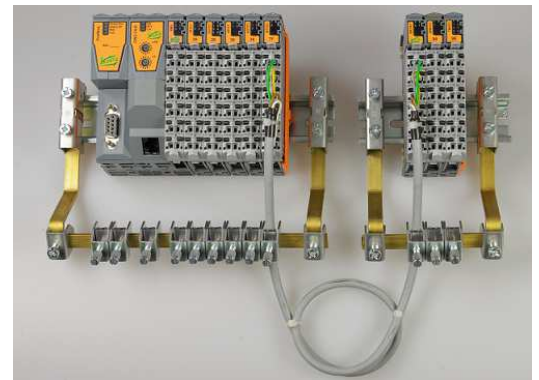
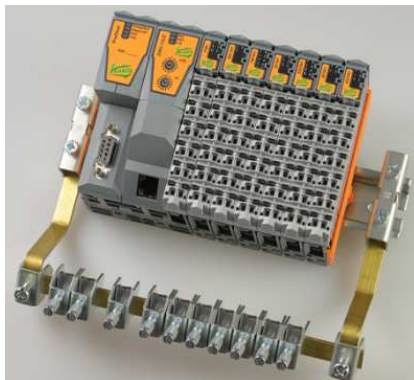


Operator manual

T1



DWC-7B

*** 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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Revision list

Revision	Date	Author	Chapter	Description
T1_DWC7A_V0_3_en	15.09.2014	Ratzinger		Preliminary - Edition
T1_DWC7A_V01_00_00_en	02.10.2014	Ratzinger		First - Edition
T1_DWC7A_V01_26_00_de	11.10.2016	Ratzinger	all	Change of images, sev. SW-modifications
T1_DWC7A_V01_28_00_en	27.07.2017	Ratzinger Jungwirth Th.	all	New edition acc. technical progress Check of translation
T1_DWC7B_V02_00_00_en	01.10.2017	Ratzinger	all	New edition Legal for Trade design

Software indication

These instructions are based on following Software versions:

W.02.00.00 (Weighing system)

P.02.00.00 (Service module)

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.

Operating instructions in German or English are considered as

ORIGINAL INSTRUCTIONS

All other languages are defined as Translations.

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1 General Description

Belt scales are suitable to record the material flow in the continuous operation. If discharge devices such as conveyor channels, rotary vane feeders, screws, etc. get pre-installed, these can be regulated by the belt scale. According to the type of bulk material, belt scales of the designs "open" EBW-A, either with covered conveyor channel or completely closed, and dust-tight EBW-H, are in use.

Single- and multi-roller belt scales are available for installation into existing conveyor belt plants. Mostly they serve for the measuring and recording of bulk material flows. The received measurement values can also be used as a reference variable for downstream process stages. The decision if a single-roller belt scale (EBW-E-...-...) or a multi-roller belt scale (EBW-M-...-...) gets inserted, depends on the speed of the conveyor belt and the necessary accuracy.

Weigh feeders are used for gravimetric dosing of most various materials. Three-phase drives with frequency converters are inserted for the regulation of the belt speed. According to the set point and the belt loading, the belt speed is regulated in such a way that the dosing capacity exactly corresponds to the default set point. They often draw off directly from a hopper or the material discharge is done by means of a discharge device such as rotary vane feeder or discharge screw.

The simplest form is the weigh feeder for direct hopper discharge. For special materials dosing devices such as rotary vane feeders, dosing screws, dosing rollers, etc. are in use. These dosing devices are arranged in front of the weigh feeder and get driven with the weigh feeder via block control unit. According to the type of the bulk material, weigh feeders of the designs "open" E-DBW-A, either with covered conveyor channel or completely closed, and dust-tight E-DBW-H or with integrated rotary vane feeder E-DBW-A(H)-I are in use.

Systems with own weighing belt are usually equipped with a mechanic belt steering device. The conveyor belt is kept in the center of the roller system by means of the belt steering device. Optionally, the belt scale can be equipped with a misrun-monitoring.

Weigh feeders, which must have a very constant output (e.g. for gypsum board production) are equipped with rotary vane feeding or screw feeding, whereby the material level in the feeding hopper additionally is controlled via a level probe in the material feeding area.




At the version with weighing rollers at the feeding area (pre-bin control) the material level in the feeding hopper is kept constant by continuous control.


It must be ensured that permanently enough product is available at the feeding hopper above at the discharge opening as otherwise the short-term accuracy will decrease.

Optionally, the DWC-7B is available as a Legal for Trade (Lft) certified system, which gets type examined according to MID.

1.1 Symbols

This manual is using the following symbols for special indications:

	IMPORTANT INDICATION! Marks an important indication.
	WARNING! Marks a general warning.
	DANGER! Means that death or severe personal injury may occur if the corresponding precautions are not taken.

	Legal for Trade mode sign (according to MID!) This indication exclusively refers to verified systems. It must be noted that besides the DWC-7B weighing system, also the mechanical part of the weigh feeder / belt scale itself must have special construction characteristics. In verified systems many possibilities like e.g. automatic correction options are switched off permanently, since they could also be used for manipulations.
*	marks KUKLA - factory settings

1.2 Abbreviations and Definitions

DI	digital inputs 24VDC (Sink-circuit)
DO	digital outputs 24VDC (Transistor, Source-circuit)
AI	describe analog inputs acc. to 0(4)..20mA or 0-10V Industry standard
AO	describe analog outputs acc. to 0(4)..20mA or 0-10V Industry standard
FB	Fieldbus
MM	integrated communication interface leading to Movimot frequency converter of the producer SEW

Service module	OP-7A, which represents the process data or parameters visibly and enables inputs.
Basic device	The scale analysis unit, in which the KUKLA firmware is working. This unit does not need a permanent connection to the service module for measuring and dosing procedures if it was right parameterized once.
Scale system	Describes one or several service modules, which are cooperating with one or several basic devices within the same network.

1.3 Approvals

The entire system has following approvals:



1.4 Norms/Standards

- EMC directive 89/336/EEC
- Low-voltage directive 73/23/EEC
- Machine directive 98/37/EC

Standard	Description
EN 55011 Class A, B	Electromagnetic compatibility (EMC), radio disturbance product standard, industrial, scientific, and medical high-frequency devices (ISM devices), limit values and measurement procedure; group 1 (devices that do not generate HF during material processing) and group 2 (devices that generate HF during material processing)
EN 55022 Class A, B	Electromagnetic compatibility (EMC), radio disturbance characteristics, information technology equipment (ITE devices), limits and methods of measurement
EN 55024 Class A or B	Electromagnetic compatibility (EMC), immunity, information technology equipment (ITE devices), limits and methods of measurement
EN 60060-2	High-voltage test techniques - part 2: Measuring systems
EN 60068-2-1	Environmental testing - part 2: Tests: Test A: Cold
EN 60068-2-2	Environmental testing - part 2: Tests: Test B: Dry heat
EN 60068-2-3	Environmental testing - part 2: Tests: Test cab: Damp heat, steady state
EN 60068-2-6	Environmental testing - part 2: Tests: Test Fc: Vibration (sinusoidal)
EN 60068-2-14	Environmental testing - part 2: Tests: Test N: Change of temperature
EN 60068-2-27	Environmental testing - part 2: Tests: Test cab: Shock
EN 60068-2-30	Environmental testing - part 2: Tests: Test cab: Damp heat, cyclic
EN 60068-2-31	Environmental testing - part 2: Tests: Test Fc: Drop and topple, primarily for equipment-type specimens
EN 60068-2-32	Environmental testing - part 2: Tests: Test Fc: Free fall
EN 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 60529	Degrees of protection provided by enclosures (IP code)
EN 61000-4-2	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measuring techniques; electrostatic discharge immunity test
EN 61000-4-3	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measuring techniques; radiated radio-frequency electromagnetic field immunity test
EN 61000-4-4	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measuring techniques; electrical fast transient/burst immunity test
EN 61000-4-5	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measuring techniques; surge immunity test
EN 61000-4-6	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measuring techniques; immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measuring techniques; power frequency magnetic field immunity test
EN 61000-4-11	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measuring techniques; voltage dips, short interruptions and voltage variations immunity tests
EN 61000-4-12	Electromagnetic compatibility (EMC) - Part 4-12: Testing and measuring techniques; oscillatory waves immunity test
EN 61000-6-2	Electromagnetic compatibility (EMC) - Part 2 - Generic standards - Immunity for industrial environments
EN 61000-6-4	Electromagnetic compatibility (EMC) - Part 2 - Generic standards - Emission standard for industrial environments
EN 61131-2 IEC 61131-2	Programmable logic controllers - Part 2: Equipment requirements and tests
NEMA 250 type 4X	Rating according to UL - Sprayed water
UL 508	Industrial control equipment (UL = Underwriters Laboratories)
47 CFR	Federal Communications Commission (FCC), 47 CFR Part 15 Subpart B Class A

1.5 Applications of the Software-Variant

- Belt scale (RBW)
- RBW / DFM for batch discharge (maximum 4 silos)
- RBW / DFM for batch discharge with feeder control
- Weigh feeder (DBW = RBW with dosing) for direct hopper discharge
- DBW with feeder control (load control)
- DBW for batch discharge
- DBW with pre-bin control

- Impact flow meter (DFM; with linearization)

- Loss-in-weight-feeder (DDW)
- DDW for batch discharge

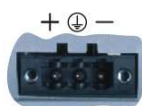
The possibilities of the loss-in-weight-feeder are not included in these service instructions, but they are described in a separate additional manual.

2 Service module OP-7A / OP-7B

The service module OP-7A enables operation and parameterization from one or several DWC-7A weighing systems. Thereby the connection is done via an internal network with Patch-cable usual in trade.

OP-7B service modules can operate DWC-7A basic devices with the last valid software status 1.29 as well as DWC-7B basic devices with the same software version number as installed in the service module:

2.1 Structure of the scale system



Rated voltage 24VDC +/- 25%
Rated current: 0,45A , inrush current: max. 2,8A



The port IF4 establishes a connection to the internal KUKLA-network. The network is comparable with Ethernet, so the same cables and network components are useable.

The internal 10.0.1.xx subnet is used (not modifiable!).

It is not allowed to connect this network with an existing network because in this case the reaction time cannot be guaranteed anymore.



USB ports for the parameter up- and download.

The use of an USB extension is only allowed up to a length of 0,5m.

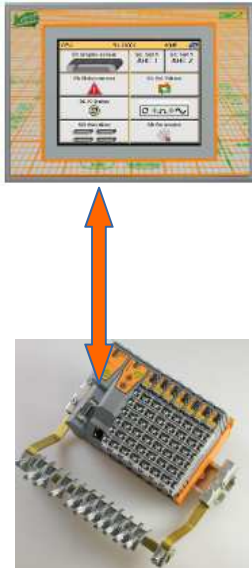


The port IF5 can optional establish a connection to an IP-network provided by the costumer.

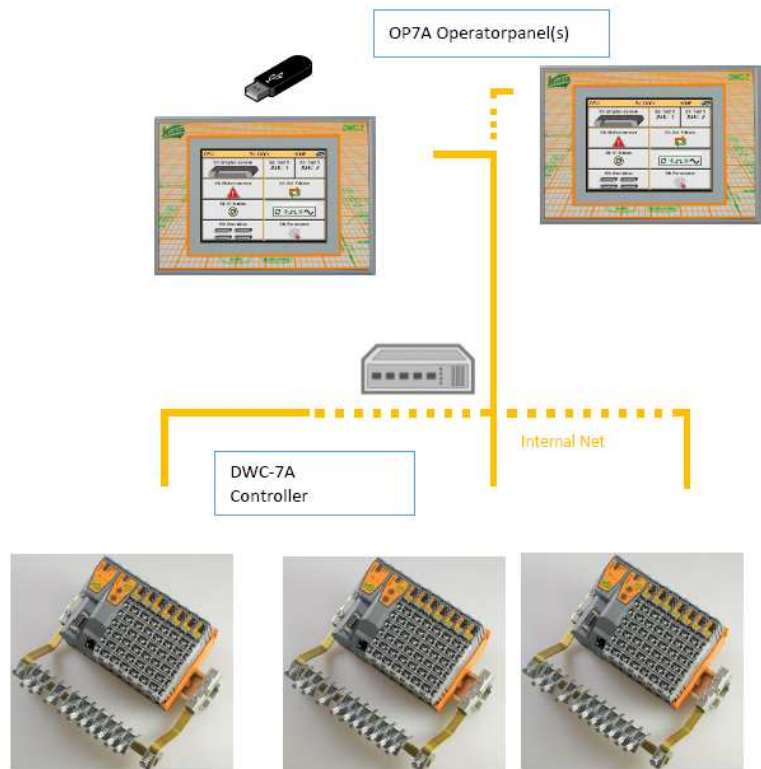
IP address and subnet mask are freely adjustable.

Following configurations are possible:

Minimal structure



Networked structure



In maximal structure, up to 8 weighing systems with up to 4 service modules can be networked. Additionally, each service module can be remote-controlled via a PC via the port IF5.

In principle, at least one service module has to be existing in the complete system for operation and parameterization. This also applies for an operation / parameterization via a PC. At normal scale operation, no service module is required.

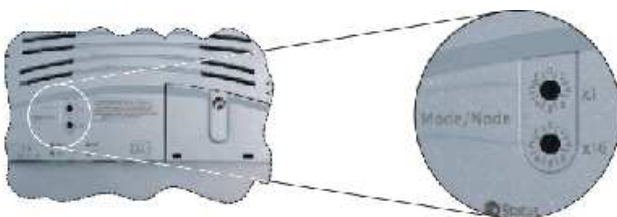
During operation, the service module may be plugged or unplugged.



FOR ALL OPERATING PROCEDURES THE SELECTION OF THE CORRECT SCALE SYSTEM HAS TO BE OBSERVED ABSOLUTELY.



The operator panel is equipped with a resistive touch screen, which may also be operated with gloves. In parameter mode the operation with a special pen is recommended (in case of need an upturned ball point pen or similar). Due to the variety of selection possibilities the selection areas are relatively small.



The node number can be selected via both rotary switches at the back side. In a complete system a certain number can be assigned only once. This applies for weighing system and service module.

2.2 Cleaning of Touchscreen



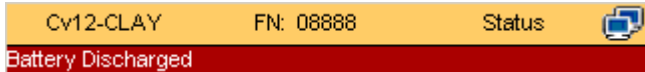
The display with touch screen should be cleaned in regular intervals.

The power panel device may only be cleaned with switched-off device in order to avoid triggering of unintended functions when touching the touch screen or pressing the keys.

For cleaning the power panel device, a damp cloth shall be used. For damping of the cloth only use water with flush fluid, screen detergent or alcohol (Ethanol). Do not spray the detergent directly onto the power panel device, but onto the cloth! In no case use of aggressive solvents, chemicals, abrasives, compressed air or steam jet.

2.3 OP-7A / OP-7B Buffer battery (Type CR2477N)

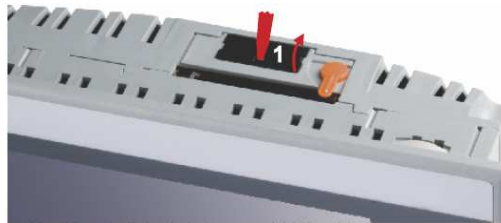
The battery ensures the buffering/back-up of the internal Real-Time-Clock (RTC) and of the SRAM data. The scale parameters are not stored in the panel, but in the weighing electronics and therefore not affected by a possible data loss. The back-up period of the battery is at least 3 years (at 50°C, 18,5 µA of the components to be kept and a self-discharge of 40%).



An unloaded or missing battery is indicated in the status screen as shown opposite.

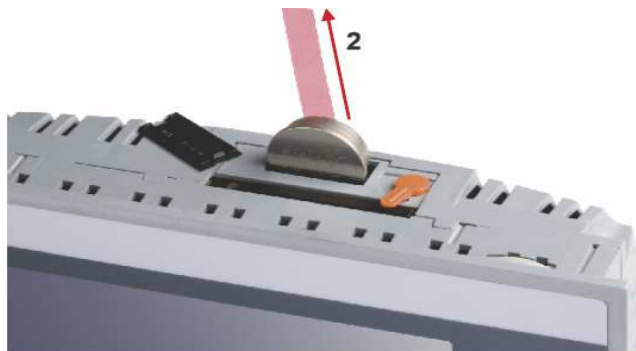
Procedure of battery changing:

- Make the supply line to the operator panel de-energized (dead voltage).
- Perform electrostatic discharge of housing or/and grounding connection.
- Remove battery cover at the top of the device by means of a screwdriver (1).



Do not touch the new battery with a pair of pliers or uninsulated tweezers because of danger of a short circuit. Only at the face sides the battery may be touched by hand.

- Insert the new battery in correct polarity. Take care of the correct position of the removal strip
- Put on battery cover.
- Re-energize Power Panel.



2.4 Storage of buffer battery at Spare Operator Panels



The buffer battery should be stored outside of the service module if it is not under voltage regularly (spare units).



Otherwise it is very probable that the battery will completely unload itself over time, since the buffer process is not necessary in this period.

Therefore, this undesired self-unloading is prevented.

3 Weighing computer DWC-7A / DWC-7B (basic device)

3.1 Structure of the system

The structure of the KUKLA weighing computer system is modular and can therefore be supplied in various types.

3.2 CPU-card DWC-7A/x



LED	Color	Status	Description
R/E	Green	On	Application running
	Red	On	SERVICE mode
	Off		BOOT mode: R/E and RDY LEDs are off and the power supply LED is blinking
RDY	Yellow	On	SERVICE mode
		Off	BOOT mode: R/E and RDY LEDs are off and the power supply LED is blinking
L/A	Green	On	A link to the peer station has been established.
		Blinking	A link to the peer station has been established. Indicates Ethernet activity is taking place on the bus.

In normal operation R/E must shine green, RDY must be inactive and L/A must shine or blink green.

Usually the service mode is reserved for KUKLA. If the system is erroneously in this mode, the system should be taken from the supply voltage for some seconds.

If even this does not bring a solution, it is necessary to adjust figure 4 on the node number switches ("memory reset") and the device has to undergo a Power-OFF-cycle.

(First take off voltage for 10 seconds, then switch on for about 2 minutes till R/E shows green permanent. After that, a valid node number has to be set and the device can be restarted normally again.)

If R/E still shines, a cold start can be performed. For this purpose, adjust on the node number switches figure 1 for cold start (registration), 2 for dosing or 3 for differential dosing and the device has to undergo a power-OFF-cycle as described.



At this procedure, all parameters are overwritten with cold start data. In this case the actual parameters have to be set new. This can be made manually on the service module. The parameters can also be loaded from an actual backup copy (USB or internal memory of the service module).

The type designation DWC-7A/C describes a version for a central structure. If the option of the cable reduction package is used, the type code changes to DWC-7A/D (decentral structure).

3.3 CPU-card DWC-7B/x



internal
KUKLA-Net

Figure	LED	Color	Status	Description
	R/E	Green	On	Application running
			Blinking	Boot mode system start: CPU initializing the application, all bus systems and I/O modules ¹⁾
		Red	On	SERVICE mode
			Blinking	The "R/E" LED blinks red and the "RDY/F" LED blinks yellow when there is a license violation.
	RDY/F	Yellow	Double flash	BOOT mode (during firmware update) ¹⁾
			On	SERVICE or BOOT mode
	S/E	Green/Red	Blinking	The "RDY/F" LED blinks yellow and the "R/E" LED blinks red when there is a license violation.
			On	Status/Error LED. The statuses of this LED are described in section 4.1 "LED "S/E"".
	IF3/PLK	Green	On	A link to the POWERLINK peer station has been established.
			Blinking	A link to the POWERLINK peer station has been established. The LED blinks when Ethernet activity is taking place on the bus.
IF2/ETH	Green	On	A link to the Ethernet remote station has been established.	
		Blinking	A link to the Ethernet remote station has been established. The LED blinks when Ethernet activity is taking place on the bus.	

¹⁾ The process can take several minutes depending on the configuration.

In normal operation R/E must indicate green, RDY/F as well as IF3/PLK must be inactive and IF2/ETH must shine or blink green.

Usually the service mode is reserved for KUKLA. If the system is erroneously in this mode, the system should be taken from the supply voltage for some seconds.

Button for reset and operating mode:

For the releasing of a reset the button must be pressed briefer than 2 seconds. Then a Hardware reset is released on the CPU, this means:

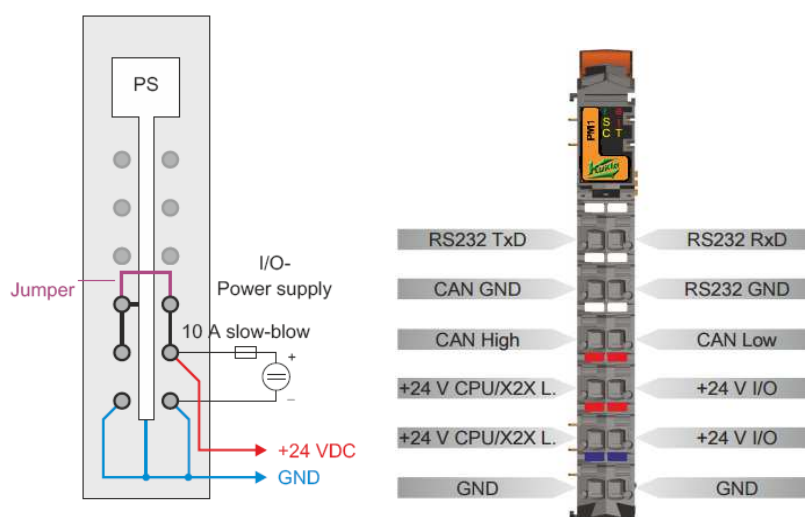
- all user programs get stopped
- all outputs are set to zero



The reset button must not be pressed longer than 2 seconds, since this leads to actions, which are reserved for the manufacturer. Thereby, the firmware could even be damaged permanently.

3.4 Power module PM1 / PM2

- feeding-in module for the CPU
- RS232 as online or communication interface
- CAN-Bus optional

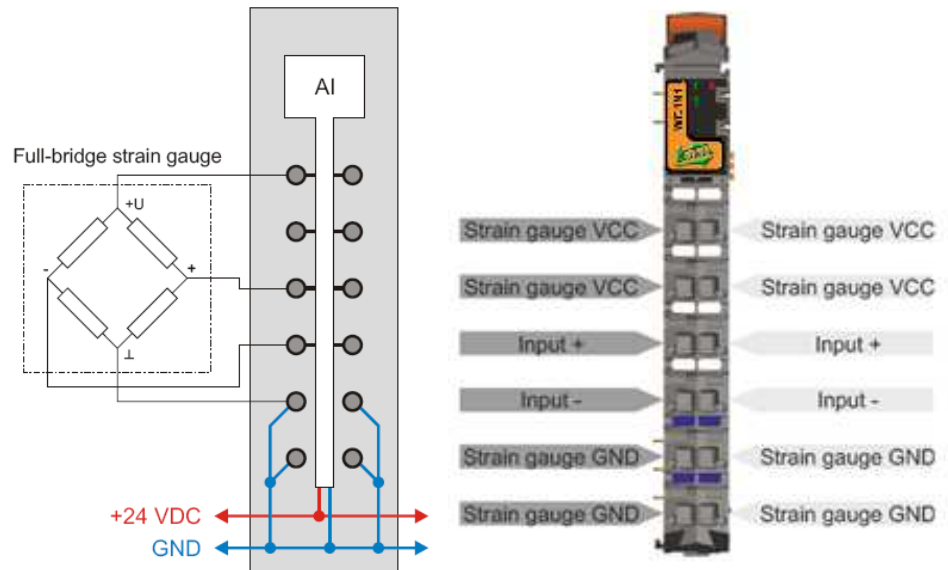


Slot-Code:
00

Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			Double flash	LED indicates one of the following states: <ul style="list-style-type: none"> • The CPU / X2X Link supply for the power supply is overloaded • I/O supply too low • Input voltage for CPU / X2X Link supply too low
	e + r	Red on / Green single flash		Invalid firmware
	l	Red	Off	The CPU / X2X Link supply is within the valid limits
			On	The CPU / X2X Link supply for the power supply is overloaded
	S	Yellow	Off	The CPU does not send data via the RS232 interface.
			On	The CPU sends data via the RS232 interface.
	C	Yellow	Off	The CPU is not sending data via the CAN bus interface.
			On	The CPU is sending data via the CAN bus interface.
	T	Yellow	Off	The terminating resistor integrated in the BB27 or BB37 bus module is turned off.
			On	The terminating resistor integrated in the BB27 or BB37 bus module is turned on.


3.5 Load cell input card WCxx

- 1 full bridges DMS input
- 5 kHz input filter
- 24bit converter resolution



Slot-Code:

01
10,11,12,13,14,15
81
90,91

Image	LED	Color	Status	Description
	f	Green	Off	No power to module
			Single flash	Reset mode
			Double flash	Boot mode (during firmware update)
			Blinking	Preoperational mode
			On	RUN mode
	e	Red	Off	Module supply not connected or everything OK
			On	Error or reset status
	1	Green	Off	Possible causes: <ul style="list-style-type: none"> • Open line • Sensor is unplugged • Converter is busy
			On	Analog/digital converter running, value OK

3.6 Tacho Combicard TM1 (1+5 DI 2 DO)

- 1 quick tacho input max.100kHz (channel 1)
- 5 digital inputs (channel 2 - 6)
- 2 digital outputs (channel 7 + 8)

Channel1 / DI00 Tachometer Input

Channel 2 / DI01

Channel 3 / DI02

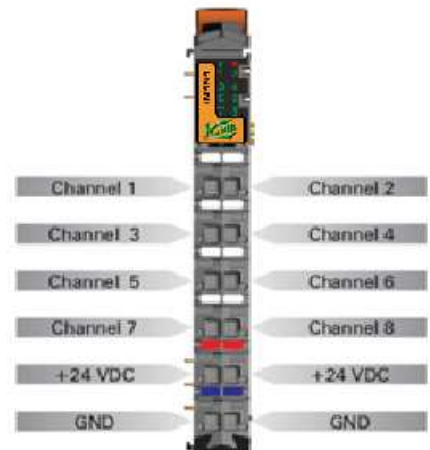
Channel 4 / DI03

Channel 5 / DI04

Channel 6 / DI05

Channel 7 / DO00

Channel 8 / DO01



Slot-Code:

02
82

Figure	LED	Color	Status	Description
	r	Green	Off	Module supply not connected
			Single flash	Reset mode
			Double flash	Linked mode
			Blinking	Preoperational mode
			On	RUN mode
	e	Red	Off	Module supply not connected or everything is OK
			On	Error or reset state
	1 - 8	Green		Status of the corresponding digital signal

3.7 Digital input card (4 DI)

- 4 digital inputs
- Sink circuit
- 3-conductor technics
- 24 VDC and GND for sensor supply
- SW input filter

DI 1 / DI00

DI 2 / DI01

DI 3 / DI02

DI 4 / DI03

Slot-Code:

03

20,21,22,23

83

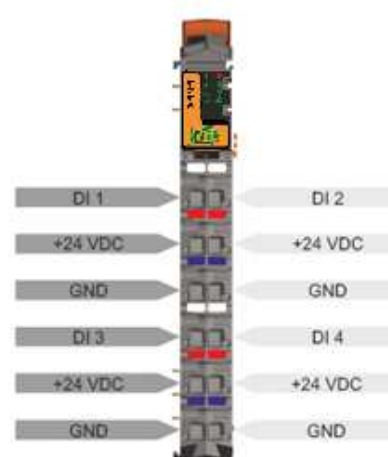
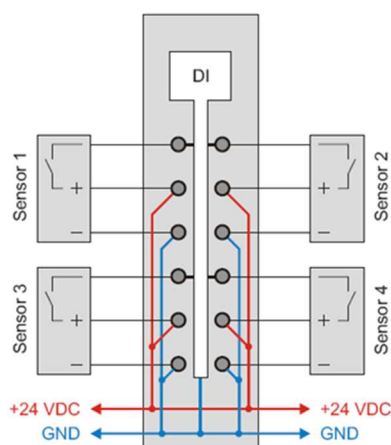


Image	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	Reset mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
			Off	Module supply not connected or everything OK
	e + r	Red on / Green single flash		Invalid firmware
	1 - 4	Green		Input status of the corresponding digital input

3.8 Digital output card (6 DO)

- 6 digital outputs
- Source circuit
- 2-conductor technics
- GND for signal supply
- integrated output protection

DO 1 / DO00
DO 2 / DO01
DO 3 / DO02
DO 4 / DO03
DO 5 / DO04
DO 6 / DO05

Slot-Code:
04
28,29
84

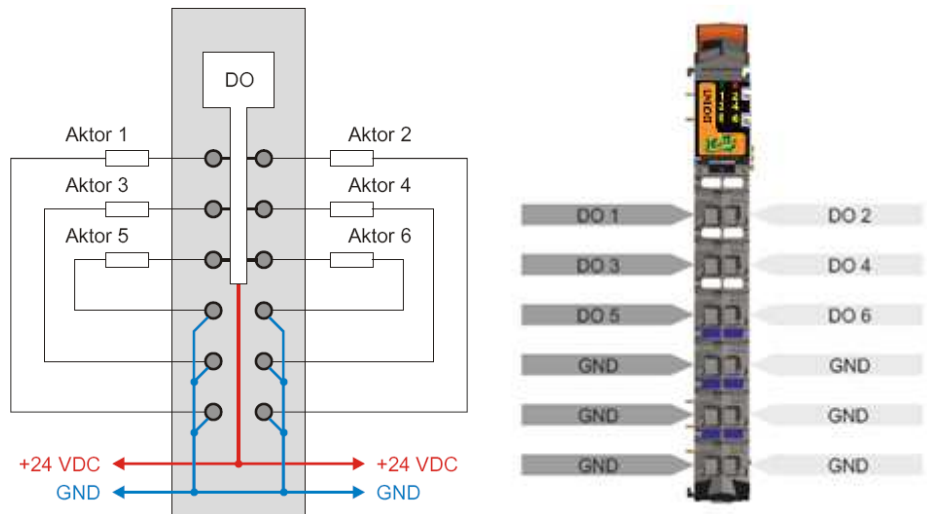


Figure	LED	Color	Status	Description
	r	Green	Off	Module supply not connected
			Single flash	Reset mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
			Flickering (approx. 10 Hz)	Module is in OSP state
	e	Red	Off	Module supply not connected or everything OK
			Single flash	Warning/Error on an I/O channel. Level monitoring for digital outputs has been triggered.
	e + r	Red on / Green single flash		Invalid firmware
	1 - 6	Orange		Output status of the corresponding digital output

3.9 Analog input card (2 AI)

- 2 analog inputs
- optionally current- or voltage signal
- 13bit digital converter resolution

AI+1 / AI00
AI+2 / AI01

Slot-Code:
05
30,31
85

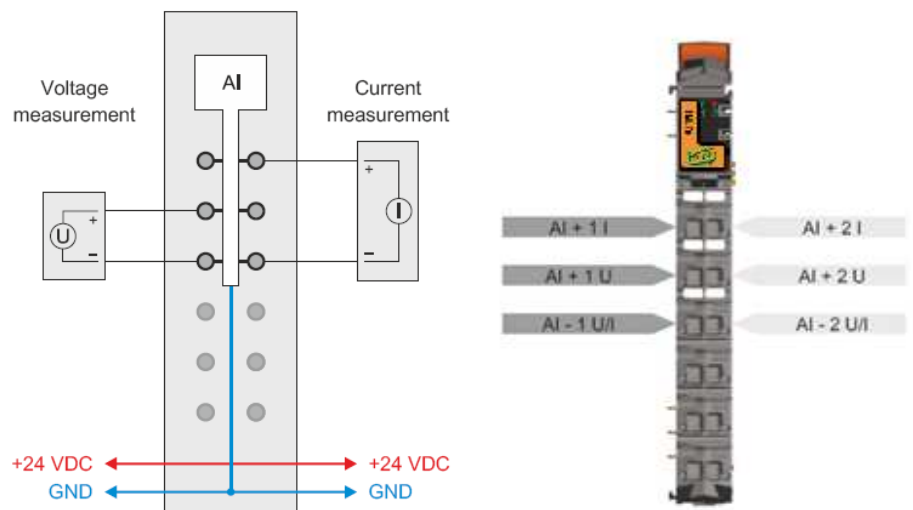


Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			On	Error or reset status
	e + r	Red on / Green single flash		Invalid firmware
	1 - 2	Green	Off	Open line ¹⁾ or sensor is disconnected
			Blinking	Input signal overflow or underflow
			On	Analog/digital converter running, value OK

1) An open line detection is only possible in case of a voltage measurement.

3.10 Analog output card (4 AO)

- 4 analog outputs
- optionally current- or voltage signal
- 13bit digital converter resolution

AO+1 / AO00
AO+1 / AO01
AO+1 / AO02
AO+1 / AO03

Slot-Code:
06
38,39
86

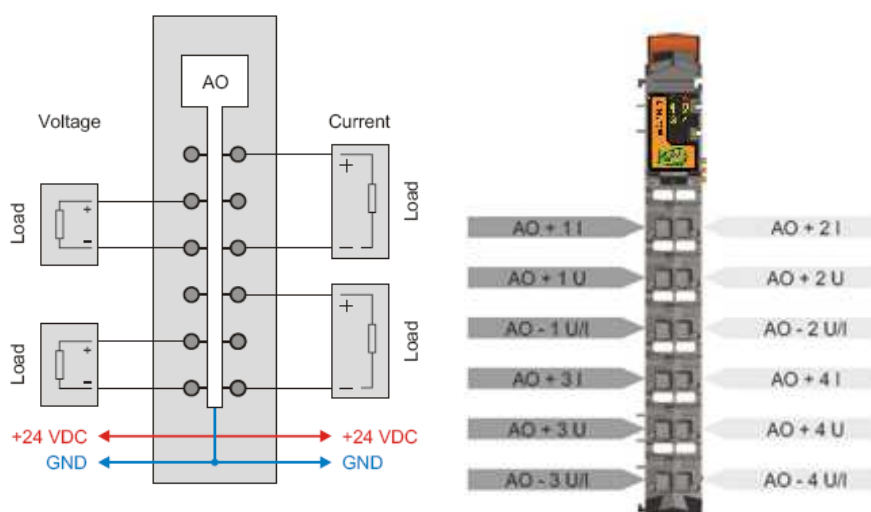


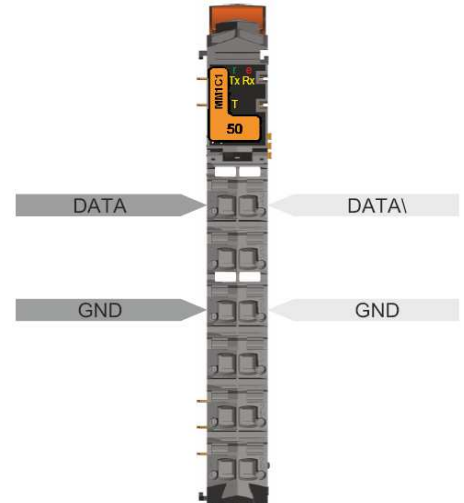
Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Double flash	BOOT mode (during firmware update) ¹⁾
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			On	Error or reset status
	e + r	Red on / Green single flash		Invalid firmware
	1 - 4	Orange	Off	Value = 0
			On	Value ≠ 0

3.11 Digital Movimot controlling (2 MM) RS485


Frequency converters of the type Movimot (producer SEW) can be directly controlled from the DWC-7 via RS485 because the SEW-protocol was included into the firmware. Thus, the necessary set point converter is not needed. Per MM-card 2 Movimot converter (e.g. main drive and feeder) can be connected.

- integrated terminating resistor

First Card: MM00 and MM01
Second Card: MM02 and MM03

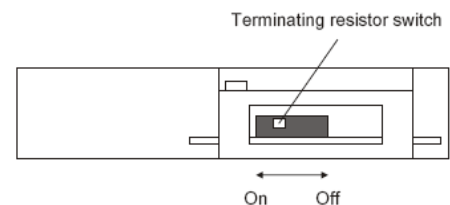


Slot-Code:
50

Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Double flash	BOOT mode (during firmware update)
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			Single flash	An I/O error has occurred
			On	Error or reset status
	e + r	Red on / Green single flash		Invalid firmware
	Tx	Yellow	On	The module transmits data via the RS485/RS422 interface
	Rx	Yellow	On	The module receives data via the RS485/RS422 interface
	T	Yellow	On	Terminating resistor integrated in the module switched on

At the communication module, a terminating resistor is already integrated. With a switch on the bottom of the housing the terminating resistor gets switched on or off. An active terminating resistor is shown through the LED "T".

For the decision if the terminating resistor must be activated, the common technical standards for RS485 networks apply. Normally, the resistor has to be activated on both Bus-ends.



3.12 Decentral structure with Bus transmitter BT1 / Bus receiver BR1

The DWC-7A basic device offers the possibility to connect all local IO's directly at the scale on a decentral IO-module, which usually consists of the load cell card WC1 and the tacho combi card TM1.



The decentral structure can enormously simplify the entire cabling of the scale system because between the CPU-module in the control cabinet and the scale only ONE SINGLE 5-pole Bus cable is required.

The maximal distance is 100m (it is possible to connect several Bus transmitters and Bus receivers in series in order to realize longer distances).

X2X Link Bus transmitter

- for seamless enlarging of the system
- up to a segment length of 100m
- feeding-in for internal I/O- supply
- operation only at rightmost slot

Slot-Code:
7F

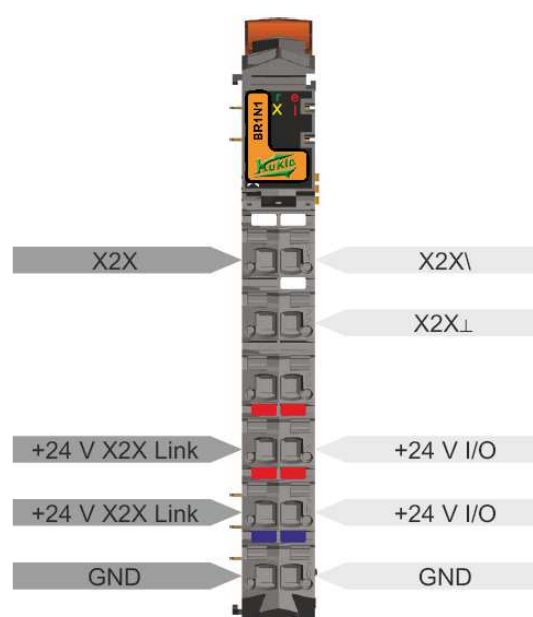
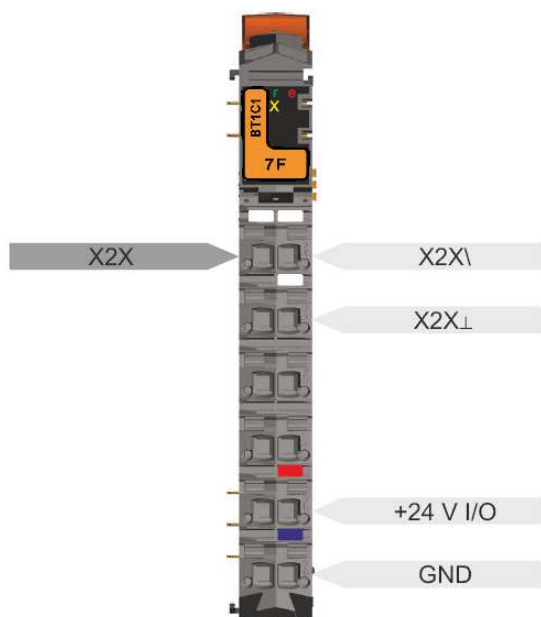
Bus cable

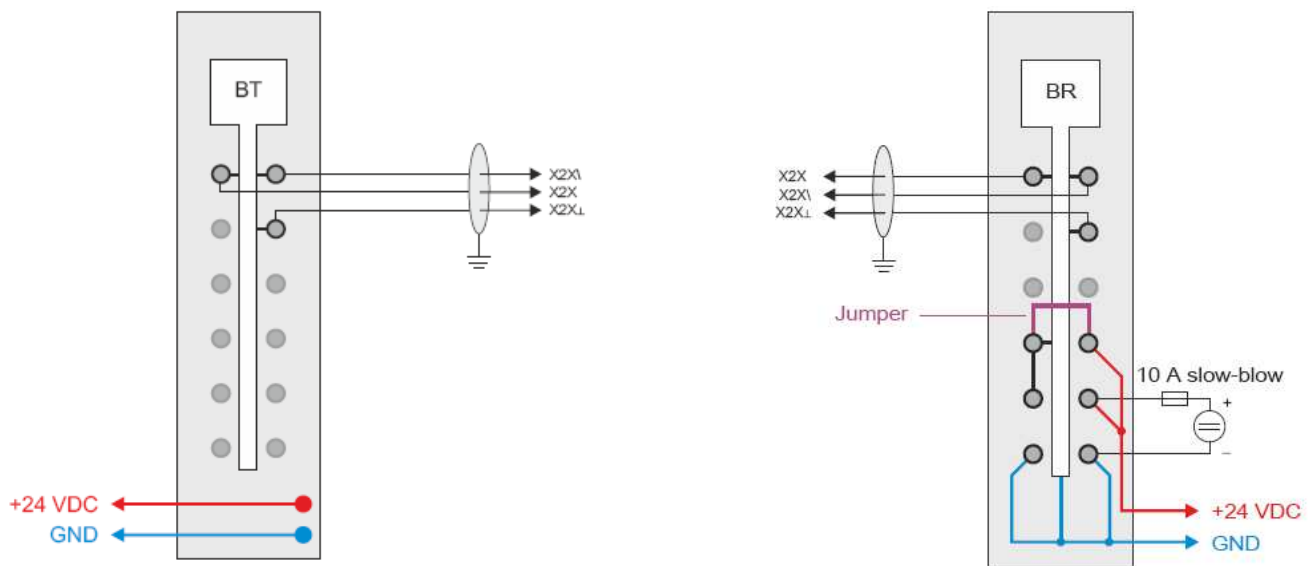
Type
[1 x 3 x
0,25
+
1 x 2 x
0,75]
mm²

X2X Link Bus receiver

- feeding-in for internal I/O supply
- galvanic isolation from feeding-in and X2X Link-supply
- operation only at leftmost slot

Slot-Code:
80





LED description BT9100 / BR9300



Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			Double flash	LED indicates one of the following states: <ul style="list-style-type: none"> I/O supply too low X2X bus supply too low
	e + r	Red on / Green	single flash	Invalid firmware
	X	Orange	Off	No communication at the X2X Link
			On	X2X Link communication in progress

Figure	LED	Color	Status	Description
	r	Green	Off	No power to module
			Single flash	RESET mode
			Blinking	PREOPERATIONAL mode
			On	RUN mode
	e	Red	Off	No power to module or everything OK
			Double flash	LED indicates one of the following states: <ul style="list-style-type: none"> X2X Link power supply is overloaded I/O supply too low Input voltage for X2X Link supply too low
	e + r	Red on / Green	single flash	Invalid firmware
	X	Orange	Off	No communication at the X2X Link
			On	X2X Link communication in progress
	i	Red	Off	X2X Link supply in the acceptable range
			On	X2X Link power supply is overloaded Solution: Use an additional feed module PS3300

The X2X - bus cable has to be of a suitable quality, in order to ensure the safe transmission of data and of the voltage supply. Both fields have to be transmitted secured by an independent shield.
KUKLA recommends a cable of the construction $[1 \times 3 \times 0,25 + 1 \times 2 \times 0,75] \text{mm}^2$ with an additional sum screen, which is available as an extra.



Legal for Trade verified systems according to MID!

These systems are ALWAYS designed in a decentral structure, since the load cell input card and the tacho combicard can only in this way be equipped with a sealing option. This requirement is a part of the corresponding type examination.

4 Operation of the weighing system

4.1 Preparations for start-up

Before the plant gets started, the scale must be tared manually. Thereby no material must be conveyed. After that a test with test weight has to be carried out (see chapter "Maintenance").

4.2 Production set point at dosing

In manual operation, the weigh feeders are working with the set point, which can usually be set via the display of the weighing electronics.

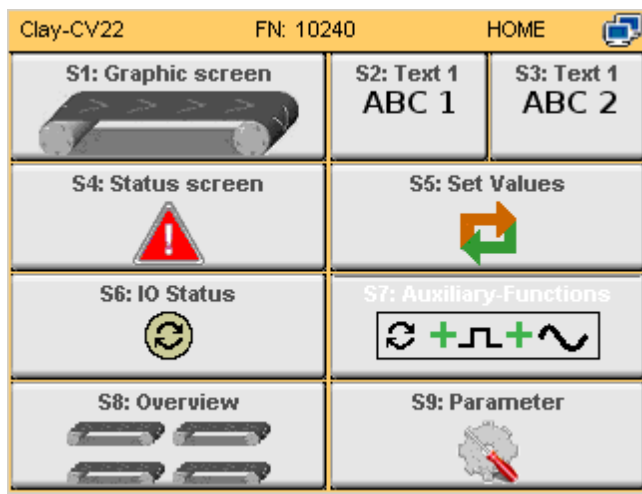
In automatic operation, often an external set point (Bus system) is used. Determination of the source of set point is done via the parameter „REMOTE“.

But it is also possible to select other sources of set point by corresponding parameterization.

4.3 Main selection screen

Within one scale the main selection can be opened with key "MODE".

The upper bar describes which scale is shown currently.



S1: Graphic screen

shows the most important scale data (normal screen)

S2: Text 1

shows detail information, primarily for maintenance works

S3: Text 2

shows additional detailed information from Text 1

S4: Status screen

shows warnings and operational faults

S5: Set Values

permits changes of set points and changes of functions

S6: IO-Status

shows the status of all analog and digital in- and outputs (if a Fieldbus interface is included, also all Bus signals are represented)

S7: Additional Functions

if existing, the auxiliary drives and additional systems are represented here and can also be controlled manually, if permitted

S8: Scale selection

permits a changeover of the indicated scale

S9: Parameter list

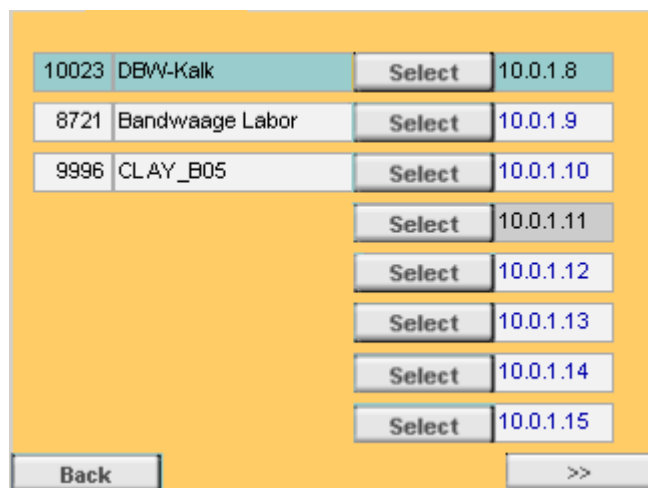
opens the input window for parameterization

4.4 Selection of active weighing system at networked systems

Since one service module can be used for several weighing systems, the correct scale system has to be selected first. The therefore required operational steps are:

Press key "MODE" if the selection screen has not been opened yet.

Then select:



The key „Select“ has to be pressed to select the desired system.



IT IS EXTREMELY IMPORTANT THAT THE RIGHT SCALE IS SELECTED, otherwise an UNINTENDED OVERWRITING OF AN ERRORNEOUSLY SELECTED SYSTEM COULD OCCUR!

5 Description of indicating screens

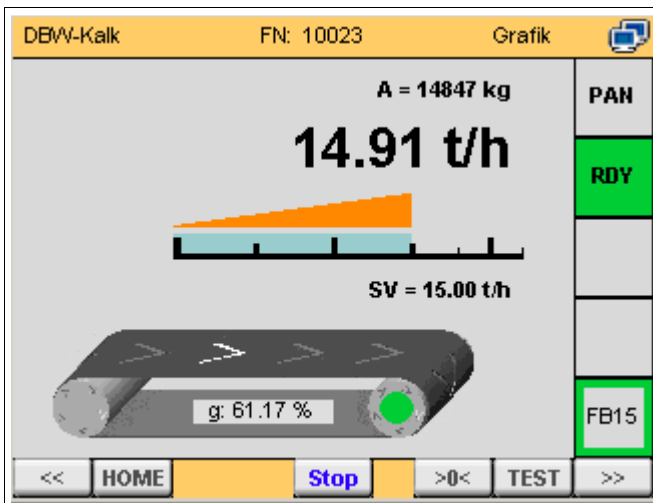
For reading the operational data, input of set points at corresponding parameterization and for control indication several pictures are available at normal operation.

5.1 S1: Graphic screen

The usual screen is the „Graphic screen“. At Graphic screen there are several possibilities of representation, determined depending on the type of scale in the parameterizing mode.

The squares on the right side describe the operational status.

The uppermost row shows symbols for information about certain operational states (1-4).



REM - setting of set point is in Remote-mode PAN - system and set point is controlled by the panel LOC – system and set point is controlled locally
By pressing the keyboard, a direct switch to the operation modes selection S5 is possible.
RDY - READY TO OPERATE (Green) ERR - NOT READY TO OPERATE (Red)
Through pressing the keyboard, a direct switch to the status figure S4 is possible.
S Simulation active / inactive
Fbxx Fieldbus address
A green frame shows that the communication to the central control is active.

A =	actual, not resettable counter
SW =	actual set point (absolute and as rectangular bar)
g =	actual loading in percent
Xx / h =	actual capacity (absolute and as cascaded bar)



If the symbols  or  get indicated, it is a Legal for Trade system.

Please, find details on that in chapter 8 „Verifiable applications according to MID“.

Such automatic scales are governed by a set of rules prescribed by law, which must be followed precisely.

5.2 S2: Text 1 (TXT1)

DBW-Kalk		FN: 10023		TXT 1	
A:	16851 kg				
B:	643kg	<input type="button" value="del"/>			
C:	608kg	<input type="button" value="del"/>			
SV:	15.00 t/h	SVS: PANEL			
p:	1		3		
p%:			15.01 t/h		
g:	61.16 %			75.08 %	
v:	40.88 %	102.2 mm/s	FT: 99.20 %		
<input type="button" value=" << "/> <input type="button" value=" HOME "/> <input type="button" value=" HELP "/> <input type="button" value=" Stop "/> <input type="button" value=" >0< "/> <input type="button" value=" TEST "/> <input type="button" value=" >> "/>					

With arrow-keys „<<“ and „>>“ further information pictures can be represented.


If in Text screen 1 the key „Help“ is pressed, following online description appears:


CV-Clay		FN: 00001		HELP	
A/ B/ C....	Total quantity counter "A/ B/ C"				
SIMv.....	Simulated speed				
SIMg.....	Simulated force transducer load				
SV.....	Set value in kg(t)/h				
SVS.....	Source of set value				
p.....	Conveying capacity in kg(t)/h				
p%.....	Conveying capacity in per cent				
g.....	Load of the measuring lenght in per cent				
v.....	Speed of the weighing belt				
FT.....	Fine tune				
<input type="button" value=" Back "/>		<input type="button" value=" Start "/>			

A:	Total quantity counter "A" This counter cannot be reset.
B:	Quantity counter "B" A reset is done with the key to the right.
C:	Quantity counter "C" A reset is one with the key to the right.
SW:	Actual set point for the dosing in kg/h or t/h
SWQ:	Describes the actual source of set point
1 (2) 3	Describes the values indicated below (1= measuring length, 2= feeding point, 3= end of conveyor belt)
P:	Actual conveying capacity in kg/h or t/h
P%:	Actual conveying capacity in percent of rated capacity of the system
g:	Actual load at the corresponding point 1 (2) 3
v:	Actual belt speed measured by tacho as percentage and absolute value in mm/s
FR:	Precision regulator / correction factor for speed set point for correction of minor deviations between set point and actual value.


5.3 S3: Text 2 (TXT2)

At more complex systems Text screen 2 contains additional process values. Primer values, for which there was no space in TXT2-screen, are represented. With the key "Help" also here an appropriate caption in the actual operating language can be represented.

CV-Clay		FN: 10220		TXT 2			
SV:	4.60	t/h	SVS:	PANEL			
PV:	0.00	t/h	SS:	OFF			
			FS:	OFF			
Sg:	55.30	%					
FDL:	100.00	%					
FDL:	1000	mm					
FSP:	0.00	%					
FF:	50.00	%					
			g1:	51.71	%		
<<	HOME	HELP	Start	>0<	TEST	>>	


CV-Clay		FN: 10220		HELP		
SV / SVS.....	Set value/ Set value source					
PV.....	Process value					
SS.....	Scale drive status					
FS.....	Feeder status					
Sg.....	Load set value					
FDL.....	delay length percent/ absolutely					
FSP:.....	Feeder variable					
FF.....	Feeder factor					
g1.....	Load actual value					
Back		Start				

5.4 S4: Status screen

CV-Clay	FN: 10220	Status	
Battery Discharged			
S22: Belt misrun RIGHT			
S09: Min Load			
S19: Deviation			
S31: Fieldbus Offline			
S00: Loadcell mV error channel 0			
S21: Belt misrun LEFT			

RED-coded messages normally shut down the scale.
 YELLOW-coded messages indicate a problem to be solved, however, an immediate shut-down is not required.
 BLUE-coded messages are stored messages, which, however, are NO LONGER active.

If in Text screen key „Help” is pressed, following online description appears:

CV-Clay		FN: 10220		HELP			
Red		Not Ready					
Yellow		Warning					
Blue		Stored Faults					
Grey		Messages without impact					
Back				Start			

The errors can be deleted with key „ACK”. Deleting is only possible if the error picture is shown.
 For aid for the elimination of errors causes see chapter “Trouble shooting/Error Handling” at the end of this manual.

5.5 S5: Set point settings

SV is the adjusted capacity set value and can be changed.

If in Text screen the key „Help” is pressed, online following description appears:

With the key „Mode change” the operation mode can be changed. It is also possible to switch between „REMOTE” and „PANEL”. This changeover is done in edge-controlled manner and can also be initiated by Fieldbus or digital input.

A changeover to „LOCAL” can only be done via a digital input or via Fieldbus.



According to the parameterization a manual changeover can also be blocked completely.

5.6 S6: IO Status

This operation screen permits a simple and quick control of all in- and output information. It is absolutely irrelevant if this information is transmitted analog, digital or via Fieldbus.

The status figure shows actual measured values, signal states, output values and internal information.

Based on the hardware, design buttons can be missing or additional buttons can appear.

WC – information about DMS-recorders
 TM – information about tacho module with DI and DO
 DI – status of DI-card(s)
 DO – status of DO-card(s)
 AI – status of AI-card(s)
 AO – status of AO-card(s)
 MM – status MoviMot communication via RS485

5.6.1 SW Status

CV-Clay	FN: 10220	SW Status
IP OperatorPanel	10.0.0.150	
Subnet mask:	255.255.255.0	
Software Operatorpanel:	P.01.29.00	
Scale electronics:	W.01.29.00	
Write cycles:	8	
DWC7 CPU - MAC:	00-60-65-3C-DA-39	
<input type="button" value="Back"/> <input type="button" value="Stop"/>		

The most important version information of the software, but also of the communication adjustments are represented.

It has to be noted that communication adjustments to a IP-network provided by the costumer are meant by the IP-information (IF5).

The internal communication (IF4) between basic device and service module takes place via an internal network.

The number of the write cycles records how often parameters got changed.

The parameter R9005 describes the checksum of the current parameter set. In case of a verified system, this number must be documented permanently and unchangeable without a breach of the seal at the verification sign.

5.6.2 HW-ID

DEW	FN: 10222	SW Status
R9800 SN CPU:	168458	<input type="button" value="Softwarestatus"/>
R9801 SN BT:	974808	
R9802 SN BR:	1595269	
R9803 SN WC:	476915	
R9804 SN TM:	186837	
R9805 SN OP:	168431	
R9690 DWC7 CPU - MAC :	00-60-65-3A-46-FA	
<input type="button" value="Zurück"/> <input type="button" value="Start"/>		



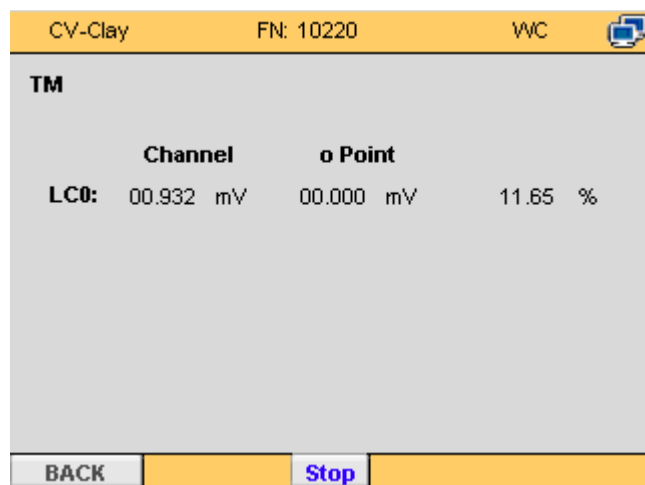
Under HW-ID all serial numbers of the latest system, which are relevant for verification, are listed.

At verified systems a checksum is permanently calculated from these numbers, which must coincide with the parameter "P1050 Licence Code"

Only then the entire system is considered as plausible and not manipulated.

At not verified systems this screen only serves as a documentation of the used Hardware.

5.6.3 Load cell measuring values (WC0..5)

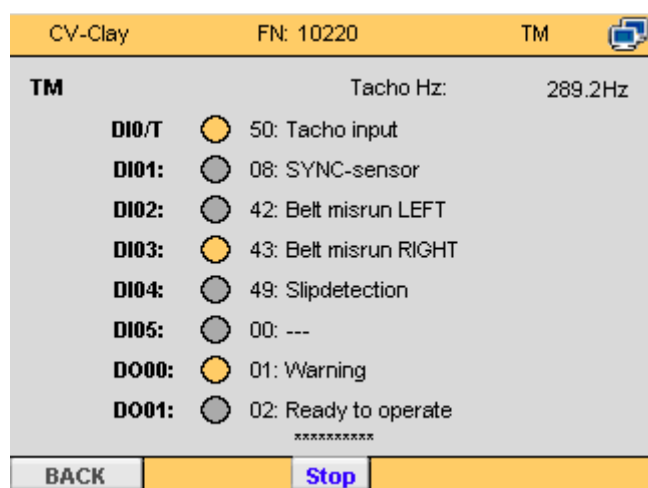


In this selection screen all measuring channels based on load measuring are combined.

Usually, only the channel WC0 is present. At complex applications, up to 6 channels could appear.

The value in millivolt could slightly deviate from a value currently measured with the multimeter at the clamps because of different basic calibrations and tolerances.

5.6.4 DI / DO - Basis card (TM1)



This card makes absolutely required digital inputs and digital outputs available.

DI0/T is an especially configured input, which only could be used as tachometer for the dosing drive.

In the second column, the actual state of the input/output is represented with a gray circle for 0 or an orange circle for 1.

In the rightmost column, the actual parameterization of the input / output is shown.

Thus, it is easy to recognize how the channel should affect the system.

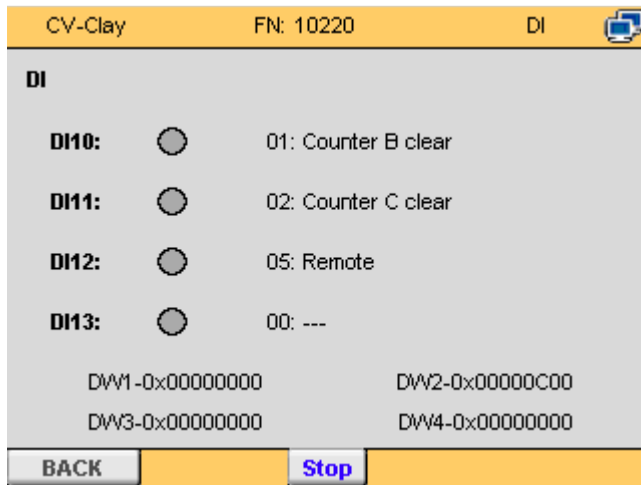


The representation of signals <1Hz is only possible limited. The data have to be transferred from the weighing system to the service module via a data connection. Thus a corresponding time delay in indication might arise. This especially applies for observing of very quick signals (e.g. tacho- or counter signals).



At Legal for Trade verified systems the digital input DI01 is fixed and unchangeably configured to "48: Calibration mode active". This input is intended for a switch in the sealed area and ensures that the system cannot be manipulated in verified operation.

5.6.5 Status digital inputs (DI10..13)



In this selection screen the digital inputs DI10 to DI13 are represented.

The first column defines the name of the channel.

In the second column, the actual state of the input is represented with a gray circle for 0 or an orange circle for 1.

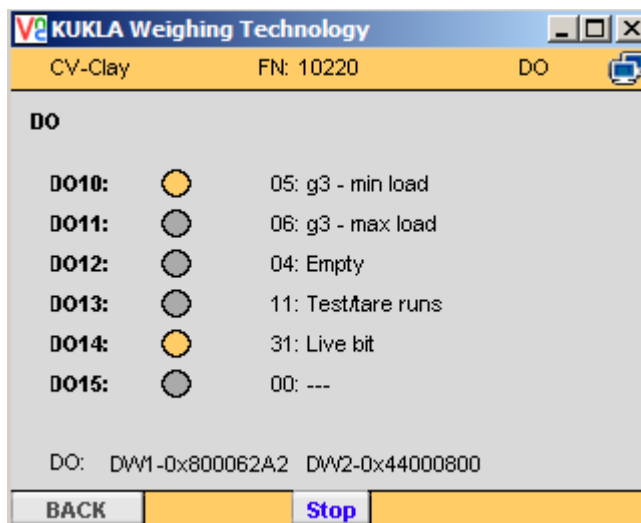
In the rightmost column, the actual parameterization of the input / output is shown.

The hexadecimal number in the bottom line represents an internal service code.

5.6.6 Status digital inputs (DI20..23)

This section is functionally similar to the previous section and is valid for the channels DI20 to DI23.

5.6.7 Status digital outputs (DO10..15)



In this selection screen the actual status of the digital transistor outputs is shown.

The middle column shows the actual output values.


In the right column the actual parameterization of the outputs is represented (starting from P6410).

The hexadecimal number in the bottom line represents an internal service code.

5.6.8 Status digital outputs (DO20..25)

This section is functionally similar to the previous section and is valid for the channels DO20 to DO25.

5.6.9 Analog inputs (AI00..01)

DBW-Kalk		FN: 10023	AI	
AI 00:	0.00 mA	0.01 %	-2	
AI 01:	0.00 V	0.01 %	0	
ZURÜCK		Start		

In this selection screen the analog input values are represented.



Note the application of mA or V!


Analog inputs can be wired with a current- or voltage signal.

This has to be correctly adjusted in the parameterization and for the positive signal different clamps have to be used.

5.6.10 Analog inputs (AI10..11)

This section is functionally similar to the previous section and is valid for the channels AI10 and AI11.

5.6.11 Status analog outputs (AO0..3)

CV-Clay		FN: 10220	AO	
AO				
AO 00:	2420	5.26%	02: Drive WB	
AO 01:	2210	2.63%	01: Feeder setpoint	
AO 02:	10010	120.00%	00: P3 Capacity	
AO 03:	10010	120.00%	06: g1-load	
BACK		Start		

In this selection screen the analog output values are represented.



Note the application of mA or V!

Analog outputs can put out a current- and/or voltage signal.

This has to be correctly adjusted in the parameterization and for the positive signal different clamps have to be used.


Both middle columns show the actual output values.

In the right column, the actual parameterization of the outputs is represented.

5.6.12 Status analog outputs (AO10..13)

This section is functionally similar to the previous section and is valid for the channels AI10 to AO13.


5.6.13 MoviMot communication (MM00..01)

CV-Clay
FN: 10220
Aux


CS1030

MM00


☒ 13: Main drive on

SV: 5.25 % 
Rx: 0/s

SVS: 02: Drive W/B
Tx: 6/s

MM01

☐ 08: Remote

SV: 100.00 % 
Rx: 0/s

SVS: 00: P3 Capacity
Tx: 6/s

BACK

Stop

The actual communication to one or two MoviMot converter(s) is represented here.

Functionally the output signal is comparable to an analog output channel, which additionally exchanges digital information bidirectionally.

SV – output correcting variable

Rotation arrow – set rotation direction left/right

SVS – source of set point comparable to AOs

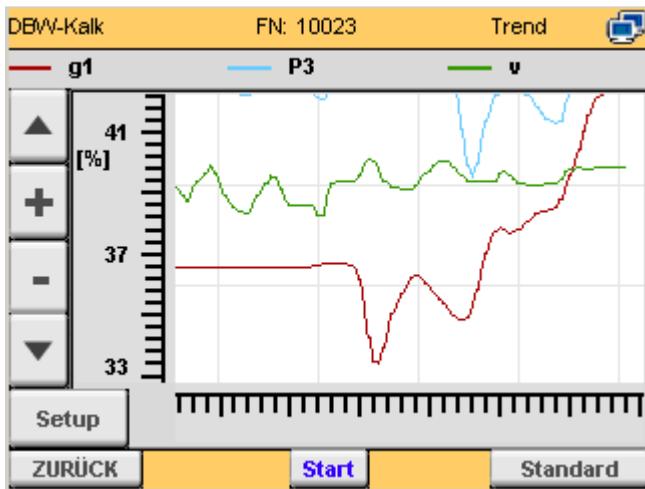
Rx: Number of received telegrams per s

Tx: Number of sent telegrams per s

5.6.14 MoviMot communication (MM10..11)

This section is functionally similar to the previous section and is valid for the channels MM10 and MM11.

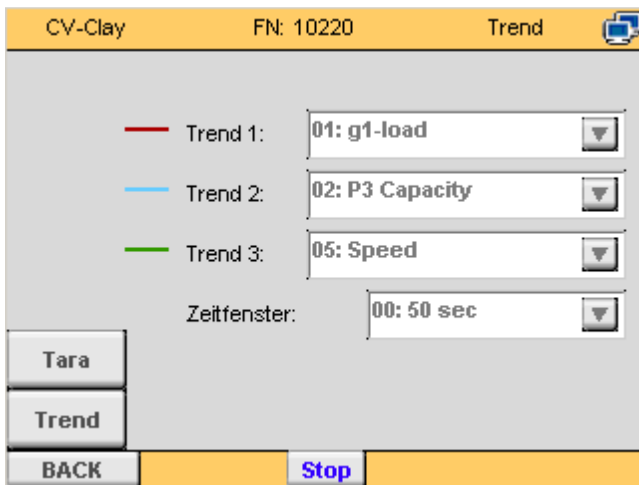
5.6.15 Trend display



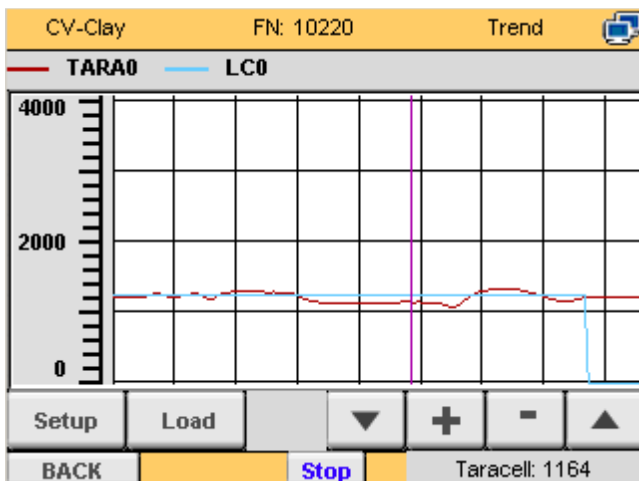
The service module can be generated by means of various analog values trends. It has to be noted that these trends are currently only generated as long as an active communication to the basic device exists for memory reasons.

The adjustment occurs through the key "Setup".

The arrow keys permit an adjustment of the visual area.



The maximum is the sketching of 3 trends at the same time. The channels and the horizontal sketching duration (x-axis) can be selected.



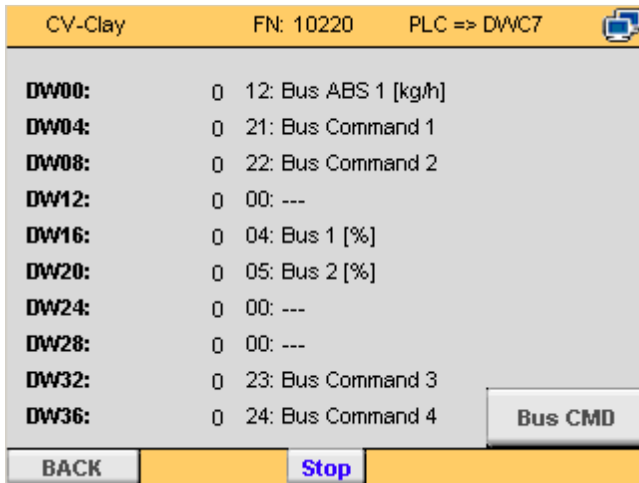
The system offers also the possibility to represent the tare cells. The short-term accuracy of the system at applications with absolute value tare can be checked in this way for example.

Because in normal operation the tare cells are stored in the basic device and not in the service module, these have to be transferred up by the key "Loading" before they can be represented. This can last few seconds.

5.6.16 Status BusIn set points (Fieldbus-Option)

This option is only available if the weighing system is equipped with a licensed Fieldbus interface.

Please find details in manual T3 (Fieldbus manual).




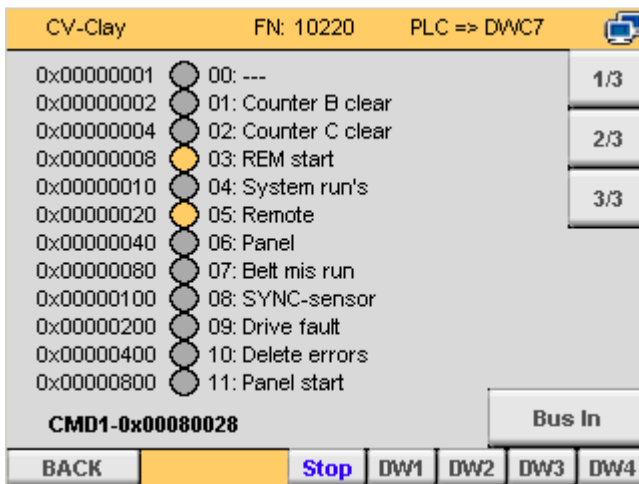
In this selection screen all nominal data transmitted by Fieldbus are represented.

The data transfer is always done in double words (32bit), irrespective of the Fieldbus system used.

Both middle columns show the actual input values.

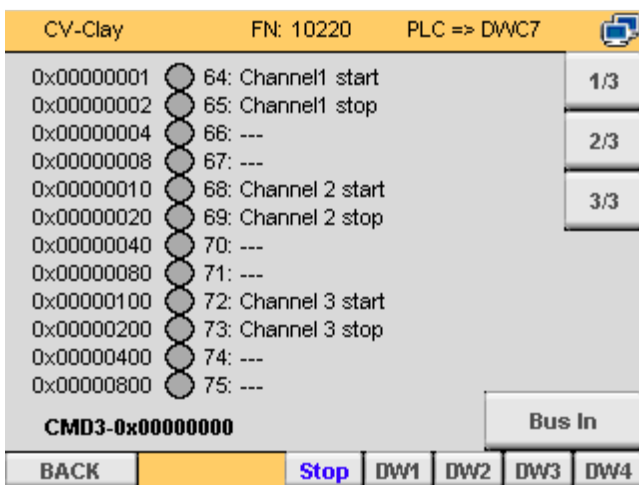
In the right column, the actual parameterization of the inputs is represented.

Via the key  also the status of each control bit can be represented.



The representation of each bit in plain text takes place here.

For reasons of space the "Bus Commando 1" – double word was divided to the pages 1/3, 2/3 and 3/3.



For representation of the "Bus Commando 2" and the "Bus Commando 3" the keys "DW2" or "DW3" have to be pressed. There the division 1/3 to 3/3 is available again. Therefore, all theoretically possible 96 bits can be checked comfortably.


5.6.17 Status BusOut actual values (Fieldbus-Option)


CV-Clay FN: 10220 DMC7 => PLC			
DW00:	0	50: P3 Capacity [kg/h]	
DW04:	3019	44: Counter A [kg]	
DW08:	3018	45: Counter B [kg]	
DW12:	*****	32: BusControlBits1	
DW16:	1140852736	33: BusControlBits2	
DW20:	*****	35: BusStatusBits1	
DW24:	0	36: BusStatusBits2	
DW28:	2299	02: Drive WVB [%]	
DW32:	2027	01: Feeder setpoint [%]	
DW36:	26	08: g3-load [%]	
DW40:	9569	22: Speed [%]	
DW44:	0	03: 0% output [%]	Control
DW48:	0	03: 0% output [%]	
DW52:	0	03: 0% output [%]	Status
BACK Stop			

In this selection screen all nominal data transmitted by Fieldbus are represented.

The data transfer always is done in double words (32bit), irrespective of the Fieldbus system used.

The middle column shows the actual output values. In the right column, the actual parameterization of the outputs is represented.

The various "BusControlBits" – double words can also be represented bit by bit via the key . These are comparable to the digital outputs.

The various "BusStatusBits" – double words can also be represented bit by bit via the key .

CV-Clay FN: 10220 DMC7 => PLC			
0x00000001	00: ---		1/3
0x00000002	01: Warning		
0x00000004	02: Ready to operate		2/3
0x00000008	03: Stopped		
0x00000010	04: Empty		3/3
0x00000020	05: g3 - min load		
0x00000040	06: g3 - max load		
0x00000080	07: Panel		
0x00000100	08: Remote		
0x00000200	09: Deviation		
0x00000400	10: Slip		
0x00000800	11: Test/tare runs		
Control1-0x800062B2			Status
			Bus Out
BACK Stop			DW1 DW2

The representation of each bit in plain text with the actual status takes place here.

For reasons of space the "BusControlBits1" – double word was divided to the pages 1/3, 2/3 and 3/3, which can be selected.

For representation of the "BusControlBits2" the key "DW2" has to be pressed. There the division 1/3 to 3/3 is available again. Therefore, all theoretically possible 64 bits can be checked easily.

CV-Clay FN: 10220 DMC7 => PLC			
0x00000001	S00: WVC A error		1/3
0x00000002	S01: WVC B error		
0x00000004	S02: WVC C error		2/3
0x00000008	S03: WVC D error		
0x00000010	S04: WVC E error		3/3
0x00000020	S05: WVC F fault		
0x00000040	S06: Alarm 6		
0x00000080	S07: Alarm 7		
0x00000100	S08: Scale is empty		
0x00000200	S09: Min Load		
0x00000400	S10: Max Load		
0x00000800	S11: Alarm 11		
Status1-0x80680301			Control
			Bus Out
BACK Stop			DW1 DW2

For reasons of space also the "BusStatusBits1" – double word was divided to the pages 1/3, 2/3 and 3/3, which can be selected.

For representation of the "BusStatusBits2" and the key "DW2" must be pressed. There the division 1/3 to 3/3 is available again.

5.7 S7: Additional functions

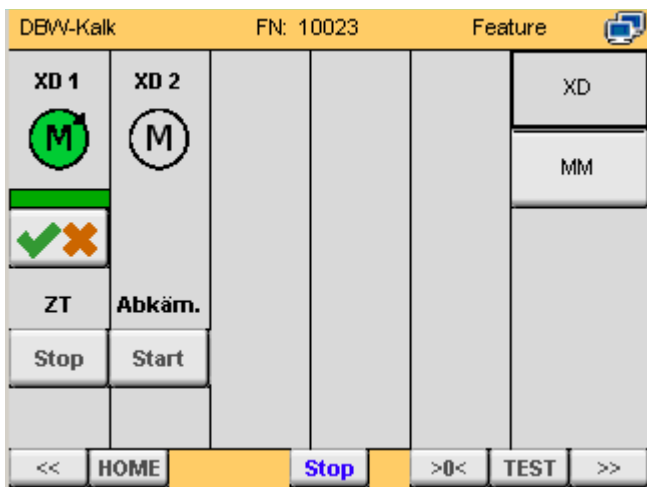
Primarily, auxiliary devices are controlled through this menu option if this was permitted in parameterization. In this way all usual additional establishments for continuous bulk material dosage systems can be controlled without the necessity of further control components like auxiliary and time relays, external control systems or similar.

If no additional functions got parameterized, the text “S7: Additional functions” is colored in WHITE and the key cannot be pressed.

5.7.1 Additional drive channels (XD1..5)

Currently supported auxiliary drives: (see parameter group P150x)	
01: Feeder	Rotary vane feeder or dosing belt in front of a weigh feeder
02: Fan	External fan for cooling of a device in the scale system
03: Slide gate	Control of a slide gate as terminating device
04: Back combing	Material equalization in the inlet area for special applications
05: Combing brush	Control of a combing roller / combing brush to constantly wipe off the material at the end of the weigh belt
06: Cleaning brush	Cleaning brush or roller at the lower belt to avoid deposits on the conveyor belt
07: DischargeDevice LiW	Control discharge device for the refilling of the loss-in-weight-feeder
08: DischargeDevice PreBin	Control of the discharge device of a pre-bin at weigh feeders
09: Loosening injector	Pulsating control of an air injection valve to improve the material flow, which is time-controlled activated automatically during the set-up and also subsequently.
10: Flow support	Control of an oscillating discharge device of weigh feeders (mainly for lightweight bulk materials)
11: Cleaning device	Time control of the cleaning chain scrapers beneath the scale
12: ---	---
13: Loosening device	Control of a stirrer in the weighing hopper of a loss-in-weight-feeder
14: STD drive	Drive, which cannot be assigned to any other type

5.7.2 Operating state and control of additional drives



An example figure is presented here:

Through the key “XD” the 5 possible additional drives can be represented.

The key „MM” appears if integrated MoviMot frequency converters are present in the system.

From the left to the right in each column an additional drive (XD1 (AuxDrive) to XD5) is represented.

It has to be noted that one channel can control up to 3 additional drives via parallel function.



These keys are usually not available, since they are only present in the so called „set-up operation“. This mode can be activated in the parameter mode, but also gets deleted automatically at every mode change into the REMOTE-operation because this mode usually serves only for testing of the drives during the set-up.



If a manual release opportunity got parameterized, the orange bar shows that this is NOT active presently. By pressing the key, the release can be activated.



The green bar shows that the release is given, this means that the system can activate the drive if necessary (release active).



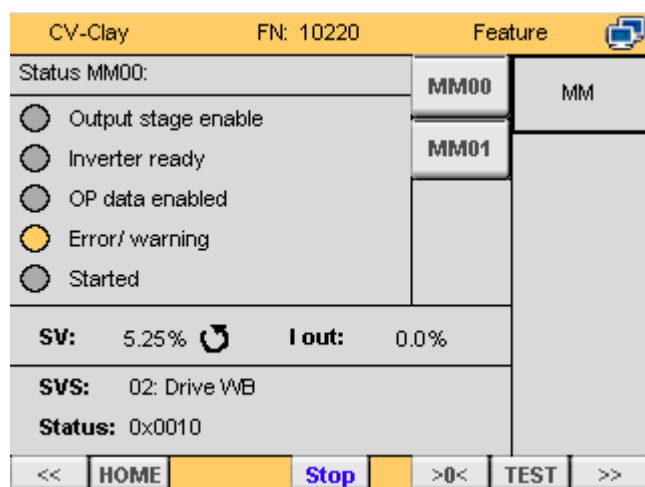
The orange or green bar only shows the BASIC RELEASE and not if the drive should operate or if it is actually working!



Only if the engine symbol shines green, the output is really controlled.

5.7.3 Operating state and control of an integrated MovMot frequency converter

MM MovMot control:



An example figure is shown here:

Through the keys „MM00..11“ the 4 possible drives can be represented.

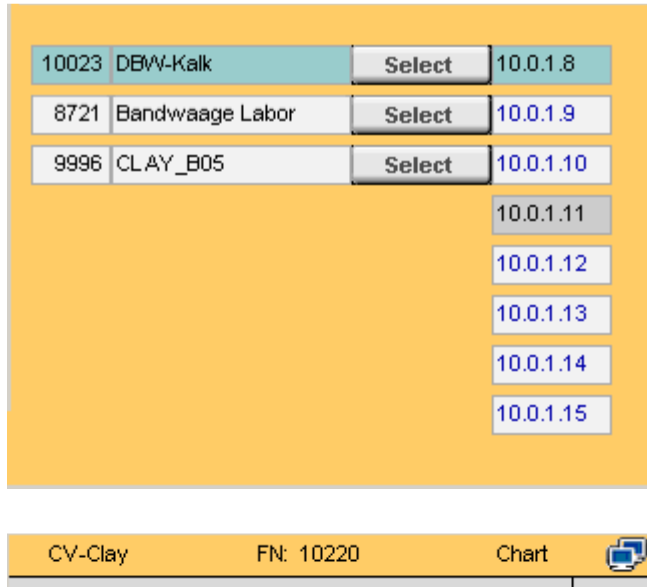
The most important digital status reports, the set points and the percentage current consumption “I out” (measured from the rated current) are represented

SVS: describes the source of set point, which is transmitted to the FU

Please find details in the MovMot description.

5.8 S8: Selection of scale

The scale, which should be displayed, is selected here. Basically, a service module OP-7A can communicate with up to 8 scale computers.



If this operation screen is active, the service module permanent searches for scale basic devices, which are accessible via IF4. A complete scan lasts up to 15 seconds.

In this example the service module found and represented 3 basic devices:

With the key "Select" in the right line the desired scale can be selected.

Then the parameterizable standard operation screen of the selected scale can be reached with the key "....."

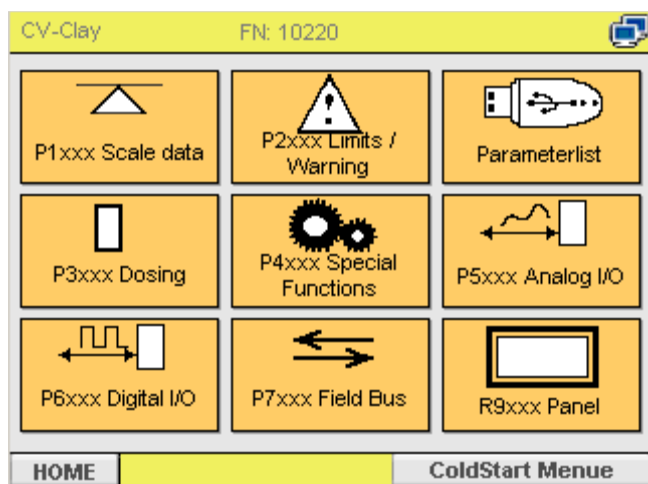
The top line always shows the CURRENTLY selected scale. The data of this scale are displayed and can be changed if necessary.

5.9 S9: Parameter mode and parameter list



After calling the menu point  the gate to the parameter menu opens.

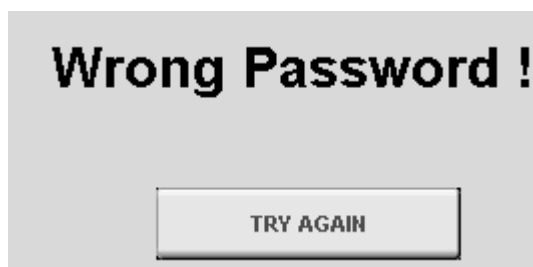
The following display appears:



If no password was deposited in the parameter P1060 or if the corresponding digital input was not activated, the parameter main selection menu appears directly.



If a password is deposited in the parameter P1060, this has to be changed by pressing the red number and then displayed keyboard. In case of an incorrect entry, the following message appears:



The menu point  permits to show an actual parameter list.



The parameter mode should only be opened for re-parameterization if this is really desired and if enough knowledge about the functions and effects of changes is existing. Incorrect parameterizations can paralyze part systems or also the entire system as well as they can cause massive material damage.



In exceptional cases also minor, medium up to severest injuries cannot be ruled out!

5.9.1 Access to parameter mode in verified systems

In such systems the access to the parameter mode is generally only possible by a hardware like switch inside of the sealed area. An access via password is not possible.

As long as the seal is not breached, the system remains in the verified operation.



As soon as the parameter mode switch gets activated, the system drops into the not verified operation, what is represented with the following symbol.



The establishment of a parameter list in the verified mode is enabled through the selection of the key "Parameter list" on the bottom right.

5.10 Parameter - list





After calling the menu point **S9: Parameter** the gate to the parameter menu opens by the key

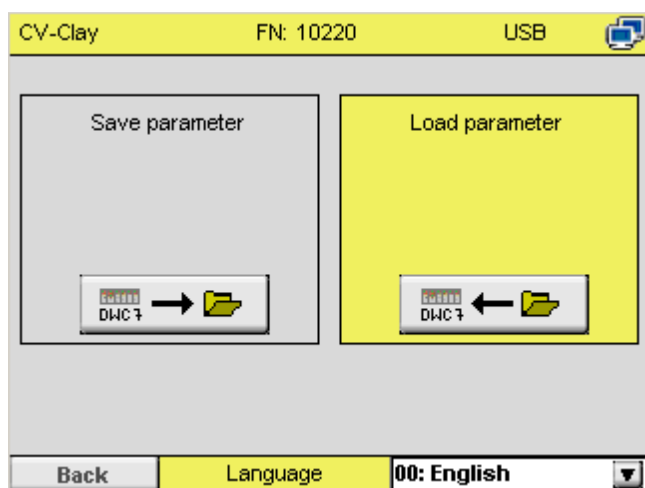
Parameter list.

5.10.1 Administration of sets of parameters

Basically, the system generates parameter files in a .CSV-format. This format can be read from word processing programs or common spreadsheet programs without problems. Also further processing and back reading are possible.

The system can store these CSV-files on an internal partition of the service module (archive ) as well as on a connected USB-stick  usual in trade.

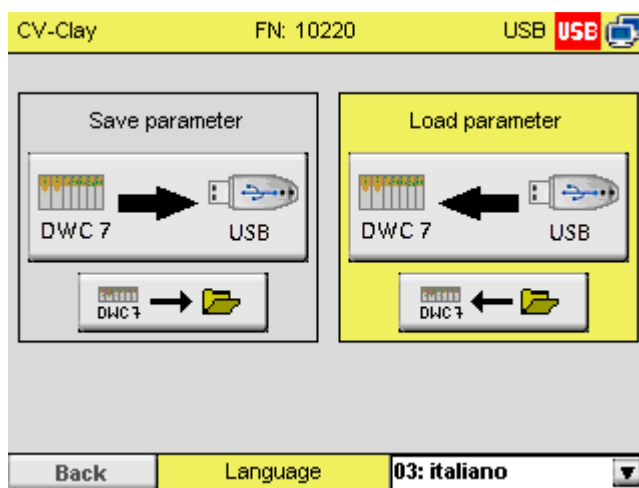
If an USB-Stick was detected, the following screens can appear:



In this case only the internal archive in the service module is accessible.



With one service module several basic devices can be controlled, therefore it has to be noted that IN THE ARCHIVE ALSO PARAMETER FILES OF OTHER SCALES ARE EXISTENT, NOT ONLY THE FILES OF THE PRESENTLY ACTIVE SCALE!



The red symbol in the right top corner displays that an active USB-memory was detected. Additionally, both large buttons appear, which permit storing and loading from the USB-memory.



The loading of a parameter set is not allowed in a verified system and therefore, the entire right screen "Load parameter" is switched off during this time.

5.10.2 Saving of an actual set of parameters

In the top line the actually on the service module active scale is displayed.

The gray coded rectangle displays that an unintentional erroneous programming is impossible.

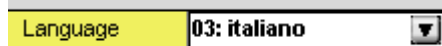


The establishment of a .CSV-parameter file is initiated. After the progress bar has been ran out, usually a success report follows, which has to be confirmed with the key "OK".



The same process occurs here, but in this case the file is not dropped in the USB-memory but in the internal memory.

For the improvement of the readability the parameter list also gets inserted in plain text. In order that the plain texts are also readable, the desired language can manually be selected via a DropDown-selection.



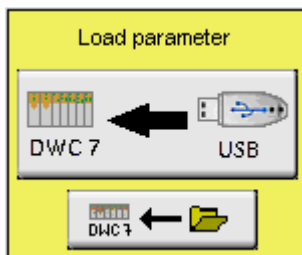
The plain texts are irrelevant for a later back loading of the parameter file because in this case only the received numbers are scanned by the computer system.

5.10.3 Loading of a saved set of parameters

In the top line the actually on the service module active scale is displayed.



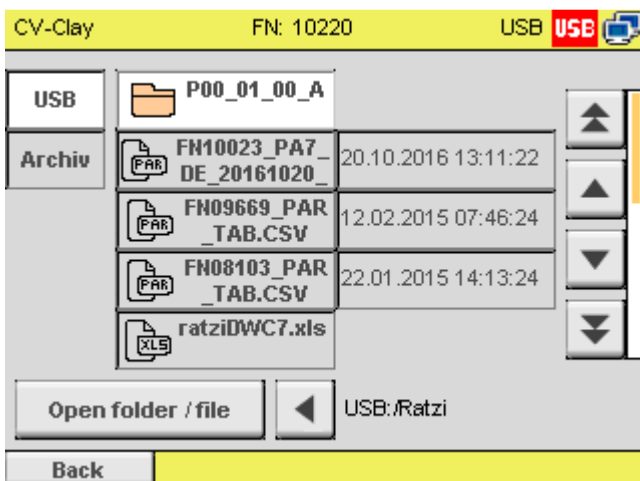
IT IS EXTREMELY IMPORTANT THAT THE RIGHT SCALE IS SELECTED, otherwise an UNINTENDED OVERWRITING OF AN ERRORNEOUSLY SELECTED SYSTEM COULD OCCUR!



The yellow coded rectangle displays that an unintentional erroneous programming is possible!

Through the corresponding keys it can be selected from WHERE the parameters should be downloaded

The integrated browser should display the desired medium.



Besides the .CSV-files also other files and folders are displayed, if existing.

DWC-7 parameter files are represented with the symbol.




The file name usually starts with FNxxxxx_PA7__yy_date_time.

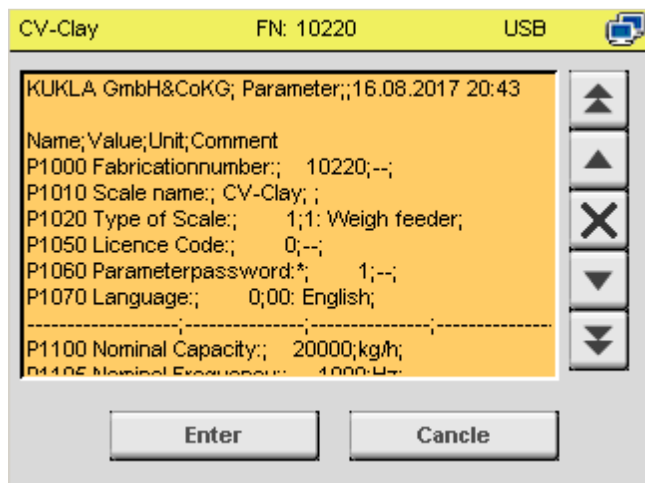
xxxxx in this case stands for the 5-digits fabrication number and yy for the plain text language selected during the storing.

Whichever a folder or a file was selected, this is opened


with the key 

The key  permits the exiting of the actual folder.

The plain texts are irrelevant for a later back loading of the parameter file because in this case only the received numbers are scanned by the computer system.



After few seconds (Loading...) the values read off from the storage medium are represented again to permit a visual control.

Only with the key  the parameters are taken into the service module (still not into the basic device/scale).

In the service module they can be edited further.

Only during exiting the parameter mode the user decides, if the changes should be rejected or uploaded into the basic device.

6 Start-up and service

Assembly resp. mounting of the weighing system has to be done according to the indication in the mechanic part of the instructions.

The electrical connections (cable connections) have to be done acc. to the enclosed connection plans. Compliance with the corresponding norms/standards (DIN, ÖVE, IEC, UL etc.) as well as regulations of the relevant power supply company has to be ensured.

The weighing system has to be earthed via large cross section (at least 32 mm²).

The belt scale (weigh feeder) is a sensitive measuring device. Since sometimes interfering material sediments may occur, a corresponding maintenance operating expense is indispensable. The maintenance intervals depend on the ambient conditions. After start-up a daily check should be done. Due to the state determined thereby the maintenance intervals can be correspondingly changed later on.

6.1 Status control Belt scale (Weigh feeder)

In principle the maintenance works at the scales are limited to pollution control and checking of tare.



After replacing parts of the scale or after exchange of the digital weighing electronics, the impeccable function of the scale has to be re-established by taring and tests.

6.2 Taring >0<

To ensure the supply of correct results, the tare of the scale has to be adjusted properly.



Before starting taration, the scale has to be checked for disturbing influences. This usually has to be done by means of a visual inspection of trained personnel.



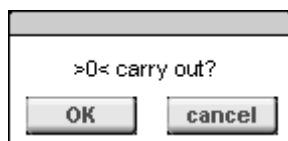
Verified systems must be tared regularly (usually daily)!

Taring always at running belt! Impact flow meters are tared with switched-off conveying length.

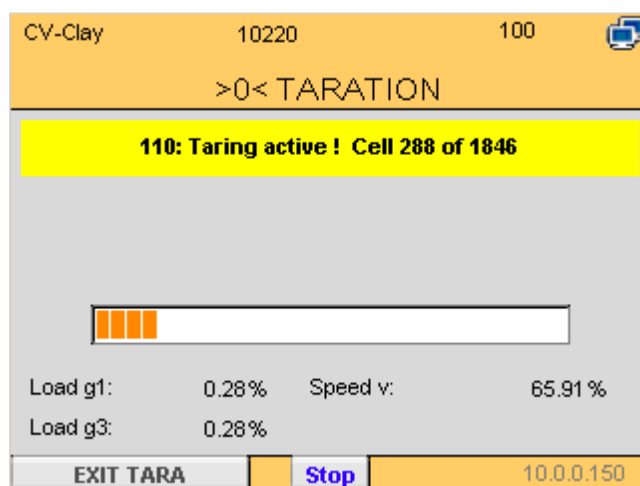
To ensure the supply of correct results, the tare of the scale has to be adjusted properly. The taration can only be started in the Graphic screen.



After pressing key >0< and confirmation the taring process runs automatically. The ZERO POINT of the scale is determined. Then the system changes again into normal operation.



confirm "OK" !



6.2.1 Mean value tare

The taring process runs down in following steps:

- **"Proceed taring?"** Confirm with OK
- **"EMPTYING SYSTEM"** (only if the scale does not recognize "EMPTY" at the start of taring)
- **"Settling Time"** (approx. 10 seconds)
- Storing of tare measured values (one belt revolution).

6.2.2 Absolute value tare

The taring process runs down in following steps:

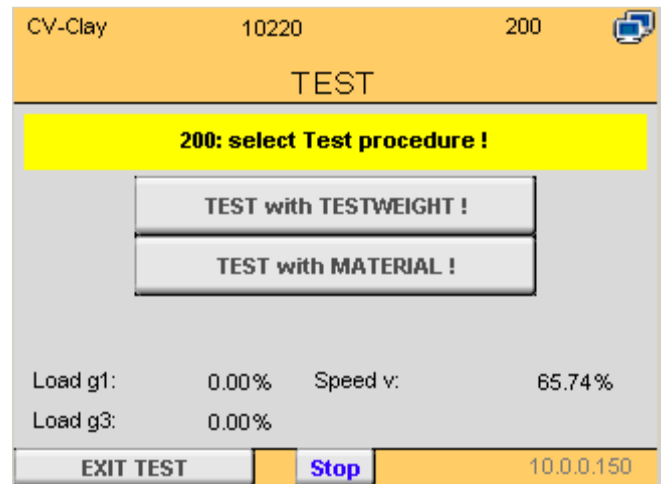
- **"EMPTYING SYSTEM"** (only if the scale does not recognize "EMPTY" at the start of taring).
- **"Wait for SYNC"**
- **"Belt calibration"** (one belt revolution)
- Storing of tare measured values (one belt revolution).

6.3 Test

By means of a test the accuracy of the scale can be checked with real material or with test weight and in case of need be corrected. If in normal operation the key „TEST” is pressed, a selection appears:

„TEST with TESTWEIGHT !” is the standard selection, at which the scale usually is tested with the test weight supplied.

„TEST with MATERIAL !” permits the check of the scale with real material and has to be preferred against the test with test weight, if possible.



Verified systems must be checked regularly!

6.4 Test with test weight (test load)

If for reasons of time or for technical reasons no material test is possible, the measuring accuracy of the system can be checked quick and easy with the test weight.

The drive must run, but the system must not convey any material during the test with test weight!

Press  to start the process.

If the report “210: waiting for EMPTY at g3 point” appears, the tare of the scale is not o.k. or there is still material on the scale.

It has to be waited until the remaining material has left the scale. Otherwise the test has to be stopped (“EXIT TEST”) and the scale has to be checked and tared.

Load g1:	18.73%
Load g3:	18.72%

CV-Clay 10220 210			
TEST			
210: waiting for empty at g3 point !			
Last Test:		0.00 %	
Load g1:	31.65 %	Speed v:	66.05 %
Load g3:	31.65 %		
EXIT TEST		Stop	10.0.0.150

After the start the measured weight must fall beneath the adjusted empty limit at the measuring point g1 as well as at the discharge point g3. Only then the system switches into the next step.

CV-Clay 10220 210			
TEST			
211: PLEASE LAY ON TESTWEIGHT !			
Last Test:		0.00 %	
Load g1:	38.68 %	Speed v:	65.78 %
Load g3:	0.00 %		
EXIT TEST		Stop	10.0.0.150

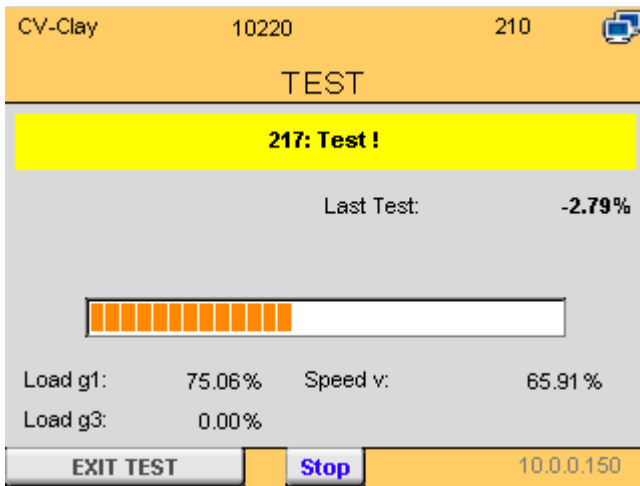
If **211: PLEASE LAY ON TESTWEIGHT !** is indicated, the test weight usually has to be laid on the scale manually or by levers.

Sometimes the test weight consists of two weights, which have to be laid on the left and right side of the weighing bridge.

Also, automatic or semi-automatic, motor-driven systems exist.

CV-Clay 10220 210			
TEST			
214: waiting 6 s !			
Last Test:		0.00 %	
Load g1:	67.36 %	Speed v:	66.80 %
Load g3:	0.00 %		
EXIT TEST		Stop	10.0.0.150

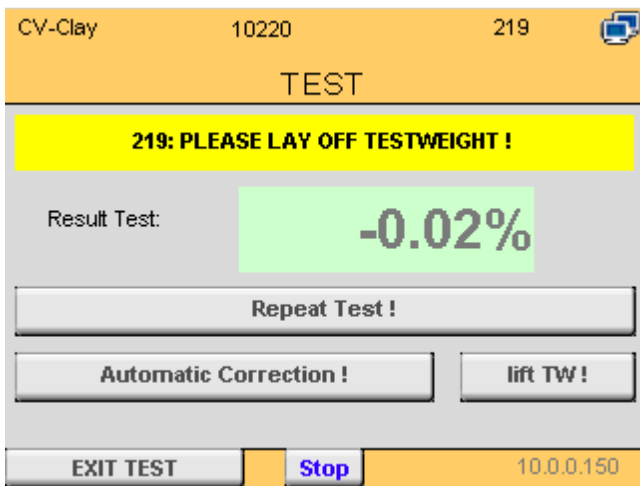
If the load by the test weight achieves approx. 60% of the test weight parameter, the system changes to the settling time for approx. 15s.



The test with test weight (test load) runs down.

During the test is running, the load value with test weight is indicated („weight g1 :”).

A progress bar informs about the test run.



Shown is: „Test result:” **-xx.yy%**

The result informs about the measuring accuracy of the scale. If the deviation is more than the permitted tolerance and within the limits of correction (standard adjustment = 5%), a correction of the measuring can be done with the key „Automatic correction”.

The message „limit of correction” indicates that a correction is not possible because of too high deviation. If during the test with test weight a deviation higher than the permitted tolerance (1%) is measured, the test has to be repeated with key „Repeat test !”.

As soon as the test weight is lifted, the change into normal operation is done after a short period of settling time.

Possible causes of a too big deviation, which have to be eliminated before the correction:

- Pollution of weighing roller(s)/weighing bar resp. of measuring length limiting
- Pollution of the weighing belt or maybe bad run of weighing belt
- Damage of weighing belt
- Test weight(s) not laid on correctly
- Material guiding not adjusted correctly. The material guiding must not impede the scale.



At a verified system the correction option would be an illegal intervention in the system. Thus, this possibility is switched off and not selectable.

6.5 Test with material

Permits material check with 10-fold resolution of counting compared to normal operation. Evaluation is done at dosing point „g3“.

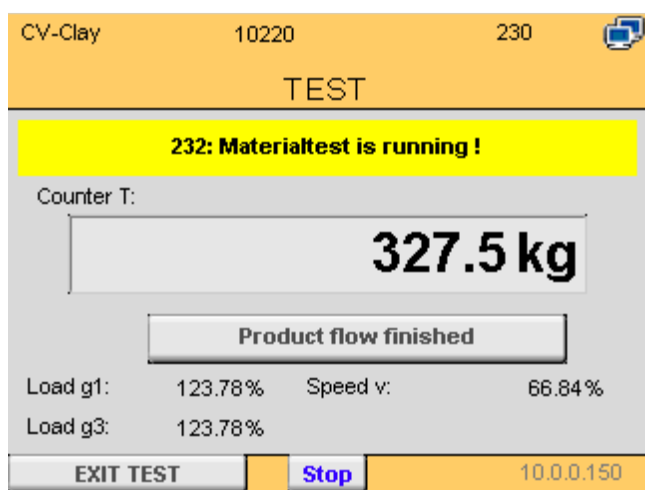
The counters „A“, „B“ and „C“ as well as the counting pulse output are NOT blocked during material test. The dosing continues as normal.

If the weighing belt gets empty during material test, negative measured values are deducted from the actual counter reading. However, a negative count is not possible.

If an adaptation has been done with the area weight correction, the adaptation is deleted!

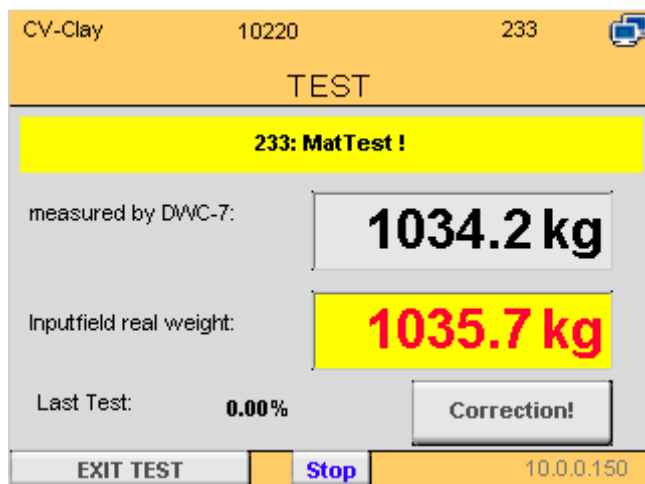
Procedure at material test:

Provide a material sample with at least 10-fold quantity of the counting step at normal operation (= 100-counting steps at material test).






Proceeding at material test:

1. Press key „TEST“. Selection screen „TEST“ appears.
2. Start with key „Material test“. The picture represented on the left appears.
3. Switch on material conveying. The weighing belt load should be in the normal range during the material test („g1“ = approx. 50-80%).
4. When the material sample has passed, stop the material transport.



Evaluation of material test:

1. Press key . The picture represented on the left appears. In case of a test quantity less than 100 counting steps, the test routine is left after 10s. Evaluation is not possible.
2. Re-weigh the material sample conveyed.
3. Overwrite the suggested value (= the value measured by the scale) with the actual weight in the yellow real weight field and press .
4. The material test permits a correction corresponding to the adjustment at parameter „P2015 limit of correction“. If due to the correction the limit of correction or the measuring range of the weighing channel would be exceeded, no correction is possible. An error message appears. The change is rejected and the original value is indicated again.
5. With the key  the mode can be left. Otherwise the material test is finished self-acting after 15s.



At a verified system the correction option would be an illegal intervention in the system. Thus, this possibility is switched off and not selectable.

7 Trouble shooting / Error handling

It has to be observed that the fault indication system also contains normal status messages, which might also be activated as warnings or criteria for operation shut-down in case of need.

This picture shows the upcoming status- and error messages:

RED switches off the ready-to-operate message and usually results in a stop of system

YELLOW warning message

BLUE message in the memory

GREY pure status message without effects

Stored errors can be deleted with the key „ACK“. Deleting errors, which are still active, is useless, since they appear again after the selected activation delay.

Meaning of the messages and solution in case of occurrence of an error:

• S00 Loadcell mV error channel 0

Cause: The measured value at the weighing channel is either lower than 0,55 mV (5%) or higher than 14,35mV (130%).

Solution:

1. Check if a damage can be determined at the load cell(s).
2. Check if the cable connection between weighing electronics and load cell(s) is o.k.
3. Check supply voltage for load measuring and measuring signal:
Supply: 5,5 VDC
Measuring signal: max. 12mV, 0mV at relieved load cell(s) (see test protocol)

• S01 Loadcell mV error channel 1

• S02 Loadcell mV error channel 2

• S03 Loadcell mV error channel 3

• S04 Loadcell mV error channel 4

• S05 Loadcell mV error channel 5

See description of weighing channel 0!

• S06 Alarm 6

• S07 Alarm 7

Currently unused!

• S08 Scale is empty

Cause: The belt load is lower than the limit value „P2030 Scale empty“.

Solution: This status message disappears by itself as soon as sufficient material is on the measuring length.

• S09 Min Load

Cause: The belt load is lower than the limiting value parameter adjusted.
At a weigh feeder the load of the weighing belt required for keeping the dosing capacity (corresponding to the pre-set of set point) is only hardly achieved.

Solution: Provide more material discharge. If the material feeding being too light is due to changed material properties, maybe a re-adjustment of the material feeding is required.

• S10 Max Load

- Cause: The belt load is higher than the limiting parameter adjusted. Thus, the weighing belt is overloaded.
 Solution: Provide a lower material discharge. If the material feeding being too heavy is due to changed material properties, maybe a re-adjustment of the material feeding is required
 At a belt scale the weighing range (rated capacity) is underestimated.

• S11 Alarm 11

Currently unused!

• S12 Drive / Tacho error

- Cause: The weighing electronics receives the message „Drive switched on“, but no tacho pulses can be measured.
 Solution:
 1. Check if the motor really runs.
 2. Check if in picture „Control“ under „DI/DO-Basis card“ at „DI0/T“ the display changes between 0 and 1.
 3. Check if the tacho works.
 4. Check if the wiring connection between weighing electronics and tacho is O.K.

If the tacho pulse at the terminals is existing, but in picture „control“ no change between 0 and 1 is detectable, the input card DS1319 is defective.

• S13 Not recognized band start mark

- Cause: The (logical) belt start in the operation mode “Absolute value tare” was not detected. The system does not know which belt area is currently on the measuring length and therefore cannot deduct the right tare value.
 Solution: Check sensor, sensor distance and belt start mark. It has to be noted that this start mark can also be vulcanized inside into the belt.

• S14 Feeder error

- Cause: At feeder control it is not possible to correct the load of the measuring length to the adjusted load set value (in case of belt scale with feeder control to the nominal capacity) with the adjusted limits „P3310 F Min-limit“ and „P3312 F Max-limit“.
 Solution: Better adaptation of feeder.

• S15 Belt misrun

- Cause: The belt run monitoring signals an off-center run of the weighing belt.
 Solution: Check belt steering device, adjust belt to centric run .

• S16 Belt-Slip fault

- Cause:
 1. At existence of a control pulse generator the control pulses do not come or come too late.
 2. At design with „Absolute value tare“ the synchronizing pulse does not come or comes too late.
 Solution: Cause for belt slip might also be a torn weighing belt. If the belt does not really slip, at “absolute value tare” the synchronization mark might have been dropped off.

• S17 Drive stopped

- Cause: No tacho pulses arrive (drive switched off).
 Solution: If the message comes with running drive, check tacho for correct function.

• S18 Set value error

Cause: The dosing capacity set point is outside the permitted range.

Permitted range:

Less than „P3120 Min set point" or more than 102% of rated capacity.

Solution: Provide correct set point. If the set point is higher than 102%, limiting to 102% is done.

• S19 Deviation

Cause: Due to minor belt load or due to an error in the driving system, the nominal dosing capacity cannot be kept, the deviation is more than the adjusted tolerance (tolerance related to nominal capacity of the scale).

Solution: 1. Weigh feeder:

Provide sufficient weighing material on the weighing belt. Check driving system for sufficiently loaded scale. Often also missing weighing material is the cause.

2. Belt scale with feeder control:

Better adaptation of feeder

• S20 LegalForTraid seal

Cause: The parameter switch was activated.

Solution: Close parameter switch.

• S21 Belt misrun LEFT

Cause: The belt run monitoring signals an off-center run of the weighing belt LEFT in conveying direction.

Solution: Check belt steering device, adjust belt to centric run.

• S22 Belt misrun RIGHT

Cause: The belt run monitoring signals an off-center run of the weighing belt RIGHT in conveying direction.

Solution: Check belt steering device, adjust belt to centric run.

• S23 Chain Tension error

Cause: This message might occur at systems with integrated cleaning devices. A proximity switch signals that the chain(s) for the cleaning scrapers has (have) to be tightened.

Solution: Check the chain tension of the cleaning device and tighten chain(s).

• S24 Tare error

Cause: 1. During the taring process an unpermitted value was measured on the weighing bridge(s).

2. The taring process was interrupted before the proper end.

Solution: Check/clean the scale, repeat taring process.

• S25 Test error

Cause: At the test with test weight the set point 1000 was not achieved by more than the permitted tolerance (+/- 1,0%).

Solution: Check the scale, carry out taring and repeat the test.

• S26 Filling error

Cause: The refilling process (differential dosing) in the pre-bin took longer than the parameter adjusted permits.

Solution: Missing material or poorly flowing material may activate this error.
Provide material or improve flowing properties by aeration or similar.

• S27 BinMovement error

Cause: During emptying the loss-in-weight-feeder an implausible increase or decrease of weight (more than the adjusted limiting value) is measured.
Also jammed or blocked compensators (pre-installed or subsequent to the scale) might trigger this error. Even faulty adjusted dedusting devices or exhaustions might be considered.

Solution: Check mechanics, compensators, exhaustion, filter bags, etc.

• S28 Decentral IO offline

Cause: The connection to the local IO-Module direct at the scale is no longer available. This message can only occur at a decentral structure with a X2X-Link-Bustransmitter-Module in the main rack.

Solution: Check cable and supply voltage at the local module.

• S29 Parameter error

Cause: The checksum of the parameters does not coincide, possibly the set of parameters was destroyed. This error message is only relevant for "Legal for Trade" certified systems.

Solution: A consultation with the manufacturer is necessary. Has no further use in a "Legal for Trade" certified system.

• S30 Emergency stop active

Cause: An external emergency stop switch of a drive was activated.

Solution: Acknowledge external emergency stop.

• S31 Fieldbus Offline

Cause: There is a Fieldbus module integrated in the weighing system, however, at the moment it is not connected to a central Mastersystem.

Solution: Check cable connection to Mastersystem
Check parameterization of Mastersystem

• S32 MM00 Error

• S36 MM01 Error

• S40 MM10 Error

• S44 MM11 Error

Cause: The integrated Movimot frequency inverter (channel xx) reports an error.

Solution: Perform error handling according to SEW-manual.

• S33 MM00 Inverter failure

• S37 MM01 Inverter failure

• S41 MM10 Inverter failure

• S45 MM11 Inverter failure

Cause: The integrated Movimot frequency inverter (channel xx) reports an inverter failure.

Solution: Perform error handling according to SEW-manual.

- S34 MM00 offline
- S38 MM01 offline
- S42 MM10 offline
- S46 MM11 offline

Cause: The integrated Movimot frequency inverter (channel xx) does not communicate with the DWC-7.
Solution: Check the RS485 cabling and terminating resistors.
Check the supply voltage of the Movimot inverter.

- S35 Alarm 35
- S39 Alarm 39
- S43 Alarm 43
- S47 Alarm 47

Currently unused!

- S48 XD1 speed monitoring
- S51 XD2 speed monitoring
- S54 XD3 speed monitoring
- S57 XD4 speed monitoring
- S60 XD5 speed monitoring

Cause: Message of the speed monitoring (speed monitoring device) of the corresponding auxiliary drive
Solution: Check if the auxiliary drive can rotate/move.
If no mechanical reason can be found, a check of the corresponding parameters is necessary.

- S49 XD1 fault
- S52 XD2 fault
- S55 XD3 fault
- S58 XD4 fault
- S61 XD5 fault

Cause: Message about a fault of an external power part of the corresponding auxiliary drive
Solution: Locate and eliminate failure reason according to the connected power part (motor current protection relay, motor starter or frequency inverter). See wiring diagram, in order to check where and how the fault is connected.

- S50 XD1 run
- S53 XD2 run
- S56 XD3 run
- S59 XD4 run
- S62 XD5 run

Cause: Status message „Auxiliary drive runs”
Solution: This is only a status indication (no fault).

- **S63 Licence failure**

- Cause: In a verified system Hardware components were exchanged, which cancel the verification admission.
- Solution: Install original component(s) / serial number(s) again. At an initial set-up or at an intended exchange of components the manufacturer KUKLA must be contacted, in order to calculate a new license code.
Then, a complete initial- or re-verification of the system is necessary.

8 Verifiable applications according to MID

8.1 Examination of the entire system

The examination of the entire system must be done in accordance with the conditions of the type examination.

The communication between basic device and operator panel is secured via CRC (cyclic checksum verification) so that a faulty indication of data on the operator panel is not possible.

8.2 Activation of the verified mode

Usually, the system operates in industrial mode, this means that the parameter "P1055" is set to 0 (not active). When a verification class is specified in this parameter, this leads to the following modifications in the operating system of the basic device:

Industrial mode	Legal for Trade verified mode
free access to the parameter mode via password or also possible without restriction	access to the parameter mode ONLY via digital input DI01
test with test weight with semi-automatic correction option	test with test weight can be performed, but NO corrections are possible
material test with semi-automatic correction option	material test can be performed, but NO corrections are possible
threshold for tare error adjustable freely	threshold for tare error limited to +/-4%
change of parameters possible via Fieldbus	change of parameters via Fieldbus generally locked
linearization of the weight measurement possible	linearization of the weight measurement not possible

8.3 Legal for Trade seal

After the approval of the entire system, this gets sealed by an authorized person. This also includes that the parameter interlock (input DI01) gets activated and diverse parameters get documented tamper-proofly on the verification sign.

The access to the load cell input card (WM1 module) as well as to the tacho input module (TM1 module) must be sealed by suitable measures. On the latter also the digital input DI01, which permits the access to the parameter mode, is located. Usually, this is done by a sealable cover.

8.4 Counter

The counter A is a not resettable endless-counter, which can only be reset through a cold start of the entire system. Additionally, the counter C is relevant in a verified system, since this gets reset for every production section (e.g. a truck batch) and gets deposited tamper-proofly in the internal memory (ALIBI-memory) with date/time as well as a checksum.

This data can be read out or also printed out via the Fieldbus interface.

8.5 ALIBI - Memory

The DWC-7B system has two counters, which are intended for the long time storage. These are the not resettable counter A and the resettable counter B, which can be reset manually or via digital input.

A data set always consists of the following parts:

1. Consecutive number
2. KUKLA fabrication number for the explicit identification of the weighing system at the use of several devices
3. Not resettable counter A with unit
4. Resettable counter C with unit
5. Date and time in the format DD.MM.JJJJ SS:MM
6. Checksum, which was calculated at the establishment of the data set according to an unpublished algorithm

The last 1000 data sets get stored in the integrated memory of the basic device protected against power failure on a FLASH memory and can be transferred to the operator panel if required. This transfer is also secured via checksum so that only verified data gets indicated. For that, the received checksum is compared to the checksum, which was calculated for this data set by the panel itself.

The data gets stored in the DWC-7B basic device. The display only serves for the representation of the values for the user.

The ALIBI-memory can be queried with the key "S7: Auxiliaryfunction".

The subsequent screen already represents the last entries of the ALIBI-memory.

If the internal checksum does not coincide with the indicated values at an entry, the corresponding line gets indicated coloured red. Usually, this should not occur.

The navigation keys have the following functions:














Update data list of the basic device



Scroll up/down in steps of 1



Scroll up/down in steps of 100

DBWV		FN: 10222	Feature		
2	A = 22852kg	24.07.2017 11:06		Alibi	
10222	C = 455kg	CRC = 50726			
3	A = 22865kg	24.07.2017 11:06			
10222	C = 13kg	CRC = 48188			
4	A = 22980kg	24.07.2017 11:07			
10222	C = 115kg	CRC = 18157			
5	A = 26467kg	24.07.2017 11:53			
10222	C = 3487kg	CRC = 202			
					
					
<<	HOME	Start	>0<	TEST	>>

On the display the last 1000 values can be represented, internally the system though stores up to 1Mbyte data, what corresponds to at least 25000 data sets. This data can be copied via FTP service if required. The used checksum algorithm is confidential and gets only disclosed towards "designated offices" or on judicial requests.

8.6 Watermarks

The system monitors itself permanently, in order to ensure an impeccable, intended function. The icon stands for the number of the “designated office”, which has implemented the type examination.

If all monitored components and program parts work impeccably and if also the parameter interlock is activated, the watermark is represented in the graphic screen as well as in text screen 1 and 2.



If one or several monitored components or program parts do not work impeccably or if the parameter interlock gets deactivated, the watermark is represented as inactive with a red, diagonal cross.



The following causes can lead to the loss of the watermark:

1. Digital input „DI01 Parameter interlock” is adjusted to NOT ACTIVE.
2. Tare error (scale outside of the 4% OIML limit)
3. License fault, the Hardware structure (serial numbers) does not correspond to the expected license code (P1050).
4. The TM1 tachometer module with the parameter interlock input is not available or faulty.

The watermark must be checked at every loading process. As long as it is represented crossed out, the intended use is not given.

8.7 Software - Update

In a sealed verification system with a necessarily active parameter interlock no software update is possible. Nevertheless, a new software gets installed via USB flash drive or via Ethernet, this leads to a starting blockade of the entire basic device.

This can only be solved by a deactivation of the input "DI01 parameter interlock". For this, the verification sign must be breached and the system must be re-verified if necessary.

Possible software numbers are:

W.02.xx.xx (Weighing system)

P.02.xx.xx (Service module)

Software versions can be queried in the menu "S6: IO-Status / Software status".

To ensure that the system cannot be manipulated, the license code P0150 as well as the parameter checksum R9005 of the basic device must be noted down on the verification sign.

DEW	FN: 10222	SW Status
P9920 IP address:	10.0.0.150	<input type="button" value="HW ID"/>
P9921 Subnet Mask:	255.255.255.0	
R9900 SW Operatorpanel OP7:	P.02.00.00	
R9000 Software DWC7:	W.02.00.00	
Write cycles:	16572	
R9005 Checksumme PA:	50532	
MatTest Volumet.	<input type="checkbox"/>	
<input type="button" value="Back"/>	<input type="button" value="Start"/>	

9 Further Documentation

Documentation DWC-7 weighing system

Document	Short description	Target group
KA7_V010*	Short instruction with the most important operating procedures	Operating personnel
T1_DWC7A_V01*	Standard operating manual	Operating and maintenance personnel
T2_DWC7A_V01*	Instruction for first and reprogramming of the system	Qualified maintenance personnel and producer
T3_DWC7A_V01*	General Fieldbus description	PLC - programmer Qualified maintenance personnel Producer personnel