since 1933
WEIGHING TECHNOLOGY

Operator manual

KSW-7B

VNC / FieldBus

*** SAFETY REGULATIONS ***

Being under voltage the device must not be opened. Danger of electric shock exists. Service works at the weighing equipment are permitted only for qualified personnel. In case of works at conveying lines, all relevant drives have to be switched-off and secured against re-engaging.

The related device/system may only be set-up and operated in connection with this documentation. Start-up and operation of a devices/system may only be carried out by **qualified personnel.** Qualified personnel in terms of safety notes of this documentation are persons being authorized to take into operation, to ground and to label the devices, systems and circuits in accordance with the standards of safety engineering.

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Revisionsliste

Revision	Datum	Autor	Kapitel	Beschreibung
FB_KSW7_V01_11en	29.07.2021	AutoTranslate	all	Automatic translation

Software indication

These instructions are based on following Software versions:

V 1.11

In course of the technical progress changes can be carried out at the software. At subsequent software versions therefore, deviations are possible compared to these instructions.

Only operating instruction in German is considered as

ORIGINAL INSTRUCTION

All other languages are defined as Translations.

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1 General description

This manual describes the KSW-7B system in general and in particular the communication possibilities via fieldbus systems of the KSW-7B scale system.

1.1 Symbols

This manual uses the following symbolism as special icons:

IMPORTANT NOTE !
Marks an important note.

WARNING!
Indicates a general warning.

DANGER!
means that death or serious bodily injury may occur if the corresponding Precautions are not taken

SPS
PLC
Is a central controller (PLC) superior to the scale system

1.2 Hardware- Aufbau Basisgerät KSW-7B

Basically, the KSW-7 allows the following application, which is defined in the parameter P93000:

00: Mono-Scale	In this operating mode, one or more individual wagons can be realized with a single KSW-7B.
01: Board Scale	This operating mode allows the weight of individual plasterboards to be measured.

Each balance basically has its own input or inputs for the force transducer (weight signal) as well as a digital input and output card.

Here is a usual minimal structure with additional cards shown:

KSW-7B is the actual CPU module

PM2 is the power supply module (24VDC)

The 1st scale includes:

WC00 is the mV weight signal input from the force transducer.

DI00 is a digital input card for control commands

DI01 is an optional input card, here one or more analog and digital cards can optionally be inserted as required (DIxx,Doxx,AIxx,AOxx)

A KSW-7B can currently contain up to 5 scales depending on the expansion stage. A further expansion to 8 scales is planned in the medium term. Simply use the WC10,DI10,DI11,... and so on. expanded to the right. The KSW-7B can be up to about 70cm wide.

For the details regarding ATEX in particular as well as all other technical details, the specifications of the original operating manual of the manufacturer must be strictly followed!

Download at: https://download.br-automation.com/ (Product X20 – CP0482 + Components)

1.3 Optional TP-7B Operator Panel

Each KSW-7B can control an optional operator panel.

Communication takes place via the VNC protocol. This means that the terminal is actually just a VNC_Client.

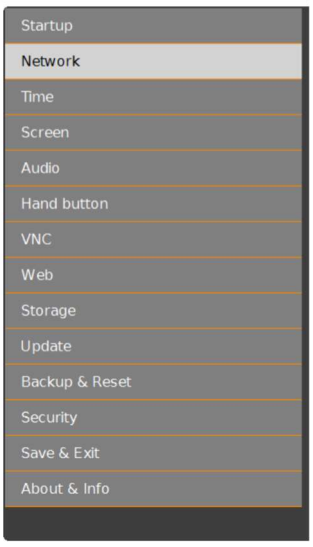
For this reason, the display display can also be displayed on any other available device that supports VNC client communication.

This also applies to PCs and notebooks with a VNC client

If the VNC client uses a mobile phone or tablet without an Ethernet RJ45 connector, a WLAN wireless connection must be set up.

Rated voltage:	24VDC 8 to 32 VDC allowed / reverse polarity proof
Max Power	Consumption:9.34W
Protection class:	EN60529 IP65 frontside only, IP20 back side
	UL50 Front
	Type 4X indoor use only
Temperature:	-20 to 60°C
Dimensions:	W: 197mm / H: 140mm / D: 47.8mm 0.6kg
Approvals:	CE, Zone 22 II 3D Ex tc IIIC T70°C Dc, UL cULus E115267

Attention:



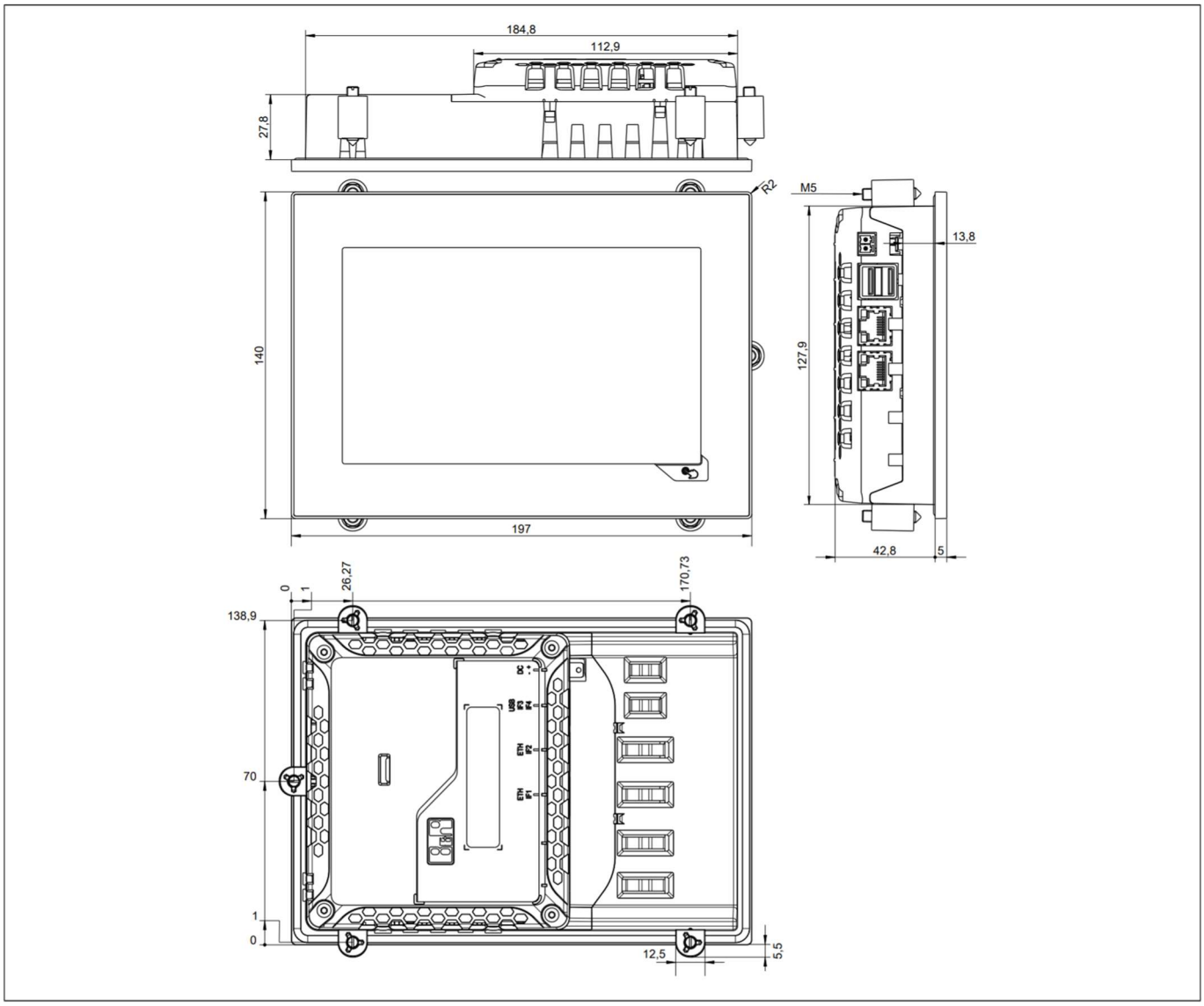
If necessary, the TP-7B must be configured via integrated service page. This service page can be accessed in different ways.

The service page can be accessed by pressing the hand button at the front of the front if it is configured as usual and not locked.

The service page can also be used by pressing the right and left mouse buttons simultaneously for at least 2 seconds if a USB mouse is connected

At least the "Network" and "VNC" input elements must be parameterized,

The parameterization must be completed via "Save & Exit".



Dimensions of the cut-out for this Power Panel variant: 186.8 ±1 mm x 129.8 ±1 mm

For the details regarding ATEX in particular as well as all other technical details, the specifications of the original operating manual of the manufacturer must be strictly followed!

Download unter: https://download.br-automation.com/ (HMI – PowerPanels T30-Series)

2 Operating Mode / Single Scale - Variants

Each scale can currently work in 3 different operating modes.

These are:

1. Simple weight measurement (static balance)
2. Charging in weight containers (batch positive)
3. Charging from weighed storage container (batch negative)
4. General cargo scale (This option is planned for the near future)

The first scale always works with the group number 00, the next scales then have the group numbers 10,20,30... and so on.

This group number is very important in the visual representation as well as for the parameterization of the different scales.

The necessary measuring channels and I/O's can be plugged in centrally directly next to the CPU as well as distributed over several hundred meters.

In this case, additional bus transmitter / receiver modules must be purchased.

The length of the individual cable segments between the different wagons must not exceed 100 metres.

A KSW-7B CPU can simultaneously evaluate up to 5 (later 8) individual scales, provided that the necessary hardware is installed.

2.1 Simple actual weight measurement (static balance)

In this operating mode, the current weight in a container or silo is simply displayed.

The weight display is scalable in wide ranges of (g,kg,t,%, etc.)

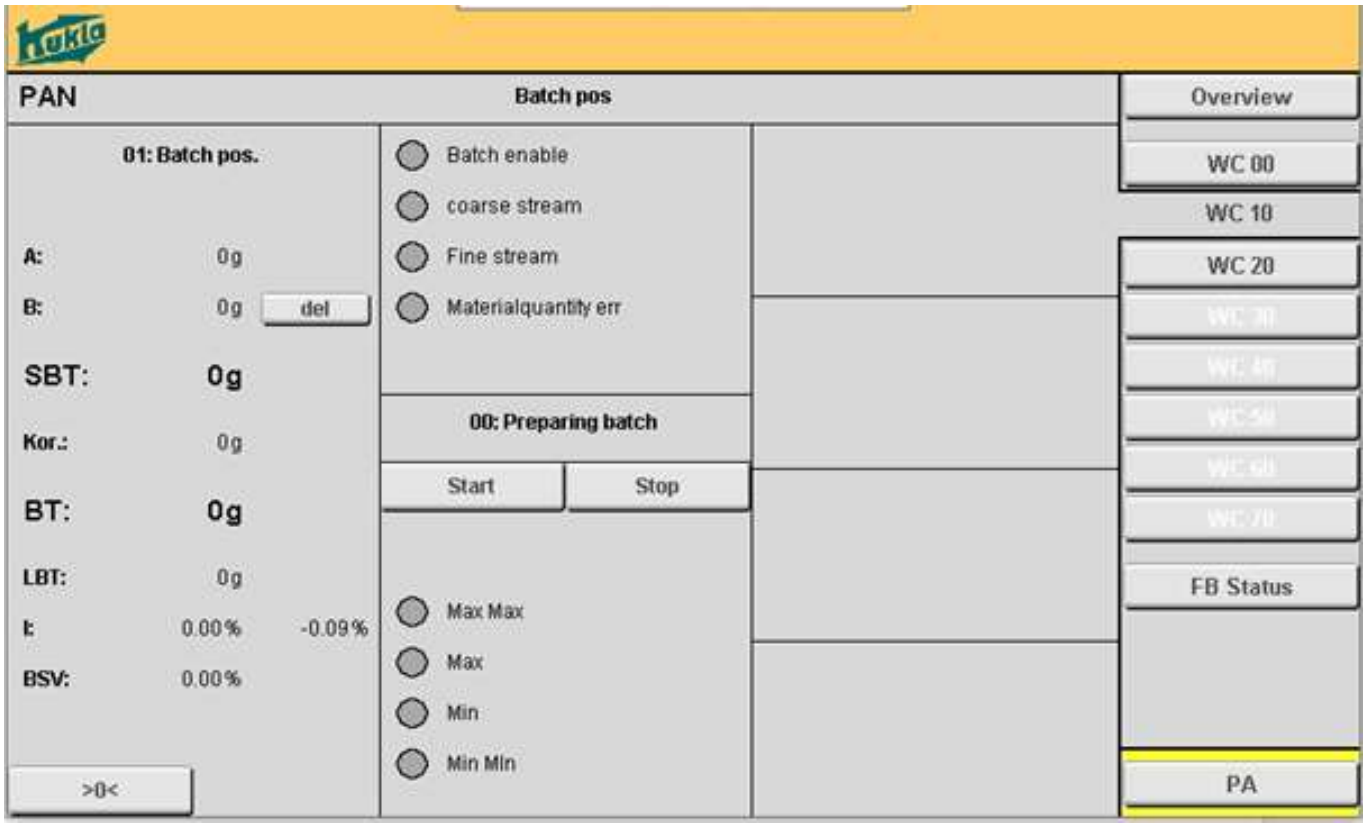
A tare option via button or external IO's is included.

Limit values can be switched individually

The actual weight can be passed on to higher-level systems via analog IO's or fieldbus.

2.2 Charging in weight containers (batch positive)

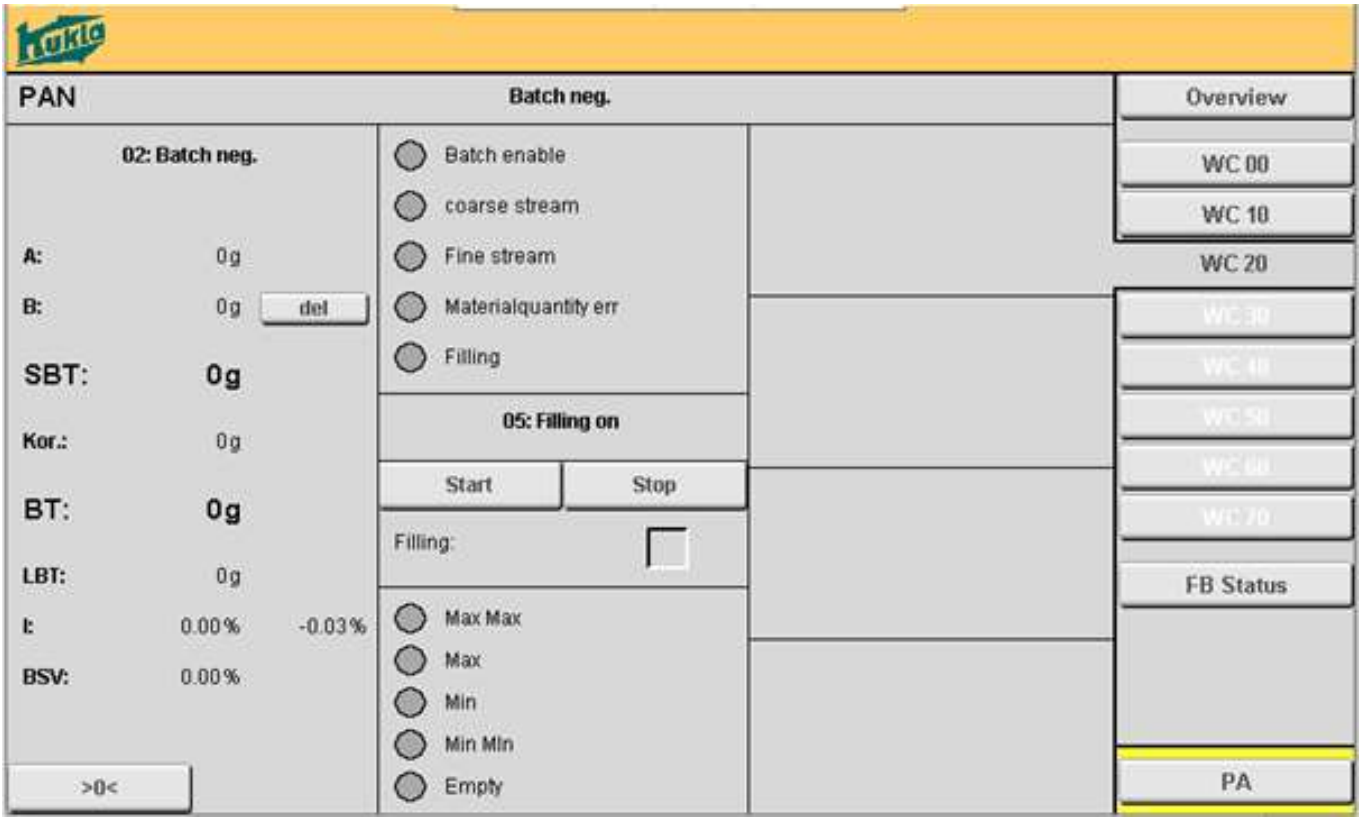
This operating mode is used for dosing batches if the weighing container is always empty at the beginning of the batch. This is the classic type of batch filling.



1. The complete batch process is controlled by the KSW-7B.
2. A batch setpoint must be specified either analogously or by fieldbus.
3. A local (PANel) and a remote controlled (REMote) operating mode are possible.
4. The process can be started or stopped via control signals (screen button, buttons, digital inputs or fieldbus command bits).
5. Various control signals (coarse current, fine current, many limit values, etc. are generated, which are also output again via physical outputs or fieldbus.
6. The coarse and fine current control can be realized via 2 digital signals or alternatively via an analog signal for speed control of a FU.
7. Two summing counters (A= non-resettable, B= resettable) are provided
8. The complete process is displayed in the overview screen and can also be controlled via it if permitted in the parameterization.

2.3 Charging from weighed storage container (batch negative)

This operating mode is used for dosing batches when the storage container is weighed, and the batch is delivered via a discharge organ (screw, rotary valve).

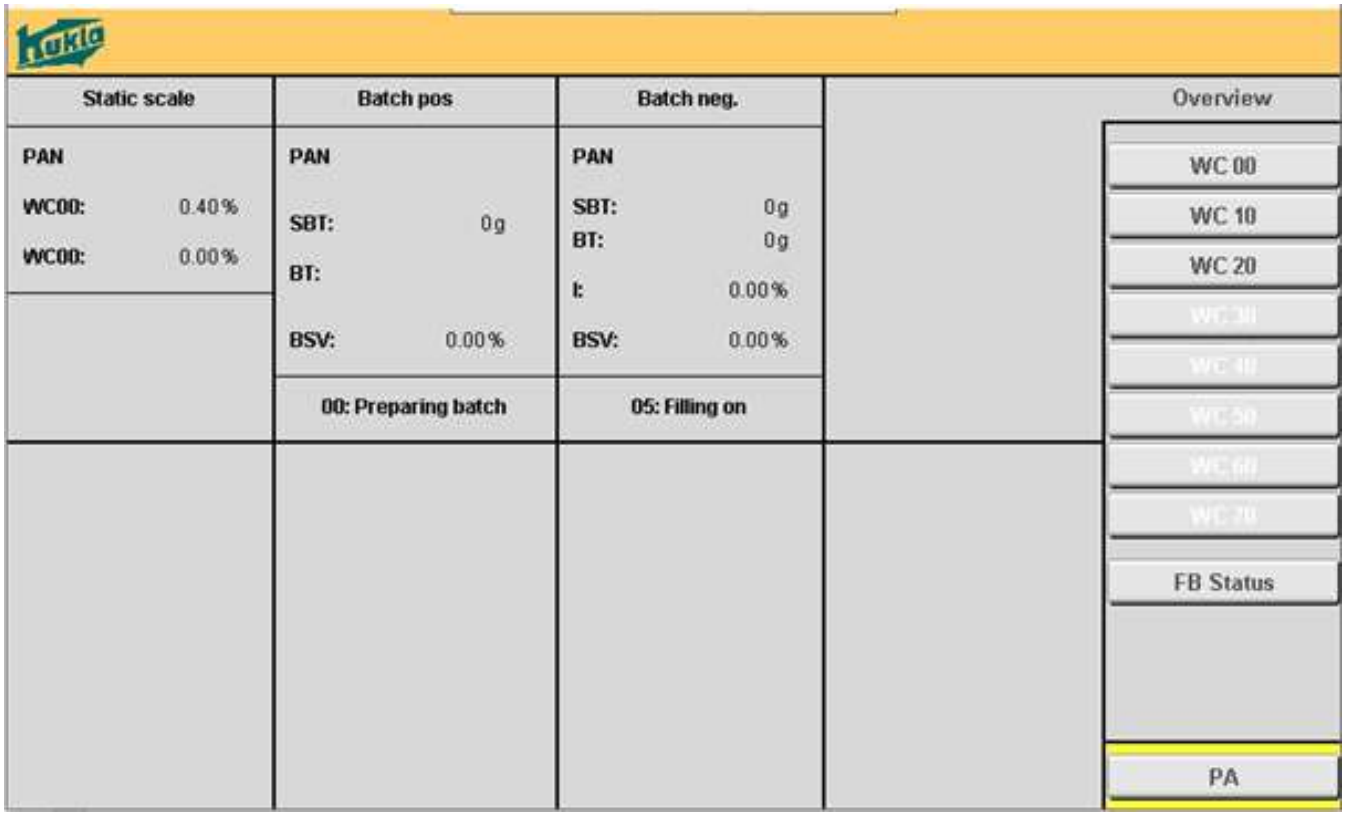


1. The complete batch process is controlled by the KSW-7B.
2. A batch setpoint must be specified either analogously or by fieldbus.
3. A local (PANel) and a remote controlled (REMote) operating mode are possible.
4. The process can be started or stopped via control signals (on-screen buttons, digital inputs or fieldbus command bits).
5. Various control signals (coarse current, fine current, many limit values, etc. are generated, which are also output again via physical outputs or fieldbus.
6. 2 summing counters (A= non-resettable, B= resettable) are provided
7. The complete process is displayed in the overview screen and can also be controlled via it if permitted in the parameterization.

.

2.4 Multiple single scales in one KSW-7B

These designs may also be mixed within a KSW-7B. It is possible that the scale 00 works in the operating mode "Static" and at the same time the scale 01 works as a summing batch scale "Batch positive" and the third scale 02 as a subtracting batch scale.

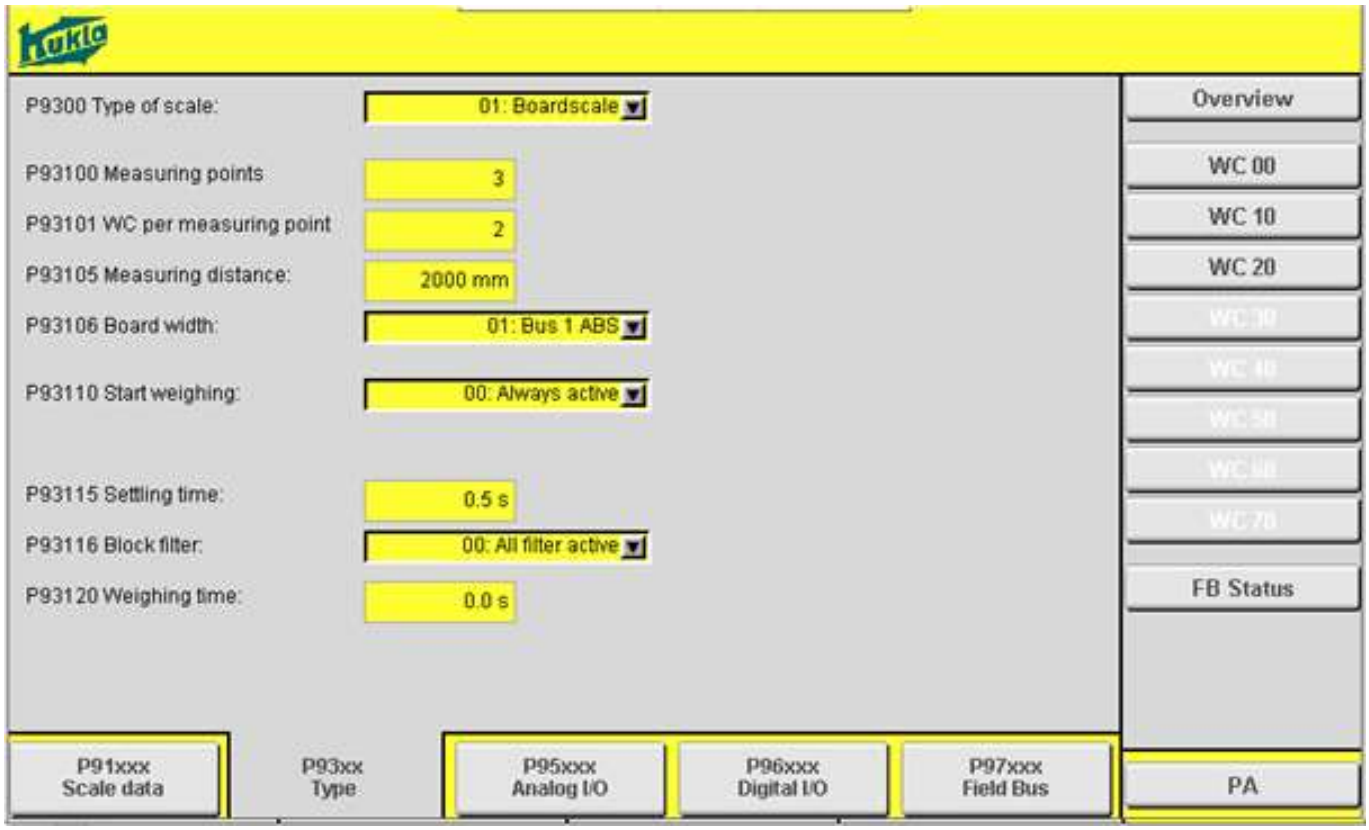


3 Mode – Board scale

In the application Board scale determined in the parameter P93000 we can connect several force transducers to a total balance.

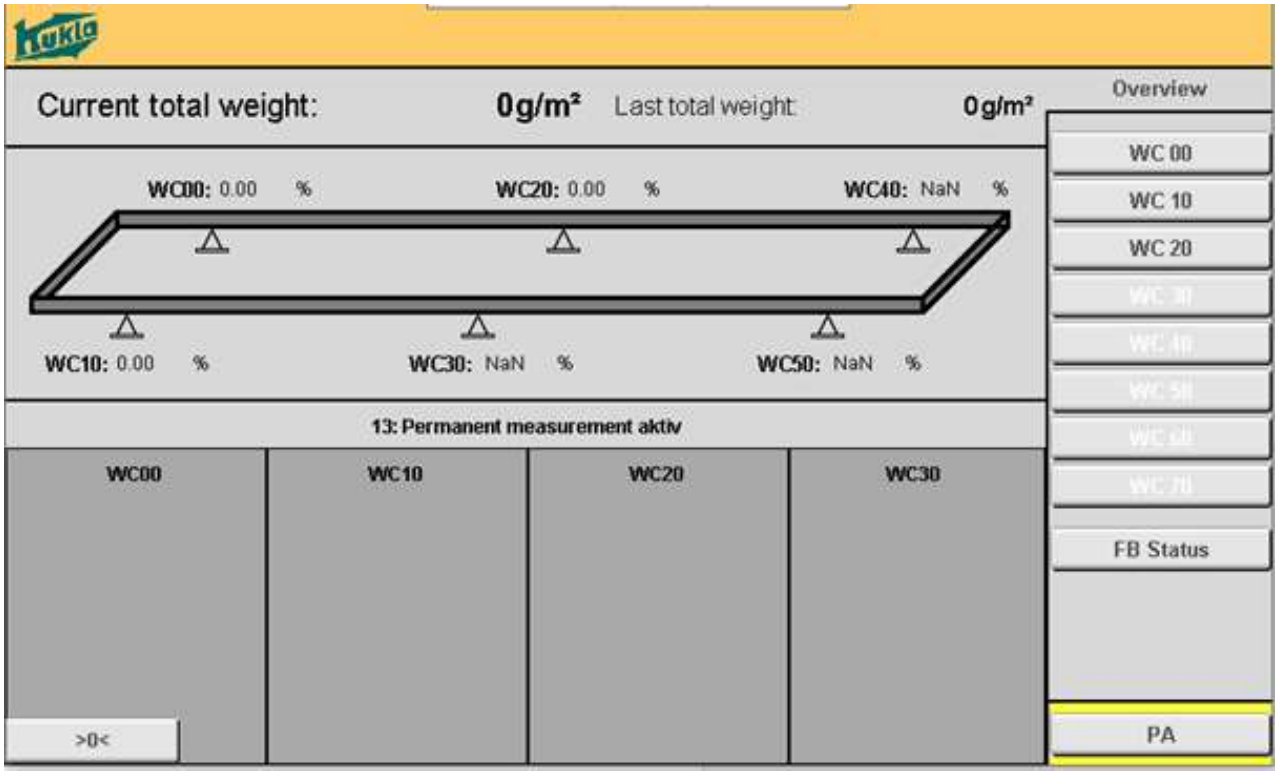
This application is primarily intended for measuring the board weight in the gypsum industry.

However, applications in the field of wood fiber boards or insulation materials are also conceivable.



P93000 Type of scale	Uses the setting shown to determine the basic application as a Board scale
P93100 Measuring points	Here the number of measuring points in direction of feeding is entered.
P93101 WC per measuring point	This parameter determines the number of measuring points perpendicular to the conveying direction
P93105 Measuring distance	Determines the length of the measuring range in the direction of conveying in millimeters.
P93106 Board width:	Source of information on the working range of the systems
P93110 Start Weighing:	it can be selected whether the measurement is always active, only when a limit value is reached or when a Startbit is activated.
P93115 Settling time:	The actual measurement begins only after the expiry of the time of calming set here
P93116 Block filter	Of course, all weight signals are filtered by the electronics hardware and by software, with the help of this parameter individual filters can be deactivated.
P93120 Weighing time	This parameter determines the duration of the actual measurement. It must be chosen in such a way that the next Board does not reach the beginning of the measuring section before completion of the entire measurement.

Example of a representation of the process values



(internal / exchange image with real display values)

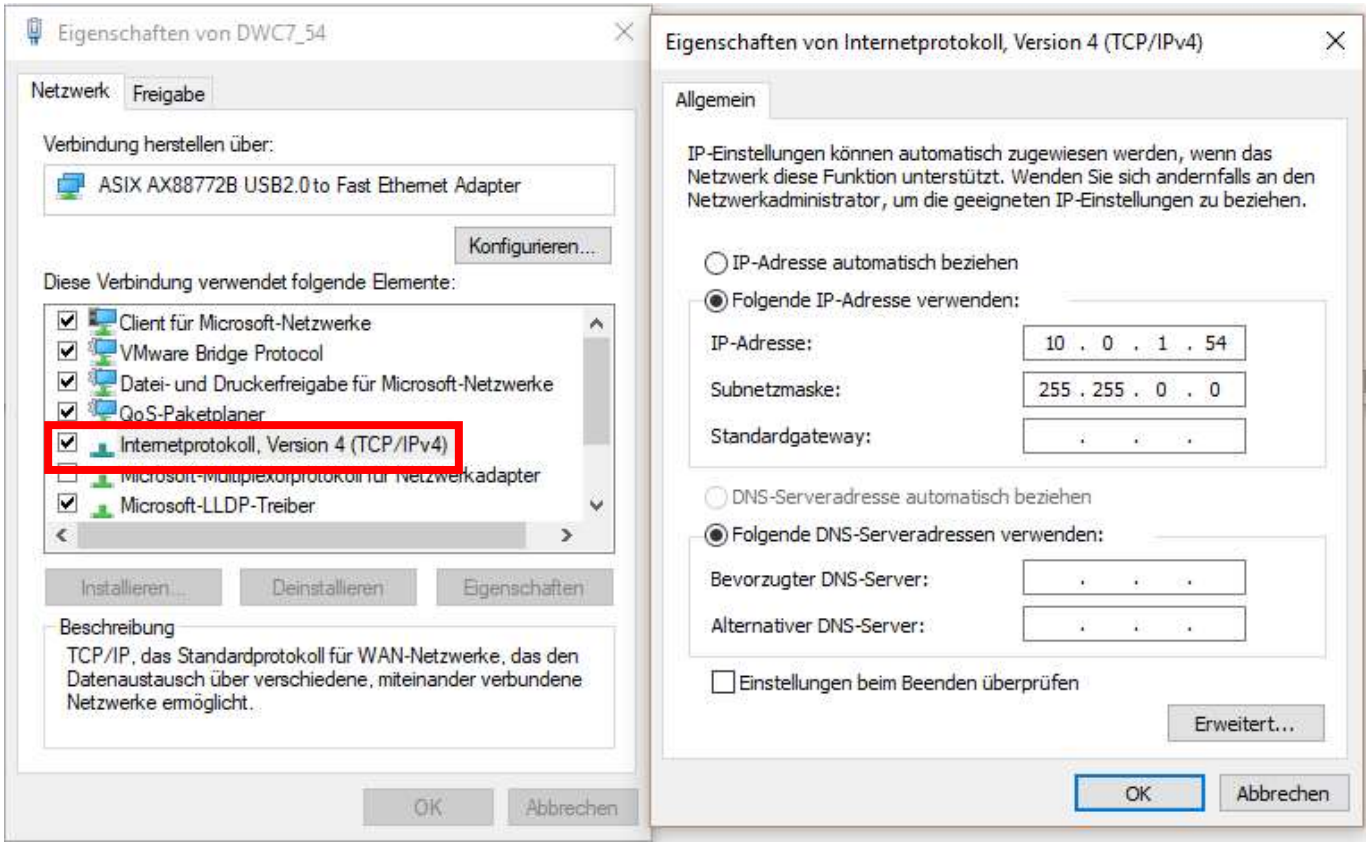
4 VNC Connection

If the KSW-7B base unit is not connected to its own operator panel, the virtual screen must be displayed via VNC client (e.g. a PC with a suitable VNC client). This device then serves as a virtual screen. A retrofit with a real terminal can be carried out at any time later because the actual data communication between terminal panel and PC is completely identical.

4.1 Network setting on the PC

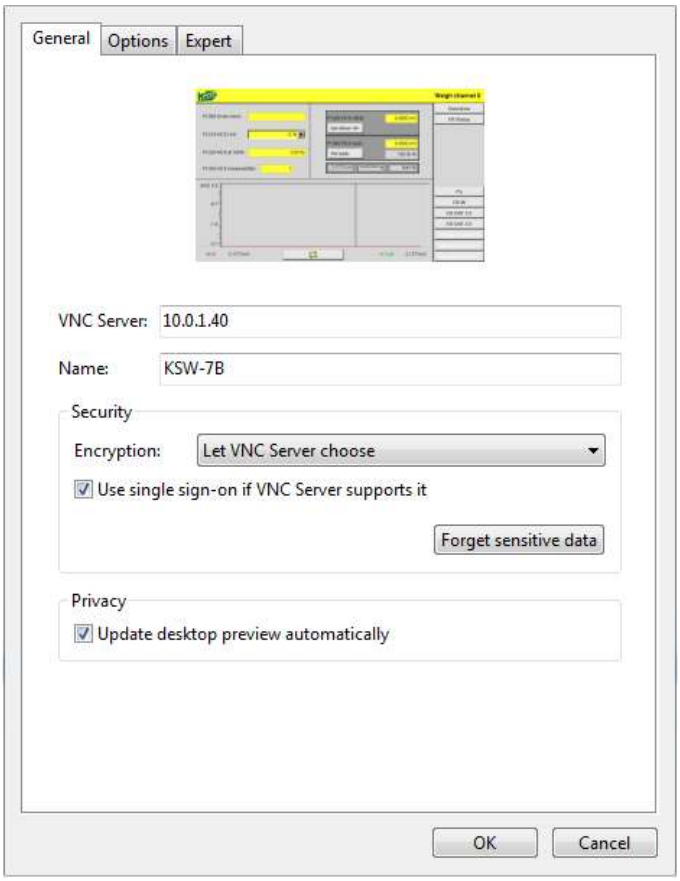
The IP address under Internet Protocol version 4 (TCP/IPv4) must be set as follows:

IP Address:	xxx.xxx.xxx.xxx	(IP Adresse darf nicht wie KSW-7B sein!!)
Subnet mask:	xxx.xxx.xxx.xxx	
Standardgateway:	not necessary	
DNS-Server:	not necessary	



4.2 Start VNC

After installing VNC Viewer, a new connection must be created.



Under VNC Server, the IP address 10.0.1.40 must be entered.
The name is freely selectable.

Plug in the network cable here (IF2)

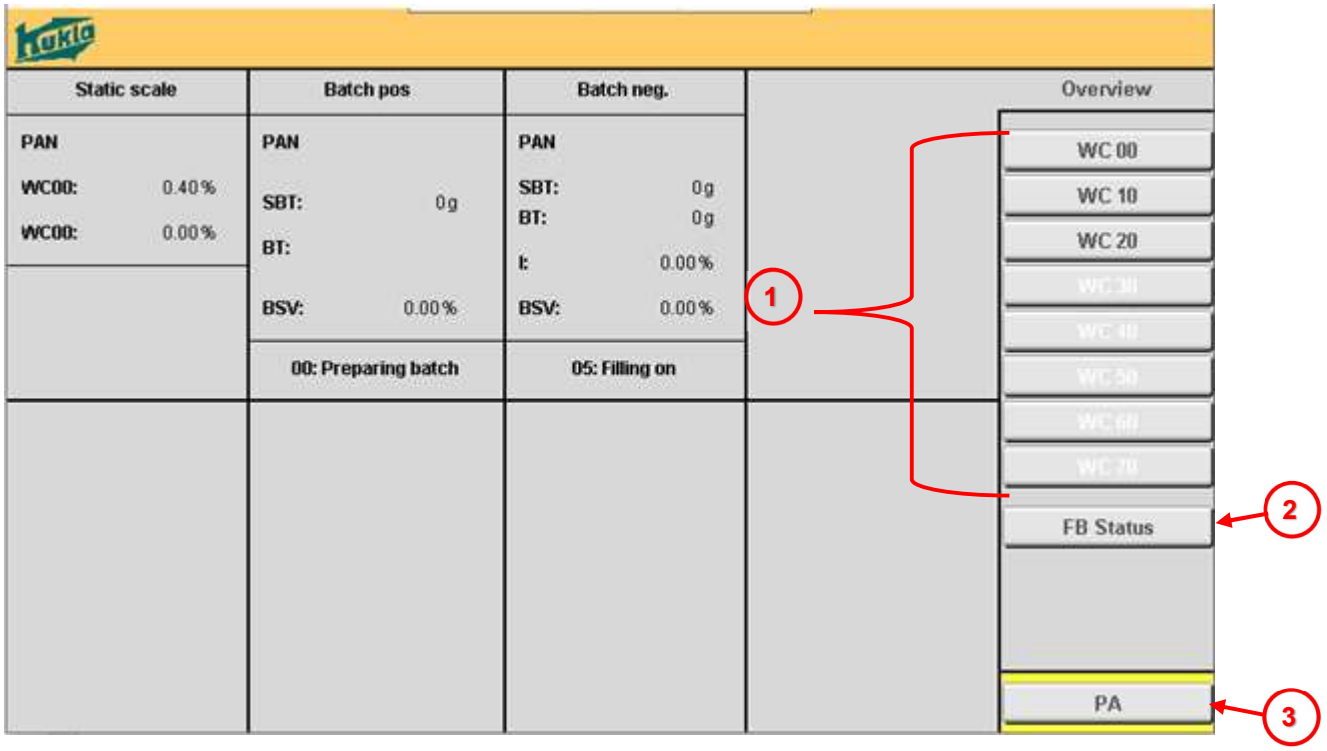
Only the lower interface may be used. The upper Ethernet interface is reserved for future use

The visualization of the KSW-7B is opened with a double click on the created connection.

5 General operation of the KSW-7B

5.1 Navigation for KSW-7B

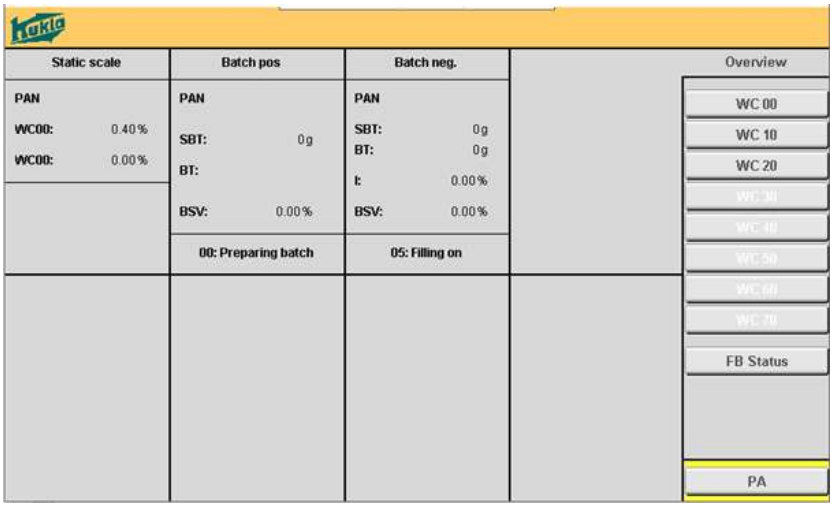
Ontop of the real pageof theoverviewimage is the navigation bar. This remains unchanged on all sidesn.
Above the navigation bar, the name of the current page is displayed in plain text.
The button ofthecurrent page is always locked in the navigation bar, this can be recognized by the color change of the texts.



1 Button of the current page. Unconnected datapoints are white colored
2 Navigation button for fieldbus overview
3 Navigation keys to parameter mode

5.2 Overview

The overview screen can look very different depending on the parameterization of the system. Basically, the system distinguishes whether several independent scales are realized in a KSW-7B or whether a single scale with several measuring points has been parameterized.

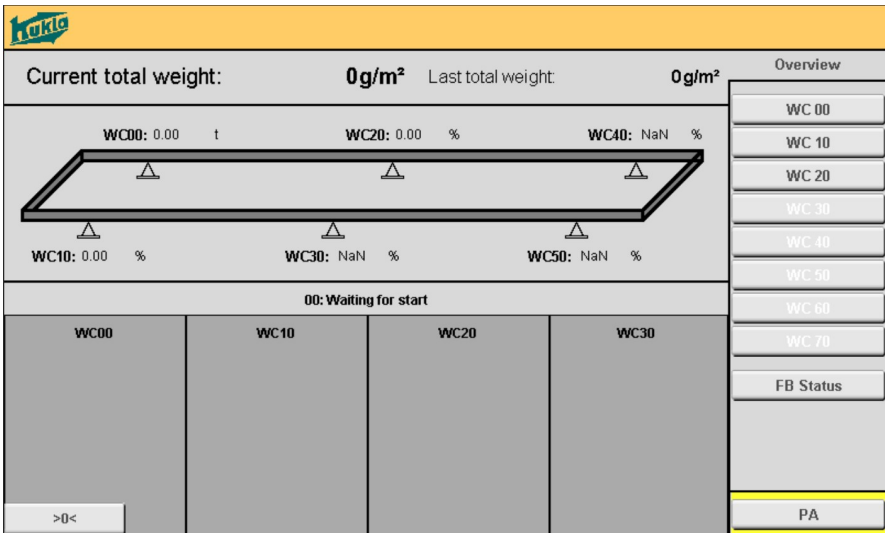


Example 1:

KSW-7B with 3 scales, each with different functionality

Example 2:

KSW-7B single scale configuration consisting of 3-6 measuring points.



6 Parameterization

The parameterization is done via the "PA" button at the bottom right

Parameters are assigned to the following scales

P01xxx-09xxx	WC00	(first scale)
P11000-19999	WC10	(second scale)
P21000-29999	WC20	(third scale)
P31000-39999	WC30	(fourth scale)
P41000-49999	WC40	(fifth scale)

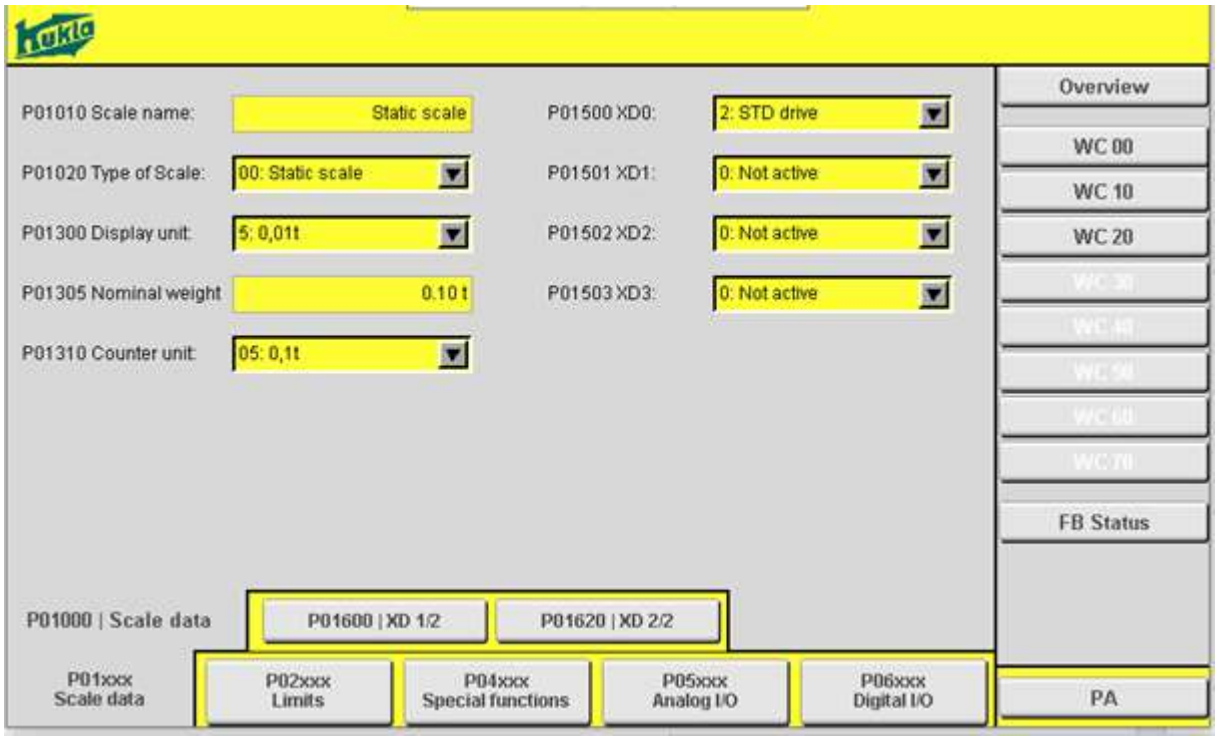
and so on.

The parameter group P9xxxx is intended for general cross-balance parameters.

6.1 Px1000 Scale Data - Parameters

This is where the general settings for a scale are made.

Example of programming a static weight measurement:

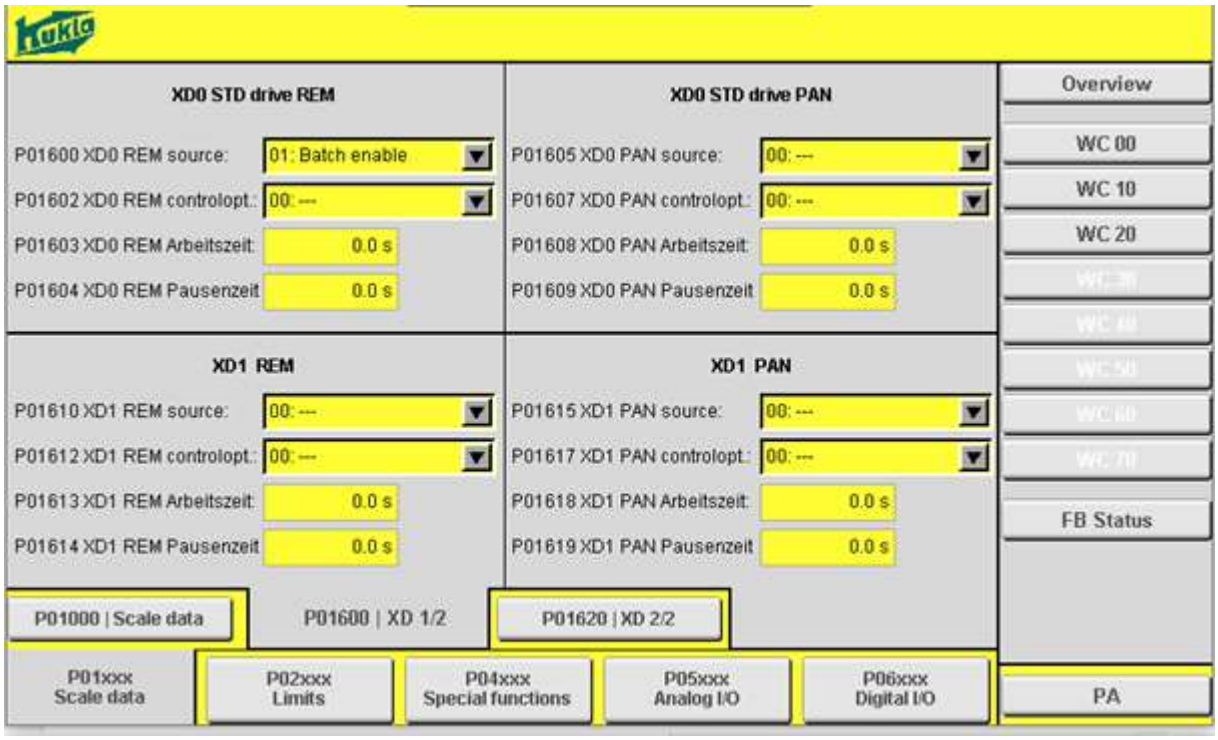


Px1010 Scale name:	Here the name of the scale must be entered as free text
Px1020 Type of Scale:	This parameter determines the function of the scale
Px1300 Display unit:	Here the unit of the display (g,kg,t,%) can be defined.
Px1305 Nominal weight	Defines the nominal range of the scale (100%).
Px1310 Counter unit:	Specifies in which counting unit the controller sums internally

6.2 Px1500 Auxiliary drives XD0 – XD3

The controller allows the control of the drives assigned to this to 4 in different operating modes. Depending on the selection in the x1500 group and the assigned x16xx parameters, the controller knows how to control the corresponding drive and when it must be switched on or off.

Px1500 XD0 Px1503 XD3	It is defined whether a main drive XD0: is connected and its functionality is determined. (e.B. slider)

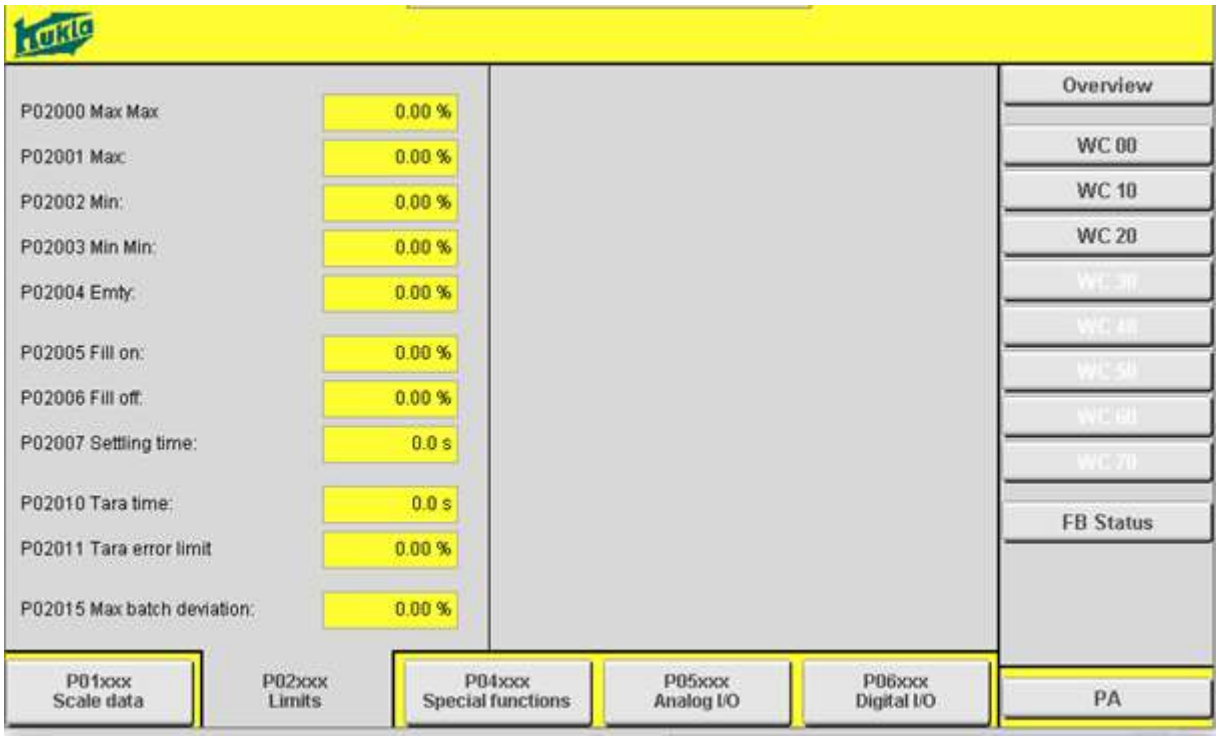


Px16y0 XDy REM Source	Determines which signal primarily activates the drive in REMote mode
Px16y2 XDy REM Controloption	Determines whether and which signal is additionally necessary to activate the drive in the corresponding operating mode (log. AND – Link)
Px16y3 XDy REM Acticetime	Sometimes it is necessary to start the actual drive a little delayed. This parameter delays the start-up according to the settime.
Px16y4 XDy REM delaytime	This parameter offers the possibility to artificially extend a signal. The signal remains active for longer for the set time even if the actual trigger is already inactive.

In Parameter group Px16y5 to Px16y9 the entire block is shown again for the operating type PANel . Thus, the controller offers the possibility to optimally adapt the drive in each type of drive.

6.3 Px2000 Limits

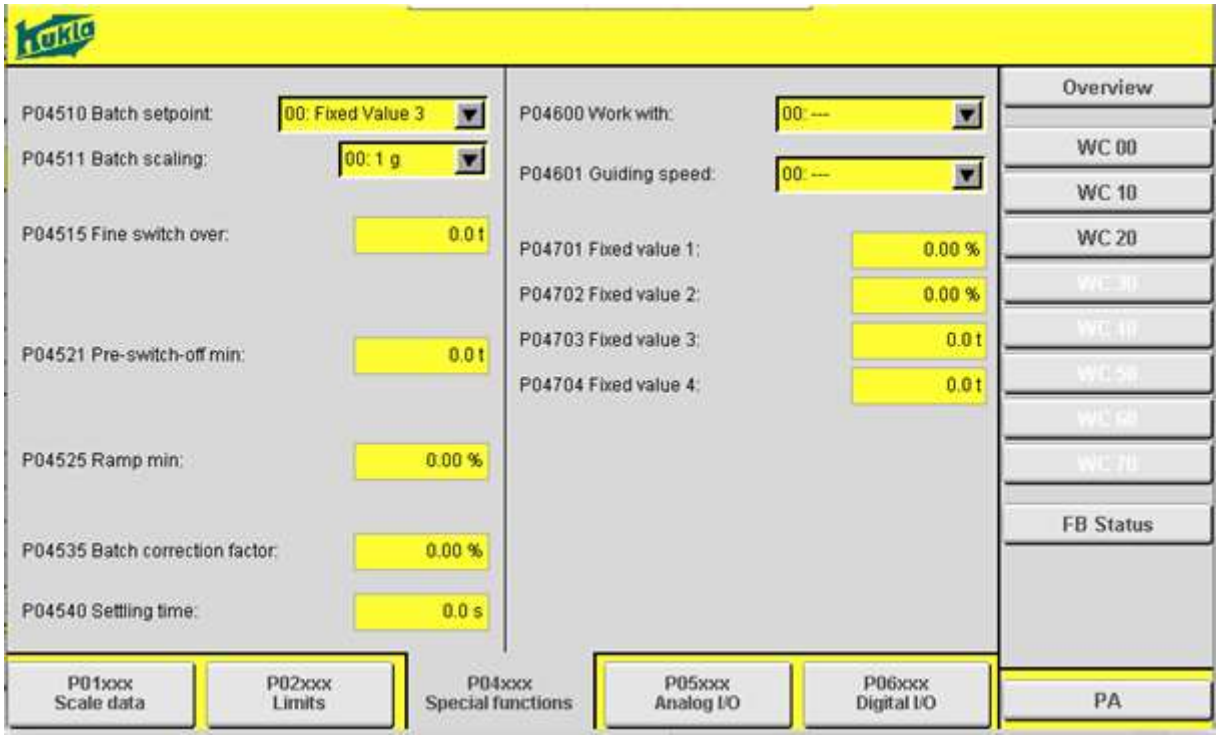
Times and limits are set here.



Px2000 Max Max:	Threshold for MaxMax status of a batch in %
Px2001 Max:	Threshold for Max Status of a Batch in %
Px2002 Min:	Threshold for min status of a batch in %
Px2003 Min Min:	Threshold for MinMin status of a batch in %
Px2004 Empty	Threshold for empty status of the container in %
Px2005 Fill on:	Threshold for refilling for subtracting scales
Px2006 Fill off:	Threshold for end of refill for subtracting scales
Px2007 Settling time:	Waiting time before a new batch can be started after refilling with subtracting scales
Px2010 Tare time:	Determines the time of the tare of the scale
Px2011 Tare error limit:	Specifies how far the current tare may deviate from the originally defined zero point.
Px2015 Max batch deviation:	Defines when a batch is detected as faulty.

6.4 Px4000 Special functions

Here, special possibilities for special applications are parameterized.

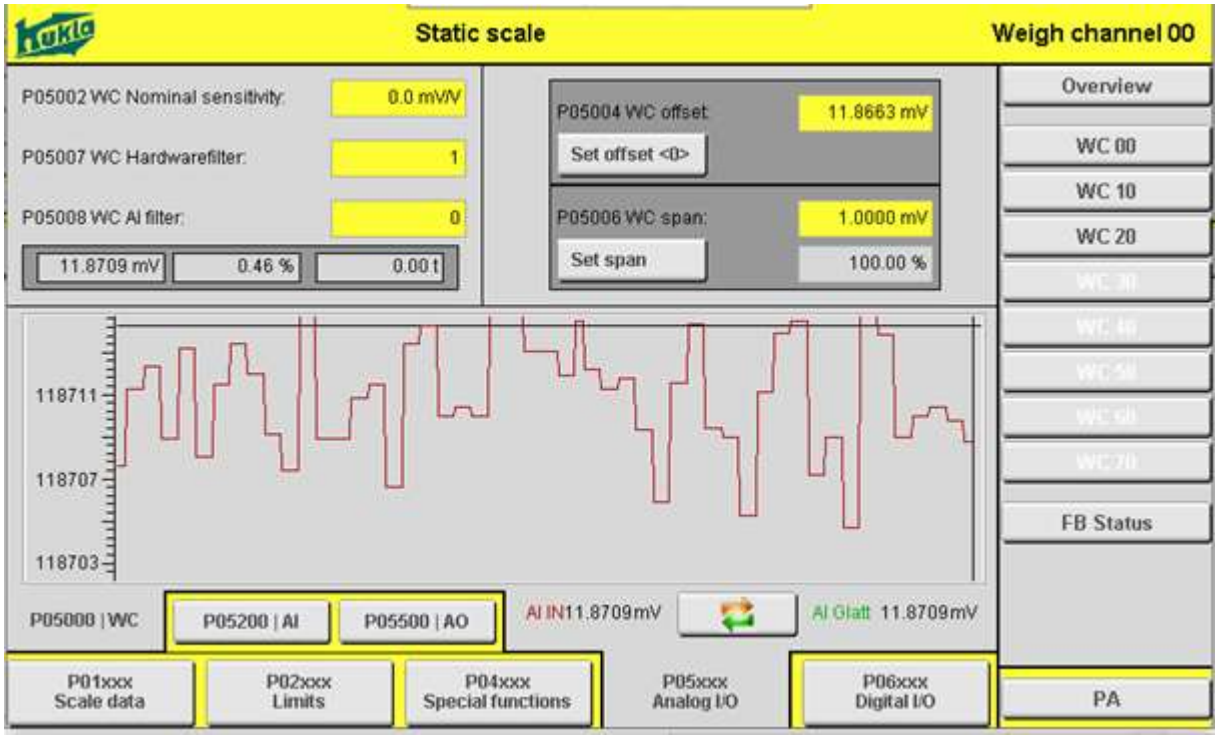


Px4510 Batch setpoint:	Determines the source of the setpoint for a batch
Px4511 Batch scaling:	Defines the resolution of the scale.
Px4515 Fine switch over	Defines the residual quantity at which the material flow is reduced to ensure an accurate achievement of the batch weight.
Px4521 Pre-switch off min	Determines by how much the fine flow is stopped before reaching the target weight. Thus, a "dripping" can be compensated as far as it is basically the same for each batch.
Px4525 Ramp Min	Determines the percentage value to which the dosage towards the end of the batch is reduced for analog fine-flow dosing devices.
Px4535 Batch correction factor	Allows a dynamic automatic adjustment of the pre-switch quantity by a certain percentage value. This value should be set to a maximum of 30%.
Px4540 Settling time	Determines the time between reaching the batch weight and its actual final settlement.

6.5 Px5000 Analog I/O

In this group, the actual measuring channel is set.

To improve the setting option, the signal is permanently displayed dynamically.



Px5002 WC Nominal characteristic value	Here the constant of the force transducer is entered (e.B. 2mV/V)
Px5004 WC Offset	Defines the mV value at which the scale basically recognizes 0
Px5006 WC Span	Defines how many mV correspond to the nominal range (0 and 100%)
Px5007 Hardware Filter	Specifies how the signal on the force transducer measurement card itself is attenuated
Px5008 WC AI Filter	Specifies how the signal is attenuated by software

Using the "Set offset" and "Set span" buttons, the zero point and the area can be measured automatically.

The mV values shown may differ in the microvolt range from post-measurements with multimeters.

7 Fieldbus Communication

Optionally, a KSW-7B can be equipped with various fieldbus modules.

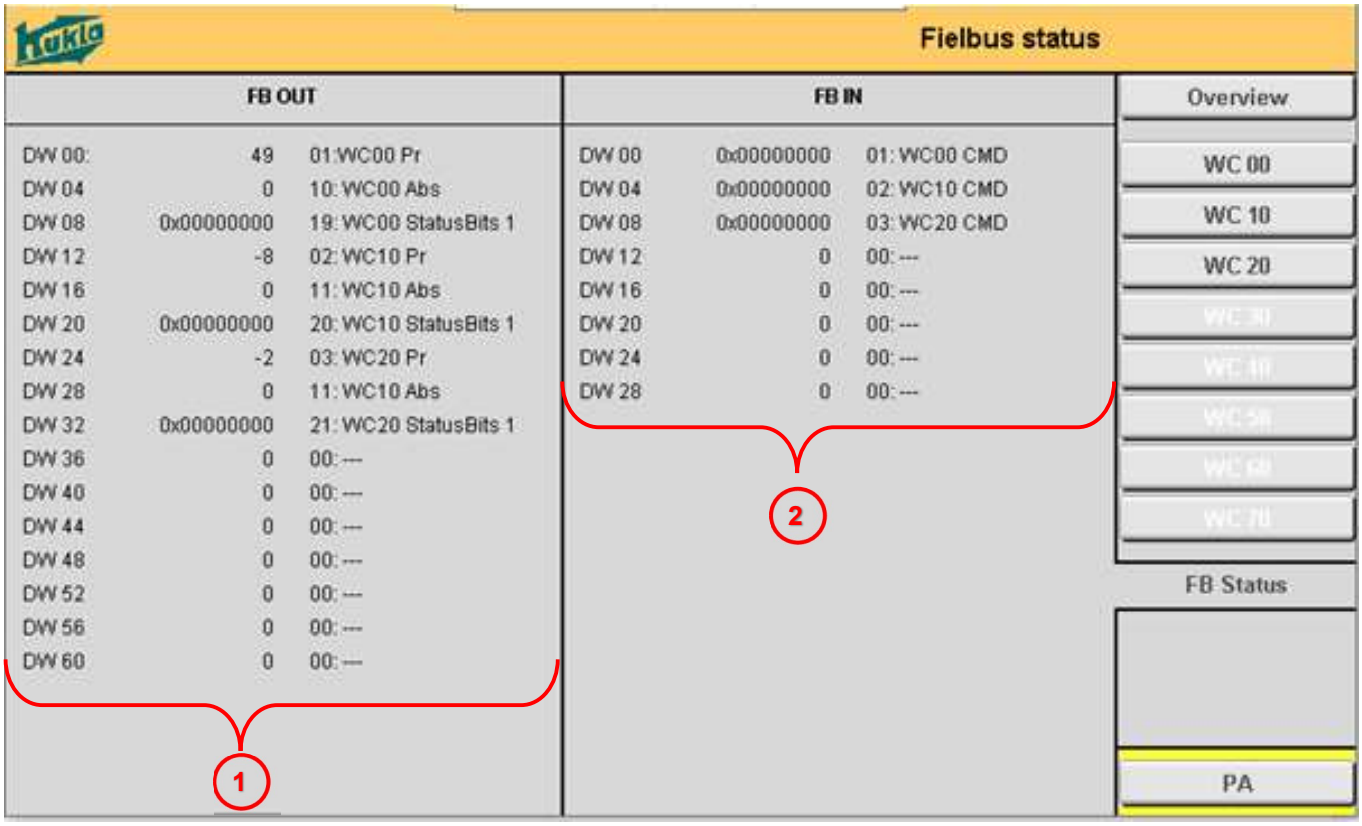
Device with ProfibusDP - Modul (left side)

Device with ProfiNet module or EthernetIP

EthernetIP is already available, DeviceNet would be possible on request.

7.1FB Status

It is possible to control the data transfer of the fieldbus interface under "FB status".



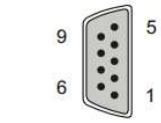
1 Data sent by the KSW-7B. The parameterization of the data fields is described in point 7.4
2 Data sent to KSW-7B. The parameterization of the data fields is described in point 7.3

7.2 ProfibusDP - General

The scale computers of the KSW-7B series can be equipped with a ProfiBus DP interface. This interface must be specified when ordering. Subsequent installation is also possible in consultation with the manufacturer. The interface is licensed by the manufacturer KUKLA and complies with the ProfiBus standard 50170. In addition to many other communication solutions, a DP V1 or a ProfiNet interface can also be implemented as an option.

7.3 ProfibusDP data transfer rate / plug assignment

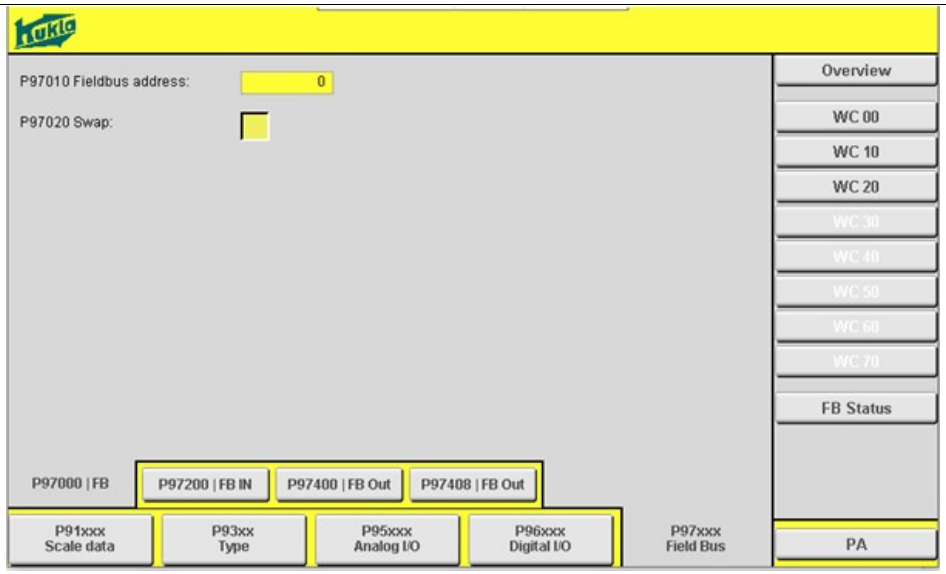
The interface supports the common standardized data transfer rates up to 12 MBit. At higher transmission speeds, it is essential to use approved plugs.

Schnittstelle	Anschlussbelegung		
	Pin	RS485	
 9-polige DSUB-Buchse	1	Reserviert	
	2	Reserviert	
	3	RxD/TxD-P	Daten[1]
	4	CNTR-P	Transmit Enable
	5	DGND	Potenzialgetrennte Versorgung
	6	VP	Potenzialgetrennte Versorgung
	7	Reserviert	
	8	RxD/TxD-N	Daten\[2]
	9	CNTR-N	Transmit Enable\
	CNTR ... Richtungsumschaltung für externe Repeater		

The use of standardized ProfiBus DP connectors is recommended. The cable ends must be terminated with terminating resistors.

7.4 ProfibusDP – Node Address

The station address is set directly in the parameter group P97xxx.



The parameter P97010 is relevant. Addresses between 3 and 125 may be set.

The parrameter P97020 swap allowsa change of the address where the lowest byte is stored.
(see Enidianess)

If the number 126 is set, all associated fieldbus parameters of the group P97xxx become inactive and cannot be used.

AFTER CHANGING THE FIELDBUS-ADDRESS, THE SCALE COMPUTER MUST BE REMOVED FROM THE VOLTAGE FOR ABOUT 5 SECONDS SO THAT THE NEW ADDRESS IS ALSO TAKEN OVER!

7.5 ProfiNet – IP-Adresse

Die Stationsadresse muss über ein geeignetes Setup-Tool vom Master eingestellt werden.

7.6 ProfibusDP - LED Statusmeldungen

Figure	LED	Color	Status	Description
	STATUS	Green	On	Interface module active
		Red	On	CPU starting up
	RxD	Yellow	On	The module receives data via the PROFIBUS DP slave interface
	TxD	Yellow	On	The module sends data via the PROFIBUS DP slave interface

7.7 Data structure / consistence

Please, find details concerning Data structure in the general part of section "General data structure “

7.8ProfibusDP - GSD-Datei

The necessary device master data is stored on the homepage www.kukla.co.at in the download area or can be obtained directly from the manufacturer. Data formats other than those described in this documentation are not possible.

7.9 ProfiNet - GSDML-Datei

The necessary device master data is stored on the homepage www.kukla.co.at in the download area or can be obtained directly from the manufacturer. Data formats other than those described in this documentation are not possible.

7.10 DeviceNet - EDS-Datei

The necessary device master data is in preparation.

7.11 EthernetIP - EDS-Datei

The necessary device master data must be assembled manually.
A ready-made EDS is currently not planned.
However, the same data structure applies as in the other bus systems.

8 General data structure

In general, 8 double words must always be transmitted by the higher-level controller as target data.

Since the scale computer can usually collect a lot of different data, 16 duplicate words are always reported back to the higher-level system. Each process data double word can be individually assigned to which value is sent exactly on this field via the corresponding parameter number.

8.1 Setpoint and process data fields

	PLC > KSW - 7	KSW - 7 > PLC
00 Double word	BusIn DW00 (P97200)	BusOut DW00 (P97400)
01 Double word	BusIn DW04 (P97201)	BusOut DW04 (P97401)
02 Double word	BusIn DW08 (P97202)	BusOut DW08 (P97402)
03 Double word	BusIn DW12 (P97203)	BusOut DW12 (P97403)
04 Double word	BusIn DW16 (P97204)	BusOut DW16 (P97404)
05 Double word	BusIn DW20 (P97205)	BusOut DW20 (P97405)
06 Double word	BusIn DW24 (P97206)	BusOut DW24 (P97406)
07 Double word	BusIn DW28 (P97207)	BusOut DW28 (P97407)
08 Double word		BusOut DW32 (P97408)
09 Double word		BusOut DW36 (P97409)
10 double word		BusOut DW40 (P97500)
11 Double word		BusOut DW44 (P97501)
12 Double word		BusOut DW48 (P97502)
13 Double word		BusOut DW52 (P97503)
14 Double word		BusOut DW56 (P97504)
15 double word		BusOut DW60 (P97505)

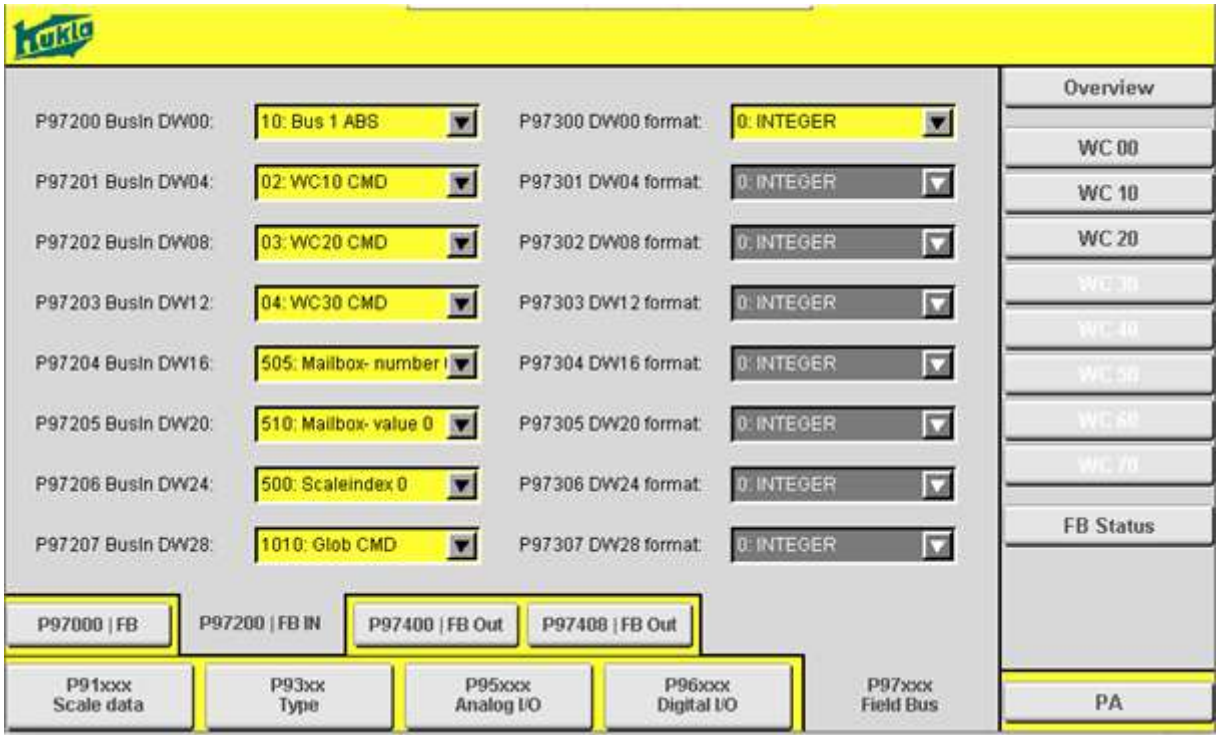
Percentages are usually transmitted as values with 1/100 percent resolution (e.B. 74.83 % corresponds to the numerical value 7483).

Alternatively, output in floating-point format is also possible for all numerical values. The settings for this are made in the parameter group P973xx and P975xx.

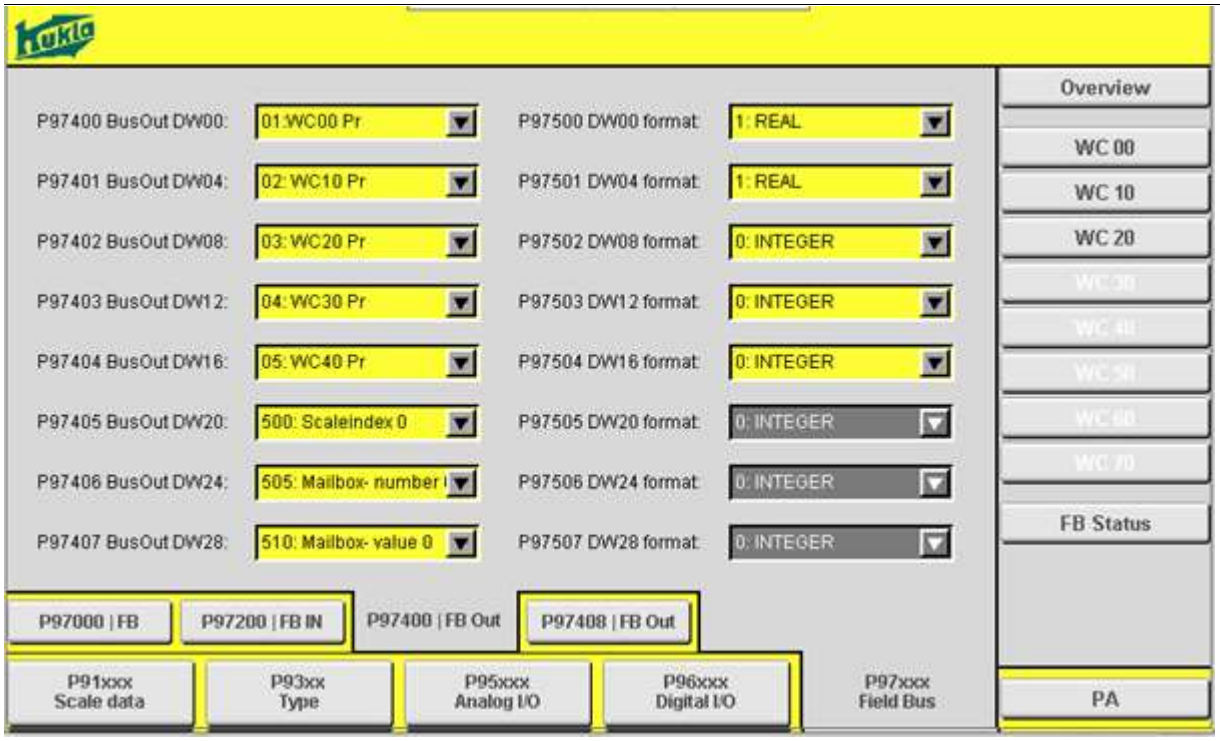
8.2 Recommended data structure (for standard applications only)

(For details see the following chapters)

00 Double word	01: WC00 CMD	28: WC00 Control Bits 1
01 Double word	10: Bus 1 ABS	10: WC00 ABS
02 Double word	02: WC10 CMD	55: WC00 Istcharge
03 Double word	11: Bus 2 ABS	37: WC00 Dosing setpoint
04 Double word	03: WC20 CMD	46: WC00 Batch Step
05 Double word	12: Bus 3 ABS	29: WC10 Control Bits 1
06 Double word	00: ---	11: WC10 ABS
07 Double word	00: ---	56: WC10 Istcharge
08 Double word		38: WC10 dosing setpoint
09 Double word		47: WC10 batch step
10 double word		30: WC20 Control Bits 1
11 Double word		12: WC20 ABS
12 Double word		57: WC20 Istcharge
13 Double word		39: WC20 dosing setpoint
14 Double word		48: WC20 batch step
15 Double word		00: ---



Here is the example of an alternative parameterization of the input range via the parameter group P9720x.



The output data fields in the direction of the higher-level controller are also freely adjustable under the parameter group P940xx.

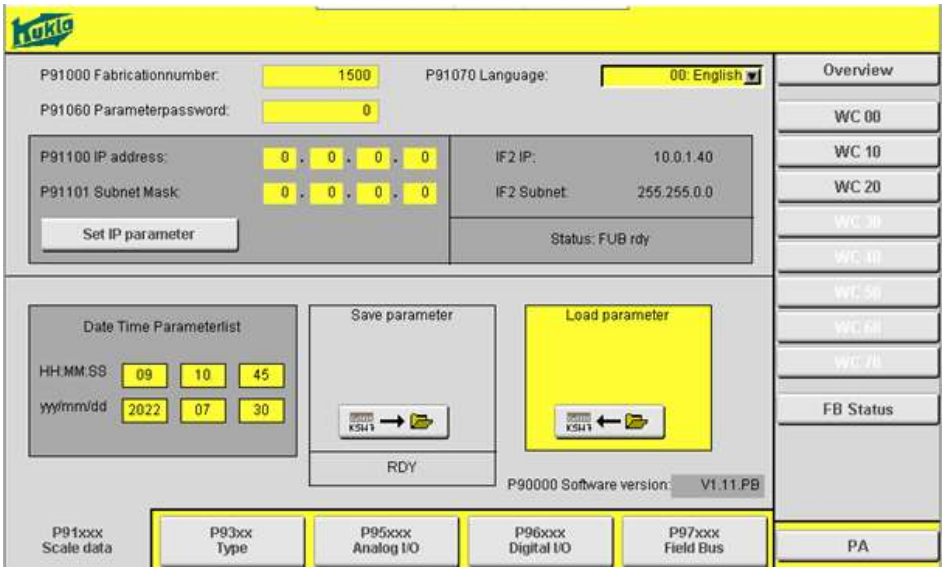
8.3 Control and status bits (byte order / endianness)

Byte order (*byte order* or endianness)denotes the storage organization for INT and DINT value. This is especially important when evaluating control bits!

Bit fields (status and control keywords) are usually transmitted as double words by the KSW-7B base device. The first bit (00 xxxxx) is usually located on the lowest byte address (0.0-0.7,1.0-1.7, 2.0-2.7,3.0-3.7) for AB controllers. For Siemens-S7 controllers, the first bit starts at the highest quality address (3.0-3.7,2.0-2.7, 1.0-1.7,0.0-0.7)

9 PARAMETER DESCRIPTION

9.1 General parameter up to 9xxxx



Parameter numbers of the group P9xxxx are used for general parameterization of the balance.

P91070	Language		INT
	Selection: 00: English 01: German	Range:	0-1
Description:	this parameter determines the language of the visualization		

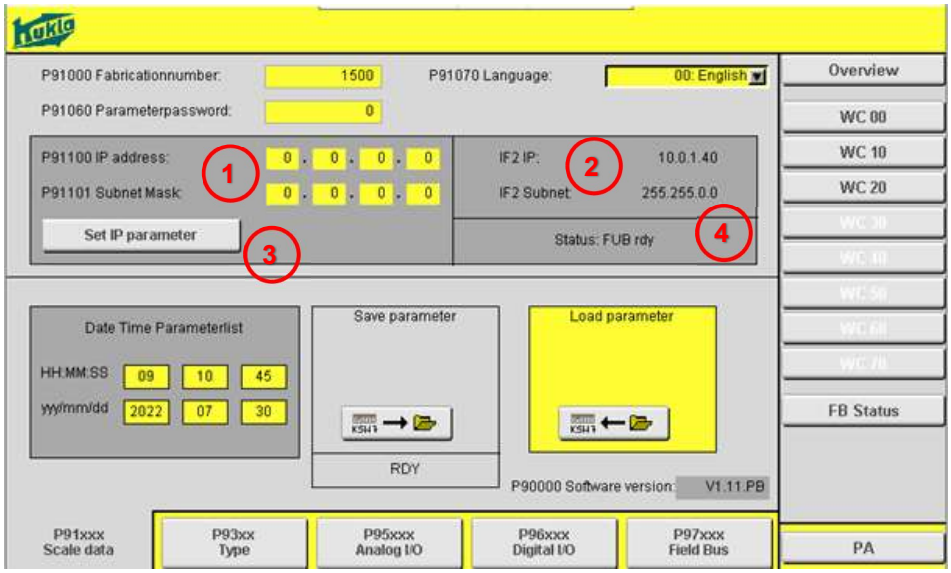
P91000	Serial number		DINT
	Selection:	Range:	0-2147483647
Description:	This parameter determines the manufacturing number of the balance		

P91100	IP address		
	Selection: 0.0.0.0	Range:	0.0.0.0 – 255.255.255.255
Description:	this parameter determines the ip address of the if2 interface		
Hint:	**The IP address in the default is 10.0.1.40** **The default IP address is set as soon as the KSW7 is restarted** without a **plugged** card!!		
Dependence:			

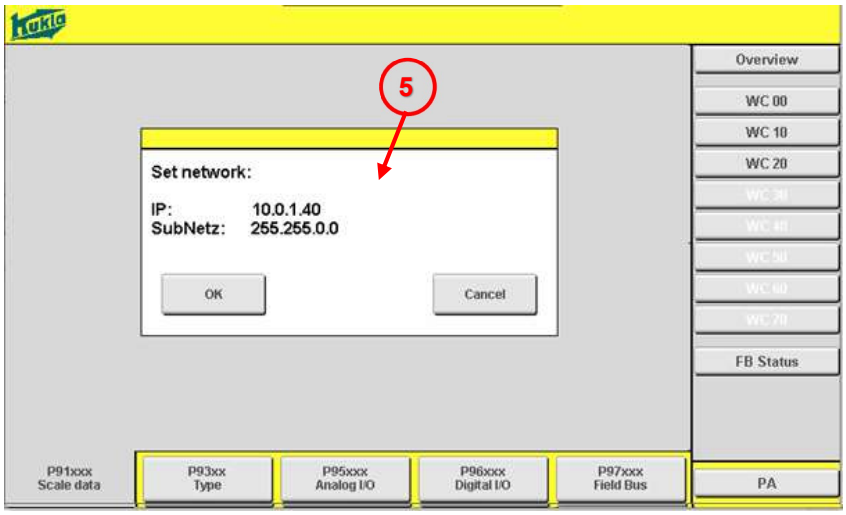
P91101	Subnet Mask		
	Selection: 0.0.0.0	Range:	0.0.0.0 – 255.255.255.255
Description:	this parameter determines the subnet mask of the if2 interface		
Hint:	**The IP address in the default is 255.255.0.0** **The default subnet mask is set as soon as the KSW-7B is restarted without a plugged card!!**		

9.2 Change the IP address

1. Enter the desired IP parameters in the respective fields
2. Press the "Set IP Parameters" button
3. Confirm the specified parameters in the confirmation window
4. If the IP parameters are successfully converted, the VLC viewer will lose the connection



1 IP parameters to be set for the IF2 interface of the KSW-7B
2 Current ip parameters of the IF2 interface
3 Button to set the IP parameters
4 Status of the function module for the IF2 configuration
5 Confirmation window of the IP parameters

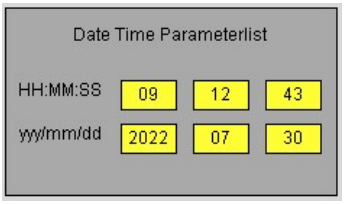


Reset ip parameters to default

1. Taking the weighing electronics off the current
2. Pull all modules, except the supply module,
3. Start up the weighing electronics until all LEDs are green
4. Remove from the Net again
5. Plug all modules back into the electronics
6. After this ramp-up of the electronics, the IF2 interface will be accessible with the default values
   IP: 10.0.1.40
   SubNet: 255.255.0.0

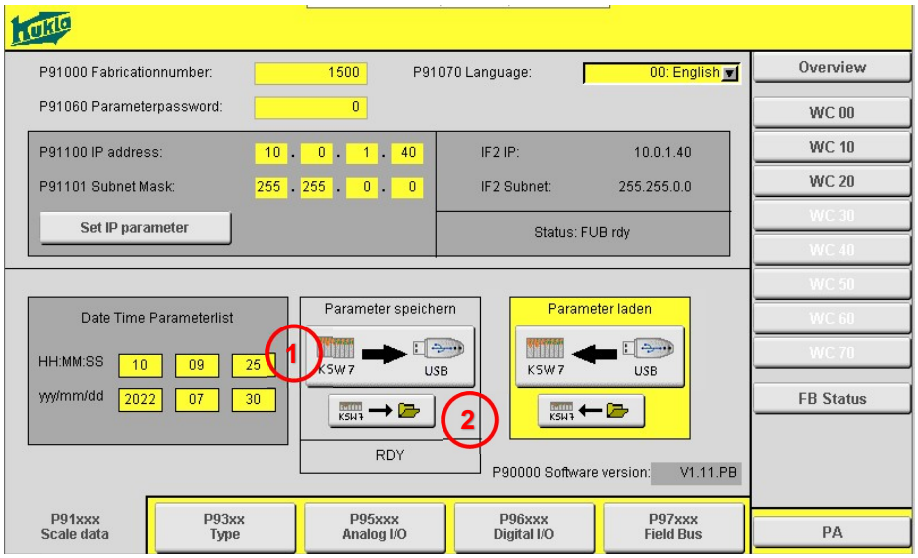
9.3 Set time and date

The current time is important for the creation of the parameter expression because the file name is formed from the manufacturing number and the current time information.



9.4 Create parameter list / USB or FTP

All currently set parameters are stored in the parameter list. This parameter list can either be created on a USB stick that is plugged DIRECTLY INTO THE CPU. Alternatively, it can also be stored in the internal file system and downloaded from there via FTP protocol.
The parameter list is a CSV.
The name of this file is composed of the manufacturing number of the language and the current date and time.



To create the parameter list:

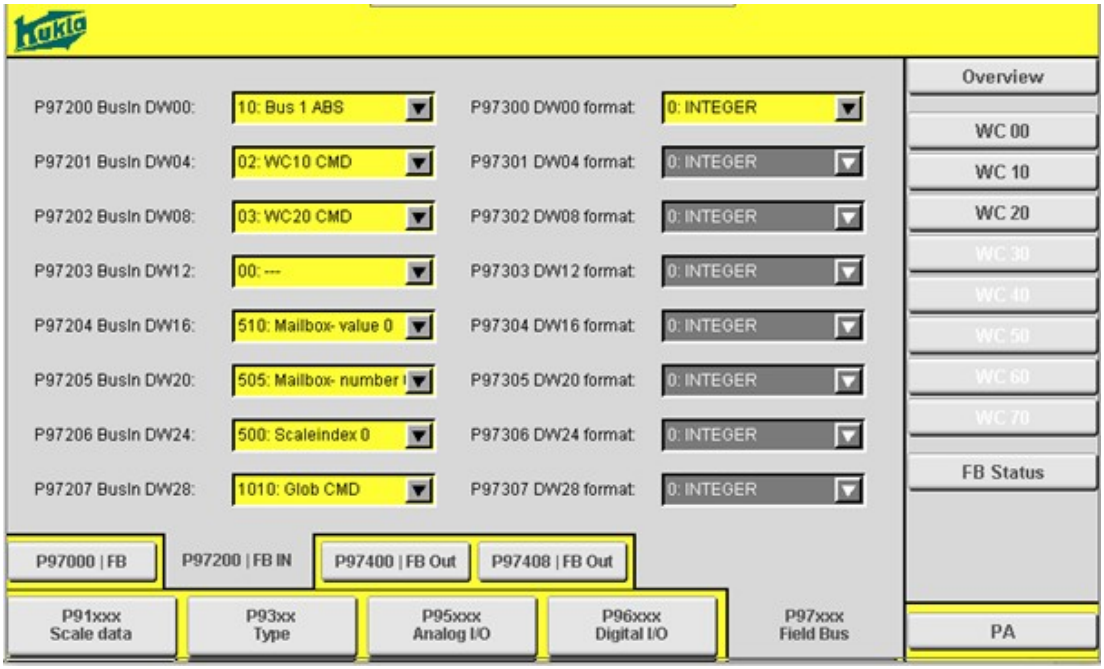
1. Check time and date
2. Press key 1 "Create parameter list" to create the parameter expression in the main directory of the plugged in USB memory
3. Alternatively, press key 2 to create the parameter expression in the main directory of the internal file system
4. During the creation of the parameter list, this button is locked
5. When RDY is displayed again in the progress bar, the process is finished

9.5 General Fieldbus parameters 97xxx

The parameter group **"Fieldbus"** allows the setting and
Change of communication possibilities to a central control.

P9710	Fieldbus address:		INT
	Selection: Profibus 1..124	Tomboy:	1-125
Description:	This parameter determines the Profibus address.		
Hint:	126 / Neutral address		
Branch:			

9.6 Setpoints and Commands via Fieldbus (P972x)



This example shows the command words for 3 cars. Data communication takes place via integers in the format double integer (4byte).

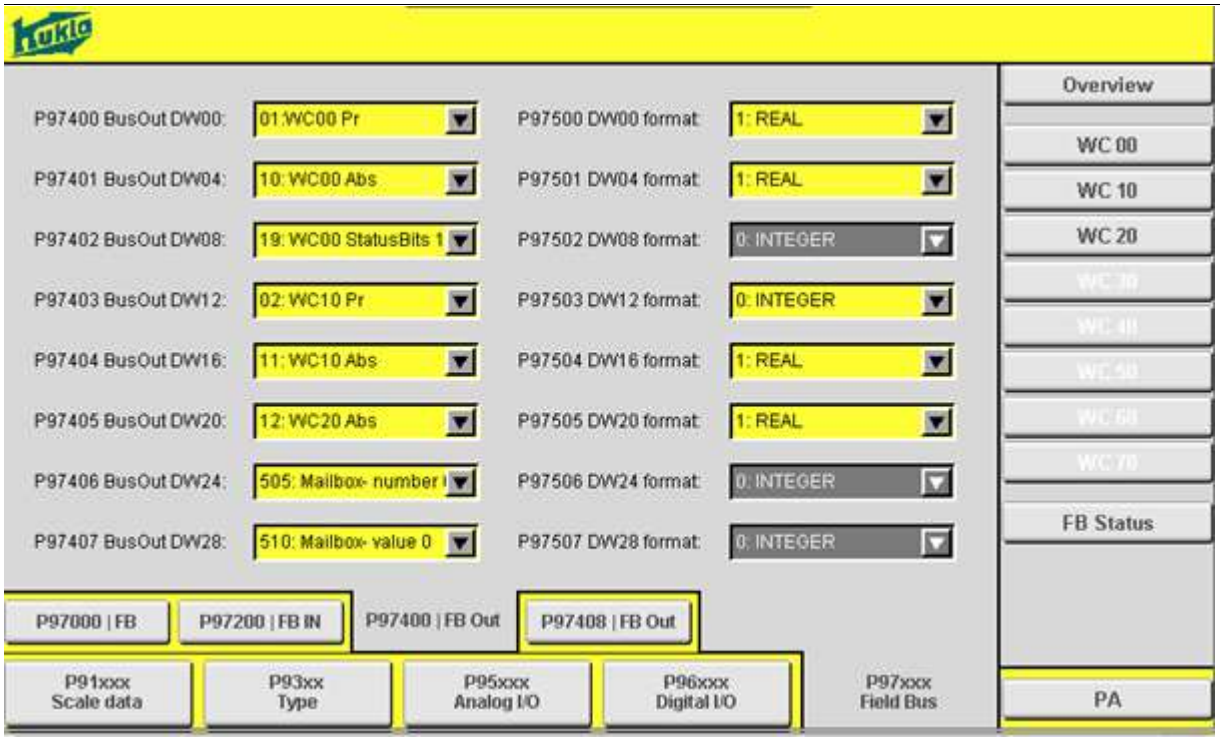
P9720x – P9727x	Bus IN DW0 – DW28:		INT
	Selection: 00: ---------- 01: WC0 CMD 02: WC1 CMD 03: WC2 CMD 04: WC3 CMD 05: WC4 CMD 06: WC5 CMD 07: WC6 CMD 08: WC7 CMD 09: --- 10: Bus 1 ABS 11: Bus 2 ABS	Range:	0-8

12: Bus 3 ABS
13: Bus 4 ABS
14: Bus 5 ABS
15: Bus 6 ABS
16: Bus 7 ABS
17: Bus 8 ABS
18: ---
19: BUS 1 [%]
20: BUS 2 [%]
21: BUS 3 [%]
22: BUS 4 [%]
23: BUS 5 [%]
24: BUS 6 [%]
25: BUS 7 [%]
26: BUS 8 [%]
27: ---
18: Scale index 0
29: Scale index 1
30: Scale index 2
31: Scale index 3
32: ---
33: Mailbox number 0
34: Mailbox number 1
35: Mailbox number 2
36: Mailbox number 3
37: ---
38: Mailbox value 0
39: Mailbox value 1
40: Mailbox value 2
41: Mailbox value 3

Description:	This parameter determines how the first input setpoint double word DW0- DW28 of the fieldbus setpoint range is used.
Hint:	Details about the function can be found in the previous chapters.

9.7 Actual values and control/status bits via fieldbus (P974xx)

WC0-7 CMD	*Digital control commands to the scale computer*	
	0x00000001	*00: ---*
	0x00000002	*01: Set zero point <0> START*
	0x00000004	*02: Start buoyancation*
	0x00000008	*03: Reset counter B*
	0x00000010	*04: Max Max*
	0x00000020	*05: Max*
	0x00000040	*06: Min*
	0x00000080	*07: Min Min*
	0x00000100	*08: Empty*
	0x00000200	*09: Start batch*
	0x00000400	*10: Interrupt batch*
	0x00000800	*11: Batch Cancellation*
	0x00001000	*12: Fine flow*
	0x00002000	*13: Empty the system*
	0x00004000	*14: ---*
	0x00008000	*15: REM*
	0x00010000	*16: Drive lock*
	0x00020000	*17: Emergency stop active*
	0x00040000	*18: Message running*
	0x00080000	*19: Jog*
	0x00100000	*20: Opto 0*
	0x00200000	*21: Opto 1*
	0x00400000	*22: Opto 2*
	0x00800000	*23: Opto 3*
	0x01000000	*24: Opto 4*
	0x02000000	*25: Engine malfunction*
	0x04000000	*26: ---*
	0x08000000	*27: ---*
	0x10000000	*28: ---*
	0x20000000	*29: ---*
	0x40000000	*30: ---*
	0x80000000	*31: ---*



Again, the communication with 3 scales is provided. As a data format, the Floating-point format Real selected. (z.B. P097500, P97501..)

Pure bit fields, on the other hand, must be displayed in the double-integer data format. (z.B. P97402)

P740 - P755	BusIs DW0:	INT or REAL
Selection:	00: ---------- 01: WC00 Pr 02: WC10 Pr 03: WC20 Pr 04: WC30 Pr 05: WC40 Pr 06: WC50 Pr 07: WC60 Pr 08: WC70 Pr 09: --- 10: WC00 Abs 11: WC10 Abs 12: WC20 Abs 13: WC30 Abs 14: WC40 Abs 15: WC50 Abs 16: WC60 Abs 17: WC70 Abs 18: --- 19: WC00 Status 20: WC10 Status 21: WC20 Status 22: WC30 Status 23: WC40 Status 24: WC50 Status 25: WC60 Status 26: WC70 Status 27: --- 28: WC00 Control Bits1 29: WC10 ControlBits1	Range:

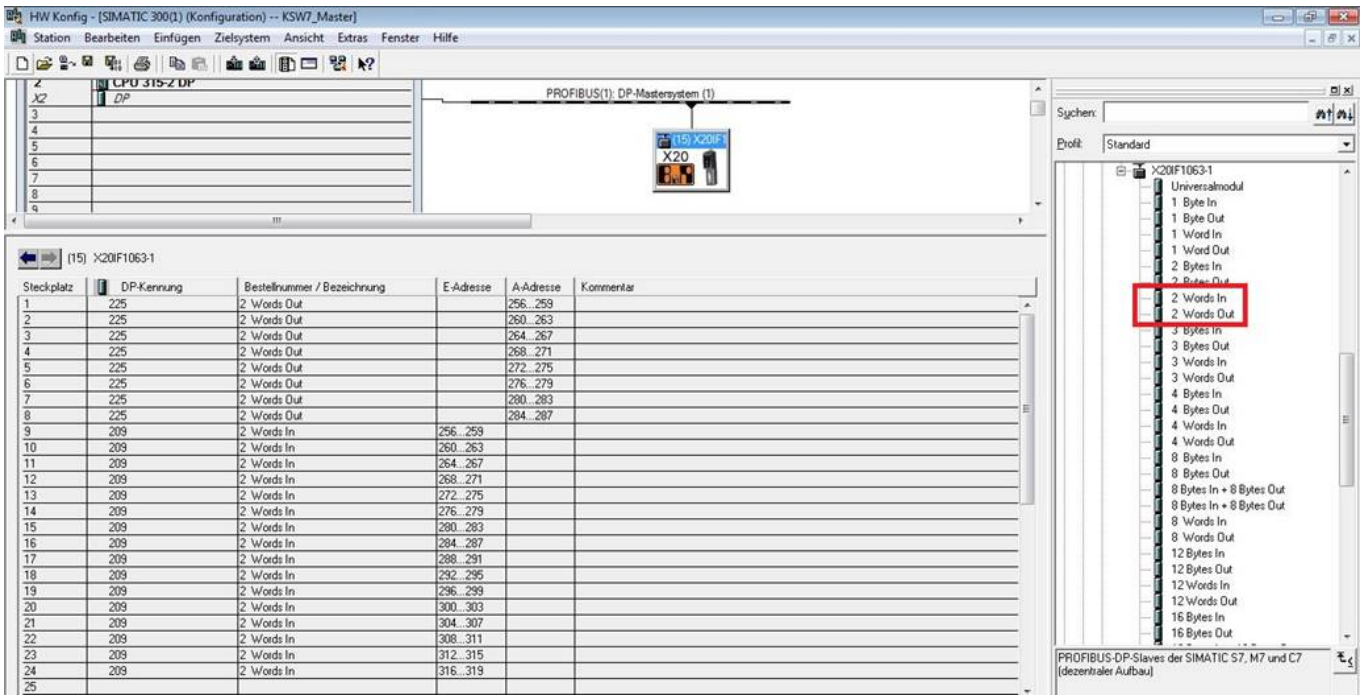
	30: WC20 ControlBits1 31: WC30 ControlBits1 32: WC40 ControlBits1 33: WC50 Control Bits1 34: WC60 Control Bits1 35: WC70 ControlBits1 36: --- 37: WC00 batch setpoint 38: WC10 batch setpoint 39: WC20 batch setpoint 40: WC30 batch setpoint 41: WC40 batch setpoint 42: WC50 batch setpoint 43: WC60 batch setpoint 44: WC70 batch setpoint 45: --- 46: WC00 batch step 47: WC10 batch step 48: WC20 batch step 49: WC30 batch step 50: WC40 batch step 51: WC50 batch step 52: WC60 batch step 53: WC70 batch step 54: --- 55: WC 00 Istcharge 56: WC 10 Istcharge 57: WC 20 Istcharge 58: WC 30 Istcharge 59: WC 40 Istcharge 60: WC 50 Istcharge 61: WC 60 Istcharge 62: WC 70 Istcharge 63: --- 64: Scale index 0 65: Scale index 1 66: Scale index 2 67: Balance index 3 68: --- 69: Mailbox – Number 0 70: Mailbox – Number 1 71: Mailbox – Number 2 72: Mailbox – Number 3 73: --- 74: Mailbox – Value 0 75: Mailbox – Value 1 76: Mailbox – Value 2 77: Mailbox – Value 3 1000: AI00 1001: AI01 1010: Global Control Bits
Description:	This parameter determines which value is transmitted to a central controller via the first actual value double word DW00 – DW36 of the fieldbus output area.
Hint:	The type of output is defined under P840 – 855 (0 Integer | 1 REAL)

WC0-7 SteuerBits1	*Digitale Steuerkommandos an den Waagencomputer*	
	0x00000001	*00: ---*
	0x00000002	*01: Charge Start*
	0x00000004	*02: Batch of coarse current*
	0x00000008	*03: Batch fine flow*
	0x00000010	*04: Fill in*
	0x00000020	*05: Empty*
	0x00000040	*06: Min Min*
	0x00000080	*07: Min*
	0x00000100	*08: Max*
	0x00000200	*09: Max Max*
	0x00000400	*10: Quantity error*
	0x00000800	*11: ---*
	0x00001000	*12: ---*
	0x00002000	*13: ---*
	0x00004000	*14: Material release*
	0x00008000	*15: Rem active*
	0x00010000	*16: Drive lock active*
	0x00020000	*17: Emergency stop active*
	0x00040000	*18: System running*
	0x00080000	*19: Jog Maindrive active*
	0x00100000	*20: Relay 0*
	0x00200000	*21: Relay 1*
	0x00400000	*22: Relay 2*
	0x00800000	*23: Relay 3*
	0x01000000	*24: Warning*
	0x02000000	*25: Ready for operation*
	0x04000000	*26: XD0*
	0x08000000	*27: XD1*
	0x10000000	*28: XD2*
	0x20000000	*29: XD3*
	0x40000000	*30: ---*
	0x80000000	*31: Relay 4*

10 Communication with S7 controllers (ProfiBus / ProfiNetIO)

In the hardware configuration, care must be taken to ensure the correct assignment of the individual double words.

This example also applies functionally to all other bus systems. The byte order, i.e. whether the lowest byte of a double word is stored on the lowest or highest address, is particularly important to consider. (see Enidianess / P97020_Swap)



Example HW Config S7 Classic

Notes: