TCP** as standard, but can also optionally take place via Modbus RTU or Profibus DP (factory preset according to customer requirements). The weighing data transmission from the IoT Box is integrated as a slave in the higher-level PLC system.

Once the IoT Box is successfully connected to your PLC system, a wide range of applications are possible:

In addition to the pure visualization of the measurement data and control of the scales (e.g. tare, fixtare - specify tare value yourself, set to zero, register weight), you can also receive/send commands from other PLC participants. Start a measuring process at the push of a button and then have the weighed goods transported away, or transfer the measured data directly to your ERP / CRM system in order to obtain an evaluation of material usage and to document warehouse consumption. The possibilities are almost limitless.

Scope of delivery

- IoT Box



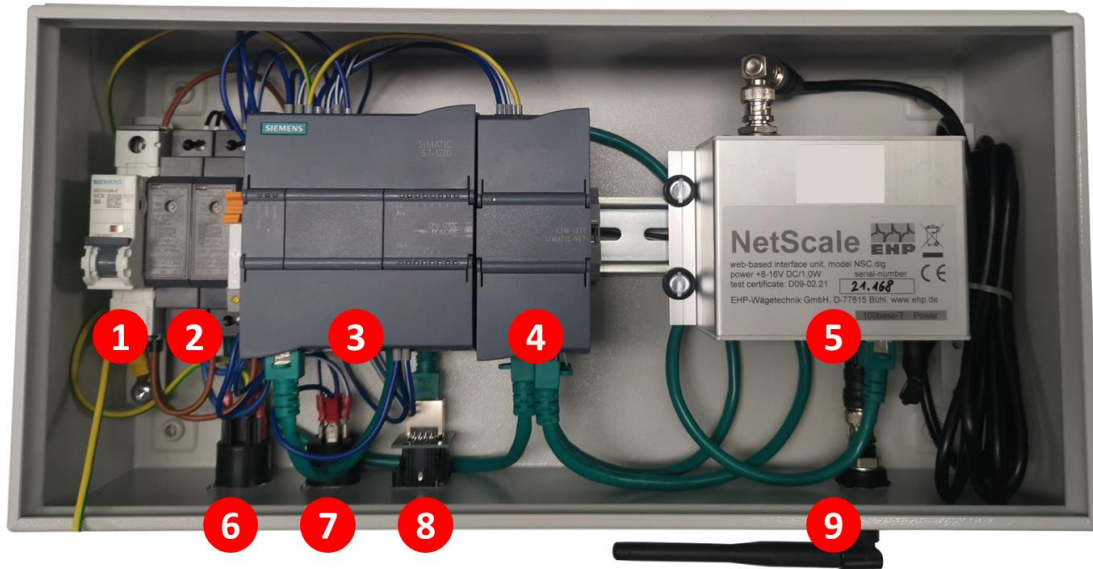
Figure 2- IoT Box

The following accessories are included as standard:

- Connector for power connection - Neutrik Powercon NAC3FCA
- Connector for network connection - Neutrik Ethercon NE8MX
- Angle antenna

Detail view

The IoT Box consists of the following components:

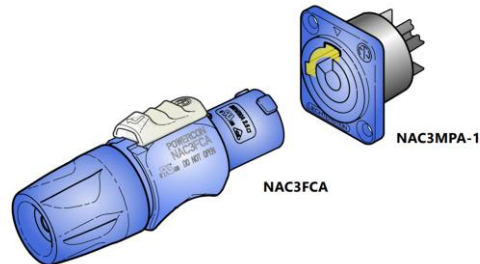


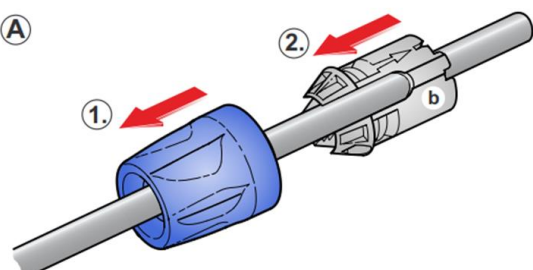
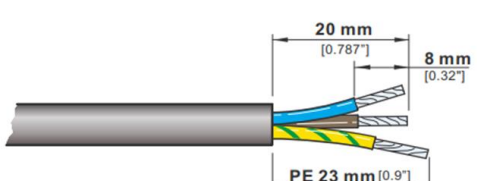
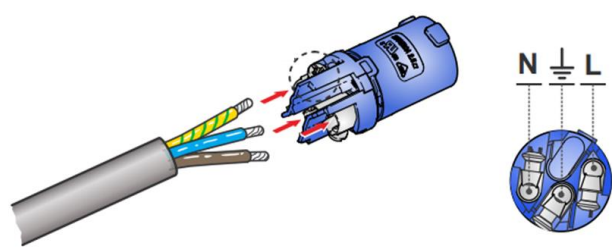
1. Main switch
2. Power supply unit
3. Central processing Unit
4. Communication processor
5. EHP NetScale
6. Power Supply connector
7. Digital Input connector
8. ProfiNet Port

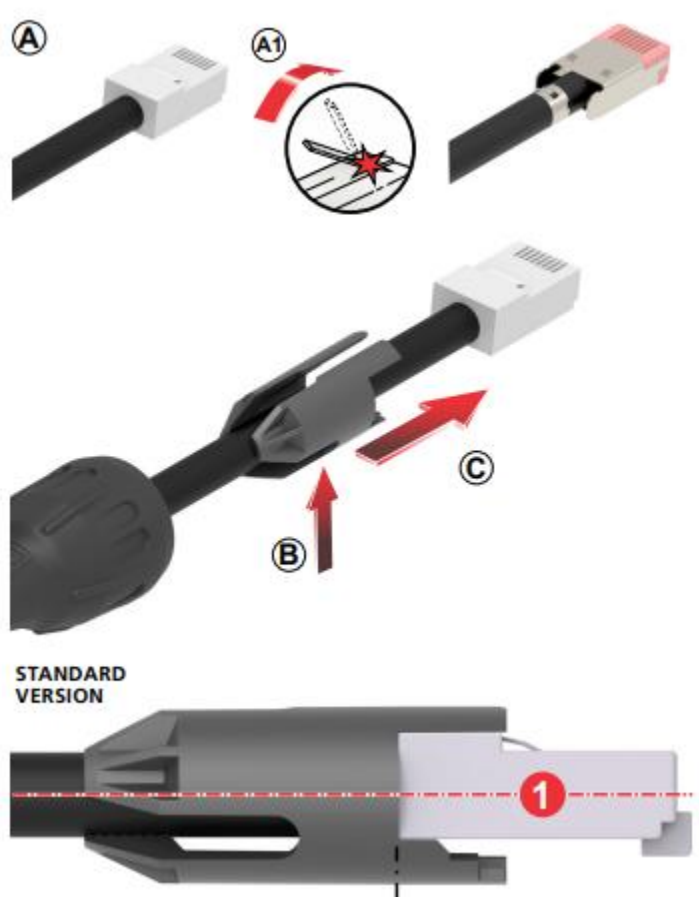
Commissioning

Power & Network Connection

Depending on the installation location of the IoT Box, different cable lengths are required. Therefore, only the connector for the power connection - Neutrik Powercon NAC3FCA - and the connector for the network connection - Neutrik Ethercon NE8MX - are included in the scope of delivery.



<p>(A)</p>  <p>(B)</p>  <p>(C)</p> 	<p>Connection power plug</p> <p>(A) Slide the clamping sleeve (1) and the collet (2) over the cable.</p> <p>(B) Prepare the power cable according to the dimensions in the illustration.</p> <p>(C) Insert the cable into the provided clamps and fasten it (max. torque 0.5Nm).</p> <p>Finally, screw the connector housing and clamping sleeve together.</p>
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 <p>The diagram illustrates the three-step process of connecting an Ethernet cable to a clamping sleeve. Step (A) shows the RJ45 connector being mounted on the cable, with a red arrow indicating the removal of the release tab. Step (B) shows a collet chuck being inserted into the RJ45 connector, with a red arrow indicating the insertion direction. Step (C) shows the clamping sleeve being slid over the RJ45 connector, with a red arrow indicating the sliding direction. A 'STANDARD VERSION' label is present near the bottom of the diagram.</p>	<p>Connector plug Ethernet</p> <p>Preparation: Slide the clamping sleeve over the cable.</p> <p>(A) Mount the RJ45 connector on the cable. Remove the release tab of the RJ45 plug.</p> <p>(B) Insert collet chuck, aligning the opening on the contact side of the RJ45 connector</p> <p>(C) Slide clamping sleeve over RJ45 connector.</p>
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Connect the power cable and establish the Ethernet connection between the IoT Box and your PLC system. This completes the commissioning on the hardware side.

Radio connection

The IoT Box has a radio range of up to 500m in the open field. Obstacles between the scales and the IoT Box, such as walls, can impair the range accordingly. Therefore, if possible, select a location with a clear view of the connected scales.

IP address

Two IP addresses are preset. The IP address 192.168.0.1 is used for PLC communication. For the internal communication of Netscale the IP address 192.168.0.2. is used. If other IP addresses should be used, please contact your EHP representative. The IoT Box can be adjusted before delivery.

NetScale INI file

The Net-Scale must be configured for operation with a scale. This is done via entries in an "NSC.INI" file on the SD card. Operation without an INI file is not possible!

Entry	Explanation
FREQ=x	Frequency channel for communication with the scale (1-28)
DIMZ=kg	Dimension sign (two digits)
NKOM=0	Number of decimal places; When this line is deleted, the decimal value of the scale is automatically taken over
IPAD=xxx.xxx.xxx.xxx	IP address FIX (without DHCP) As default IP address 192.168.0.2 is set. If another IP-address should be used please contact your EHP contact person
MASK=255.255.255.xxx	Subnet Mask (without DHCP)
GATE=xxx.xxx.xxx.xxx	Gateway
PORT	Port for the assignment of the service. Freely selectable from 1 to 65535. (Default port is 187, when selecting the port, make sure that it does not collide with any other service).
WDHL=1...5	Number of communication attempts between Net-Scale and scale
ACT= 1.....16 (from firmware 2.12)	<p>Permanently activate communication to scales By entering the scale number in the INI file, a permanent connection is established, independent of the configuration of the network interface. A separate entry must be created for each scale.</p> <p>This facilitates the integration of the Netscale in order to be able to use commands such as "Register weight – 10 without any programming effort or to establish communication with an EHP large display if no permanent IT connection of the network interface is provided.</p> <p>Note: When using a large display, the Netscale is limited to use with a scale.</p>

Table 2 -INI file entries

NOTE

The SD card is mounted as an ftp drive as soon as the net-scale is supplied with voltage. If the SD card is removed during operation, it must be mounted again. To do this, disconnect the Net-Scale from the power supply and reconnect it after a few seconds.

The INI file must be named in capital letters (file name: NSC.INI)!

The SD-Card can easily be exchanged by pushing on it. It's located at the top of the NetScale.



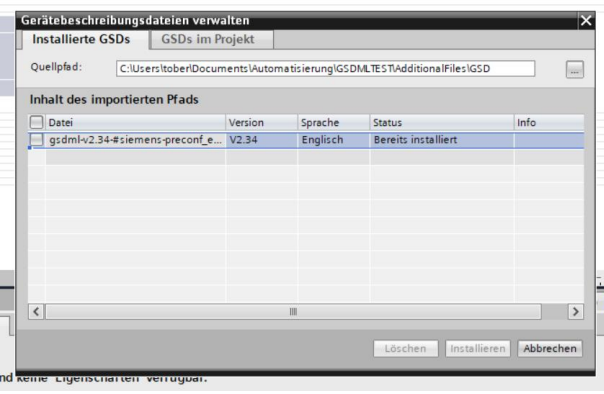
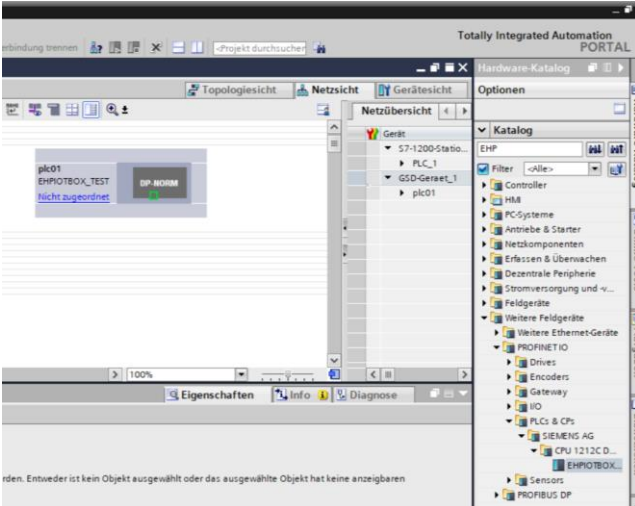
Integration of the IoT Box into your PLC system

Using the predefined GSDML & UDT files, you can integrate the IoT Box into your PLC network in just a few steps. You can obtain the files from your EHP contact.

TIA Portal

The following describes the integration of the relevant information in the widely used TIA Portal (TIA Portal is not part of the IoT Box scope of delivery).

The IoT-Box can also be integrated via STEP 7 Classic or in other control systems (e.g. BoschRexroth). If you have any questions, please contact your EHP representative.

Include GSDML file

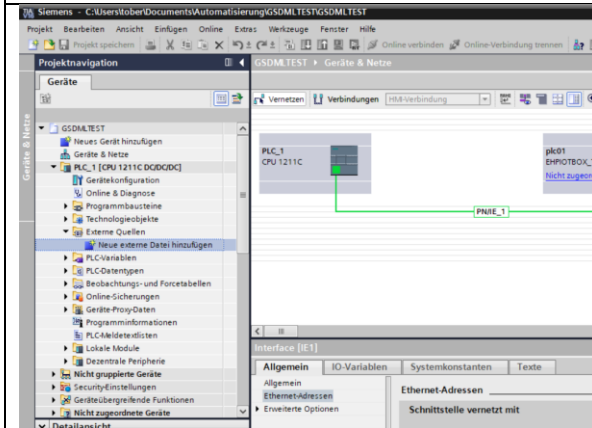
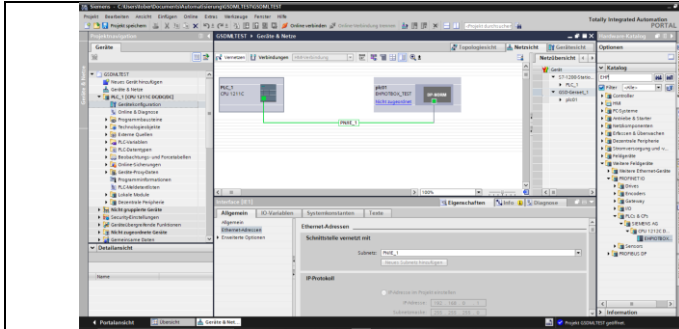
(A)
Under the "Extras" menu tab, select "Manage device description file (GSD)".

Select the source path under which the GSDML file of the IoT Box can be found on your computer.

Highlight the file and click Install.

(B)
Search for "EHP" in the "Hardware Catalog", select "EHP_IOT Box" and drag it to your network view.

(C)
Finally, you only need to establish the connection between your PLC and the IoT Box.



Include UDT file

Select "Add new external file" in the "Project navigation" under "External sources".

Select the appropriate path and the file "EHP_IoT_Box.udt"

Structure of UDP file

The basic structure of the UDP file is structured in the following sections:

Original name	Translation
FehlerCodes	Error Codes
GewichtRegistrierenBeiStillstand	Weight Registered at Standstill
FirmwareversionAbfragen	Firmware request
MesswertAbfrage	Weighing value request
MesswertAbfragenEinmalig	Weighing value unique request
PhysikalischeEingänge	Physical Inputs

Section “Error Codes”

EhpKommunikationAusgänge								
	Name	Datentyp	Defaultwert	Erreichbar a..	Schrei...	Sichtbar i...	Einstellwert	K..
1	▼ FehlerCodes	Struct		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	■ E1	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	■ E2	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	■ E3	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	■ E4	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6	■ KommunikationsfehlerNe...	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Automatic error detection routines cyclically check the functions of the crane scale and ensure a proper operation. If an error is detected, it is automatically indicated on the display in the form of an error code. The balance switches off automatically after approx. 5 seconds.

Error code	Cause	Solution
Err 02	The input voltage of the measuring amplifier is too low.	Switch scale off and on again to see if Error is detected again. Contact your EHP Service partner for further information.
Err 03	The input voltage of the measuring amplifier is too high.	
Err 04	AD- Converter error	
Kommunikationsfehler Netscale (Communication Error Netscale)	Error radio modem	An incorrect radio channel was set or the modem is defect.

Section “Weight Registered at Standstill”

	Name	Datentyp	Defaultwert	Erreichbar a..	Schrei...	Sichtbar i...	Einstellwert	K.
1	▶ FehlerCodes	Struct		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	▼ GewichtRegistrierenBeiStillsta.	Struct		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	■ WaagenNummer	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	■ ReserveByte2	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	■ Registernummer	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6	■ Jahr	UInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7	■ Monat	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8	■ Tag	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9	■ Stunde	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10	■ Minute	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11	■ Sekunde	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12	■ ReserveByte13	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13	■ NettoGewicht	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14	■ DimensionNetto0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
15	■ DimensionNetto1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
16	■ TaraGewicht	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
17	■ DimensionTara0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
18	■ DimensionTara1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

This section lists individual parameters that are recorded when the weight is registered like Timestamp, Net weight, tare weight etc.

Original name	Translation
GewichtRegistrierenBeiStillstand	WeightRegisteredAtStandstill
WaagenNummer	ScaleNumber
ReserveByte2	ReserveByte2
Registernummer	RegisterNumber
Jahr	Year
Monat	Month
Tag	Day
Stunde	Hour
Minute	Minute
Sekunde	Second
ReserveByte13	ReserveByte13
NettoGewicht	NetWeight
DimensionNetto0	DimensionNetto0
DimensionNetto1	DimensionNetto1
TaraGewicht	TareWeight
DimensionTara0	DimensionTare0
DimensionTara1	DimensionTare1

Section “Weighing value request”

4	▼ MesswertAbfragen	Struct		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	■ StatusByte	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	■ FehlerCode	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	■ Messwert	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	■ DimensionMesswert0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	■ DimensionMesswert1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	■ Tarawert	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	■ DimensionTaraWert0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	■ DimensionTaraWert1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This section lists individual parameters regarding the weight value like weight value or tare weight.

Original name	Translation
MesswertAbfragen	WeighingValueRequest
StatusByte	StatusByte
FehlerCode	ErrorCode
Messwert	Measured value
DimensionMesswert0	DimensionMeasured value0
DimensionMesswert1	DimensionMeasured value1
Tarawert	Tare value
DimensionTaraWert0	DimensionTareValue0
DimensionTaraWert1	DimensionTareValue1

Section “Weighing value unique request”

5	▼ MesswertAbfragenEinmalig	Struct		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	■ StatusByte	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	■ FehlerCode	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	■ Messwert	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	■ DimensionMesswert0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	■ DimensionMesswert1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	■ Tarawert	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	■ DimensionTaraWert0	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	■ DimensionTaraWert1	Char	''	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Original name	Translation
MesswertAbfragenEinmalig	WeighingValueUniqueRequest
StatusByte	StatusByte
FehlerCode	ErrorCode
Messwert	Measured value
DimensionMesswert0	DimensionMeasured value0
DimensionMesswert1	DimensionMeasured value1
Tarawert	Tare value
DimensionTaraWert0	DimensionTareValue0
DimensionTaraWert1	DimensionTareValue1

Section “Physical Inputs”

	Name	Datentyp	Defaultwert	Erreichbar a..	Schrei...	Sichtbar i...	Einstellwert ..
1	Nullsetzen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Tara Setzen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Tara Löschen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Fixtara Setzen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Waage Wählen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Gewicht Registrieren Bei Stillsta.	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	Firmware Version	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	Datum Uhrzeit Setzen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	Frequenzkanal Wählen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	Messwert Abfragen	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	Messwert Abfragen Einmalig	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	Reserve Bool3	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	Reserve Bool4	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	Reserve Bool5	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15	Reserve Bool6	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Reserve Bool7	Bool	false	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17	Waagen Nummer	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18	Frequenz Kanal	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
19	Fix Tara	DInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20	Uhrzeit Setzen Jahr	UInt	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
21	Uhrzeit Setzen Monat	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
22	Uhrzeit Setzen Tag	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
23	Uhrzeit Setzen Stunde	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
24	Uhrzeit Setzen Minute	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
25	Uhrzeit Setzen Sekunde	Byte	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

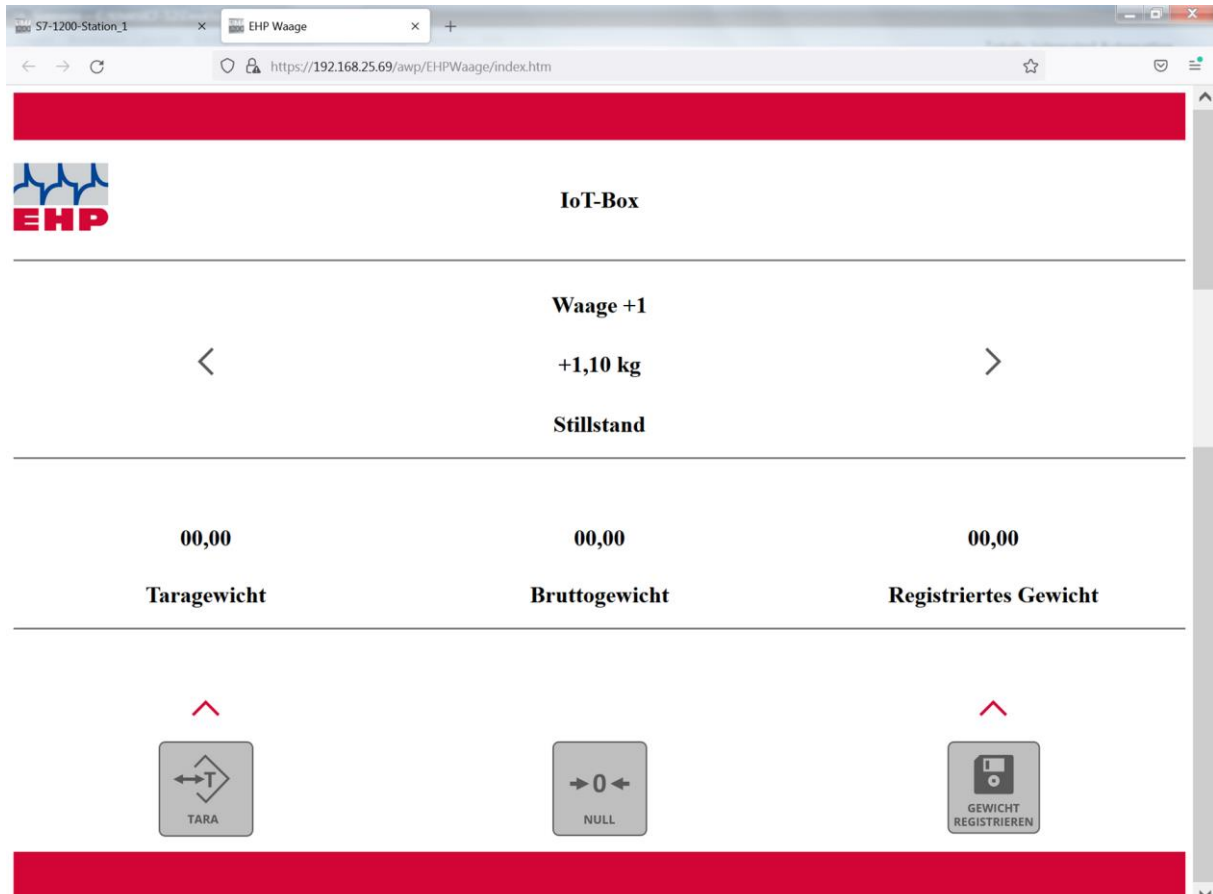
This section lists input parameters like setting zero, setting tare, setting time stamp, selecting scales or frequency.

Original name	Translation
Physikalische Eingänge	Physical Inputs
Nullsetzen	Zeroing
Tara Setzen	Tare Set
Tara Löschen	Tare Clear
Fixtara Setzen	Set Fixtara
Waage Wählen	Scale Select
Gewicht Registrieren Bei Stillstand	Weight Register At Stop
Firmware Version	Firmware Version
Datum Uhrzeit Setzen	Date Time Set
Frequenzkanal Wählen	Frequency Channel Select
Messwert Abfragen	Measured Value Query
Messwert Abfragen Einmalig	Measured value Query Once
Reserve Bool3	Reserve Bool3
Reserve Bool4	Reserve Bool4
Reserve Bool5	Reserve Bool5
Reserve Bool6	Reserve Bool6
Reserve Bool7	Reserve Bool7
Waagen Nummer	Balance Number
Frequenz Kanal	Frequency Channel
Fix Tara	Fix Tare

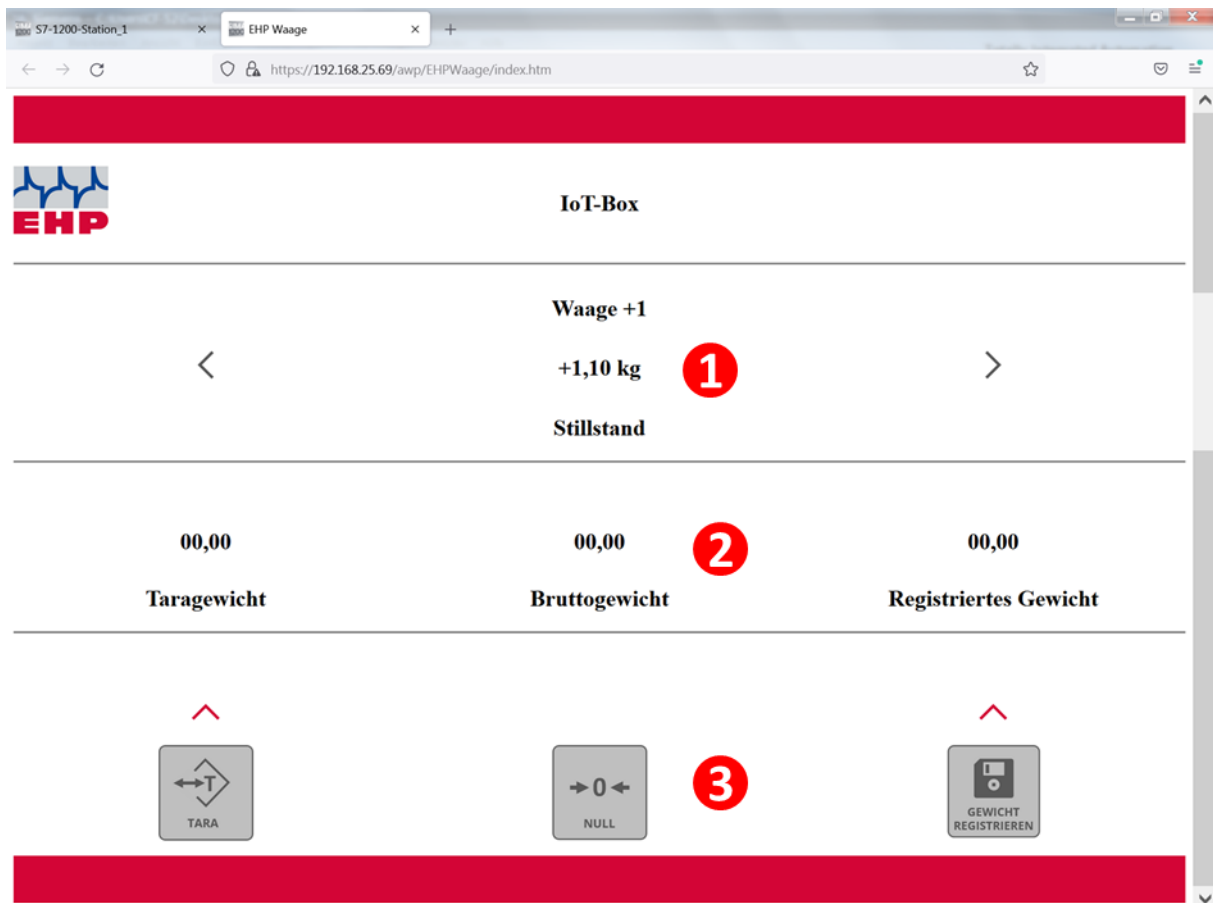
UhrzeitSetzenJahr	TimeSetYear
UhrzeitSetzenMonat	TimeSetMonth
UhrzeitSetzenTag	TimeSetDay
UhrzeitSetzenStunde	TimeSetHour
UhrzeitSetzenMinute	TimeSetMinute
UhrzeitSetzenSekunde	TimeSetSecond

User interface

Access to the user interface is gained through the inputs of the permanently defined IP address of the IoT Box in any browser.



The following information is displayed:



1. Scale information

Scale Name, the actual weight and the scale status (stand still) are shown. With the cursor symbols at the left and right you can select other scales.

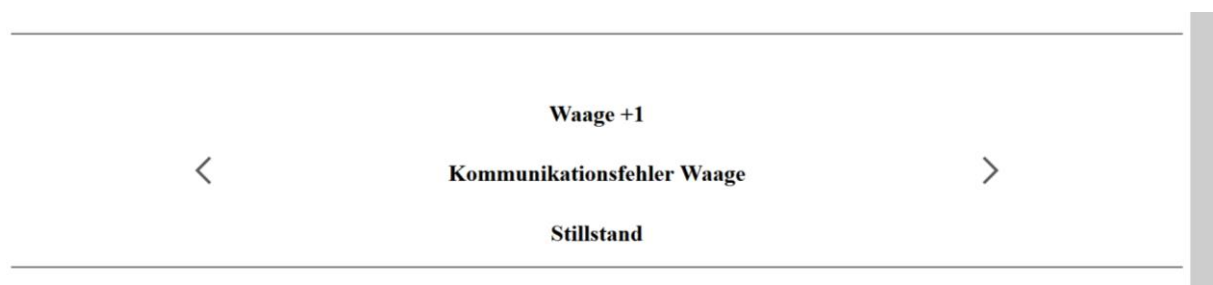
2. Weight information

Tare weight , Gross weight & registered weight are shown

3. Buttons

Tare weight, Setting Zero or register weight can be selected by clicking the respective button

If the connection between Scale and IoT-Box are is interrupted the Message "Communication error Scale" is displayed



Scale Communication

NOTE

The EHP crane scale must have a release version LAH12.26 or LAH12.42 to operate with IoT-Box. As standard only scales are integrated which are purchased together with the IoT-Box. For the integration of existing scales please contact your EHP contact person.

Channel frequency table

For smooth operation between the scale and the net-scale, it is necessary to use a free frequency channel. Other devices, e.g. crane radio, can massively impair the data exchange between the Net-Scale and the scale. Please note the frequency specification on the nameplate of the scale. This can be changed as required in the scale setup (see Changing the frequency and scale number of the scale).

Channel no.	Frequency in MHz	Channel no.	Frequency in MHz
00	Not occupied		
01	433,075	15	434,000
02	433,125	16	434,075
03	433,175	17	434,150
04	433,225	18	434,225
05	433,275	19	434,300
06	433,325	20	434,375
07	433,400	21	434,425
08	433,475	22	434,475
09	433,550	23	434,525
10	433,625	24	434,575
11	433,700	25	434,625
12	433,775	26	434,675
13	433,850	27	434,725
14	433,925	28	434,775

Table 3 - Frequency table IR500 radio (500m) 433 MHz band

Change frequency and number of the scale

The Net-Scale protocol requires that the scale and channel numbers match. You can only receive data from a scale if both values of the scale are identical with the call-up commands of the Net-Scale.








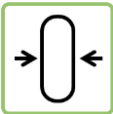


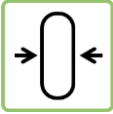
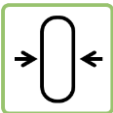

- Press the TEST key of the crane scale, the most important setting parameters are now displayed one after the other. Value 4 and value 5 are relevant.

Table 4 - TEST Display values

No.	Display	Explanation
1	88888	LED segment test
2	LAH	Release
3	12.21	Version
4	xx	Scale number (01-16)
5	Cxx	Channel number (01-28)
6	Hxx	Remote control number (01-12)

To change the scales and channel number, proceed as follows:

Key combination	Function
 	Press the On and Test keys simultaneously, EEEEE appears in the display.
	Press the Test key repeatedly until P13 (frequency channel) appears in the display.

 	<p>Activate the parameter using the tare key to call up the position to be changed.</p> <p>Use the Test key to enter a value between 01- 28 (corresponds to channel 01-28).</p>
	<p>Close the parameter with the zero key.</p>
	<p>Press the Test key repeatedly until P14 (scale number) appears in the display.</p>
 	<p>Use the tare key to activate the parameter and call up the position to be changed.</p> <p>Use the Test key to enter a value between 01- 16 (corresponds to scale 01-16).</p>
	<p>Close the parameter with the zero key.</p>
	<p>Press the Test key repeatedly until P99 (save parameter) appears in the display.</p>


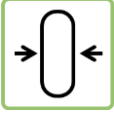


 	<p>First press the tare key and then operate with the zero key</p> <p>Sto (Store) flashes in the display.</p>
 	<p>To exit the setting mode, press the On and Off keys simultaneously or briefly disconnect the scale's battery pack</p>

Table 5 - Change frequency & scale number

FAQs

If you have further questions that are not answered in the FAQs, please contact our hotline free of charge: +49 7223 9366-0

- ***Can I connect my existing EHP scales to the IoT Box?***

EHP scales that already have the corresponding radio equipment can be connected directly to the IoT box. If your EHP scales do not yet have radio equipment, this can be retrofitted at low cost. If your scales are equipped with the appropriate radio technology, they can be connected to the IoT box without any problems. Otherwise, retrofitting on the part of EHP is also possible and cost-effective in most cases.

- ***How many scales can communicate with one IoT Box?***

Up to 16 scales can interact with one IoT box. Older EHP scales can also be easily converted to communicate with the IoT Box. The EHP crane scale must have a release version LAH12.26 or LAH12.42 to operate with IoT-Box. As standard only scales are integrated which are purchased together with the IoT-Box. For the integration of existing scales please contact your EHP contact person.

- ***Up to 16 scales can communicate with an IoT Box - is the data acquisition of the scales always active or only when they are directly addressed? Can individual scales be deactivated?***

By default, all connected scales are always active, this can also be changed if necessary.

- ***What protocol types are available?***

Profinet or Modbus TCP are the standard protocol types, protocol format is preset accordingly by EHP. Further possible protocol types are Modbus RTU or Profibus DP. These are optionally available.

- ***What scale functions are available?***

Tare, pre-tare (tare with preset value), set to zero, register weight.

- ***Does the IoT Box have additional inputs and outputs?***

For most applications, no additional inputs and outputs are required on the IoT Box. On customer request the IoT-Box can be extended with eight digital inputs and six digital outputs. Analog inputs/outputs are also possible, please contact us!

- ***Can I integrate my existing scales?***

By default, the IoT-Box is set to operate with newly sold scales. The EHP crane scales must have a release version LAH12.26 or LAH12.42 to operate with the IoT-Box. If you want to integrate existing scales, please contact your EHP representative.

EHP service hotline

Do you need our support in the fastest way?

No problem - just call us free of charge.



Hotline: +49 7223 9366-0

**You can reach us Monday through Thursday
between 8:00 am and 4:00 pm and Friday
between 8:00 am and 12:00 pm.**



**EHP Weighing Technology
GmbH**

**Diesel road 8
77815 Bühl**

www.ehp.de