

# Siwarex with Braumat



Ort: Würzburg  
Datum: 8.11.16

## Autor

Name	Abteilung	Ort	Telefon	Email
Stefan Schraner	I IA AS PA DS B	Wbg		Stefan.Schraner@siemens.com

**Note:** A Recipe with Siwarex-Steps can only be started by the Order-System with Input of the according quantity!

## Features

16 (64) Scale per PCU

- Location-Groups: 127
- Locations: 255;
- Automatic correction of the coarse / fine-value according to the previous scaling.  
It has to be activated in the Parameterization Silo "OptimizeFine" DB92x.DBX118.7

## Integrate following Blocks

FB41, FB637, FB639, FC637, FC638, DB636, DB894, DB895, DB896, DB898, DB920, DB921, UDT 636, UDT 637, UDT 638,

FB1220: FC637 (is calling FB637 mit DB894..)

The best is to pick this from the Simatic-Manager-Project.

For the Silos you have to use the Silo.awl Source and select the relevant Silo-Groups you have.

Integrate following symbolic:

WEIGHER_READY	M	1112.0	BOOL	Weigher standstill, empty
WEIGHER_DOSE	M	1112.1	BOOL	Dosage is running
WEIGHER_DOSE_TOL_POS	M	1112.2	BOOL	Dosage finished with range overflow (tol
WEIGHER_DOSE_TOL_NEG	M	1112.3	BOOL	Dosage finished with range underflow (to
WEIGHER_DOSE_OK	M	1112.4	BOOL	Dosage finished without error
WEIGHER_DOSE_COARSE	M	1112.5	BOOL	Dosage coarse
WEIGHER_DOSE_FINE	M	1112.6	BOOL	Dosage fine
WEIGHER_EMPTY	M	1112.7	BOOL	Weigher is empty
WEIGHER_TARE_OK	M	1113.0	BOOL	Tare finished without error
WEIGHER_TARE_ERR	M	1113.1	BOOL	Tare finished with error
WEIGHER_AUTO	M	1113.3	BOOL	Operating mode automatic
WEIGHER_HAND	M	1113.4	BOOL	Operating mode hand
WEIGHER_ENM		1113.5	BOOL	Switch over auto/hand enabled
WEIGHER_OP_OFF	M	1113.6	BOOL	Weigher is in off-mode

Define at least 2 Blocks with

**1. Check siwarex**

```
CALL FC 645 // "BmWeigherUsrCallFC"  
iWeigher:=1  
iMode :=0 //check status  
RET_VAL :=#TEMP2
```

And Transition:

A M 1112.0 // "WEIGHER\_READY"

**2. Dosing**

```
L 0  
T MW 1112  
CALL FC 645 // "BmWeigherUsrCallFC"  
iWeigher:=1  
iMode :=1 // Upward dosing with balance; 2= Downward dosing with balance  
RET_VAL :=#TEMP2
```

And Transition:

- O M 1112.2 // "WEIGHER\_DOSE\_TOL\_POS"
- O M 1112.3 // "WEIGHER\_DOSE\_TOL\_NEG"
- O M 1112.4 // "WEIGHER\_DOSE\_OK"

### **The Mode describes the function of the weigher**

- 0, 16: Status inquiry
  - 1: Upward dosing with balance
  - 2: Downward dosing with balance
  - 4: manual upward dosing with balance without indicating prop. upw. with tare  
(no flags coarse, fine)
  - 5: inching prop. upw. with tare
  - 6: inching prop. downw. with tare
  - 21: prop. upw. without tare
  - 22: prop. downw. without tare
  - 24: manual prop. upw. without tare
  - 32: tare

## **SIWATOOL**

Install SIWATOOL 2 FTA

In order to make adjustments you can use this Software. But it needs a serial COM! May be USB-Adapter is required?

Make a **serial cable** with 9-pin plug

cable 5 – 5

cable 3 – 2

cable 2- 3

Start Siwatool and select Wizard (Tools) and set max. Weighing range and select whether a filling scale (Silo above diff. components) or an emptying scaling.

Make adjusting of the weigher with 2 values (0 and 75% of total range).

Finish Service-Mode of the scale.

### **1.1 Braumat-Konfiguration**

Copy siwa\_fta.pcu to \windcs\pcu.00x\siwa\_fta.pcu

Copy silo\_gr\_s1.pcu to the according folder \PCU.00x\Texte

Modify silo\_gr\_s1.pcu to the Silogroups you are using and change the text e.g.

```

silo_gr_s1.pcu - Editor
Datei Bearbeiten Format Ansicht ?

/*
Datum Name Aktion
-----
29.09.99 Hofmann Neu mit Erweiterung
28.02.00 Weber Doppelbelegungen beseitigt
05.07.00 Weber Informationstext f. Dichte 1 u. 2
04.12.00 Hammer Namensänderung von Parametern
20.01.01 Maxa SettingTime>Setting_T, InchingTime>Inching_T
22.01.02 Weber & Schmitz Namensänderung von Parametern, FKTAW hinzu Anpassung an comp1.def
*/

/* ##### */
object wgh_SILO_w_1=DB920;(*Siwarex Scale 1*)
CID=1920;
max=128;
offset=100;
length=100;
number=DBW8;
filename=SILO_w_1;
{
offset (3,DBW2,I16)=100; (*offset of 1st dataset*)
DS_Length (2,DBW4,I16)=100; (*dataset length*)
silo_cnt (1,DBW8,I16,RD); (*silo count*)
struct
COMPNO (101,DBW4,I16); (*Contiguous process input number*)
Content (102,DBD6,I32,HI)=0; (*Content*)
MaxContent (103,DBD10,I32,HI)=0; (*Max. content LO-WORD*)
}

```

Use picture SIWA\_F2.bik and SIWA\_F2.bmp

Prio 1-255 for same Material

### Activation in Braumat V7.x:

\windcs\_V7\recipe\project\PLANT.INI

[ComponentList]

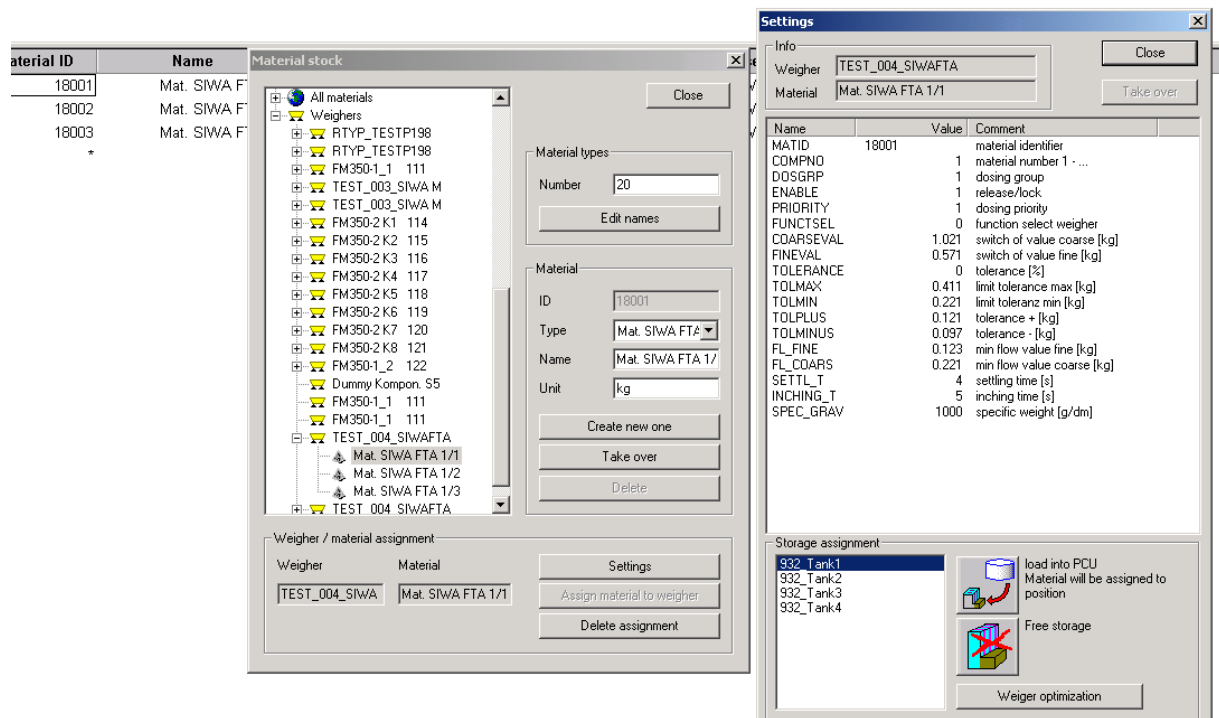
;Enable recipe system for working with componentlist

Enable=1

## 1.2 Definition of components and weigher

Open Recipe-System, Engineering, Process-Input

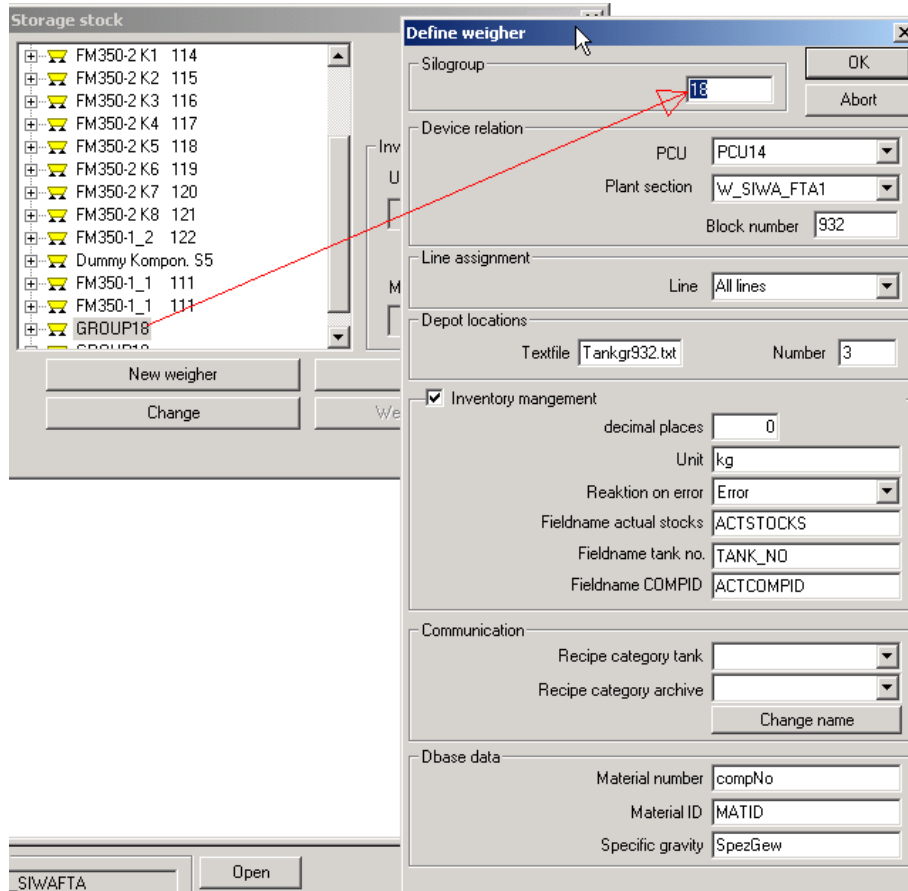
Create new material, you can link to groups



Right window: Load into PCU: **Here the according link to the correct Tank has to be done.**

Material-Data are located in: \windcs\_V7\recipe\COMPLIST\MATERIAL.DBF

**Then Select Recipe-system, Engineering and Storage-stock and create new scale**



The Name has to be defined in texte.x\rtyp.txt Rtype 100

d:\windcs\_V7\recipe\COMPLIST\SILON.INI:

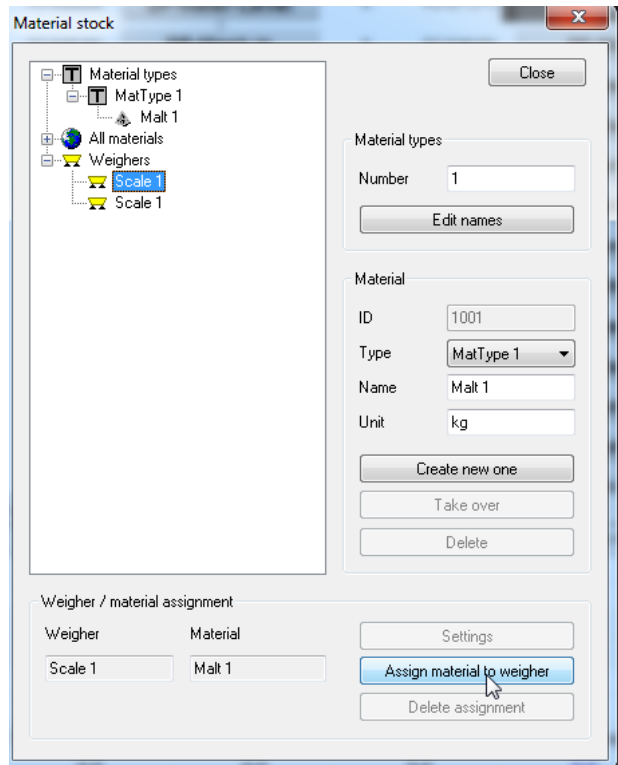
Description in d:\windcs\_V7\recipe\COMPLIST\CL\_DAT\comp1.dbf

Dosing-group: sequence (if several times the same material)

Reaction at empty list: 1= cancel etc

Used Tank: for write back

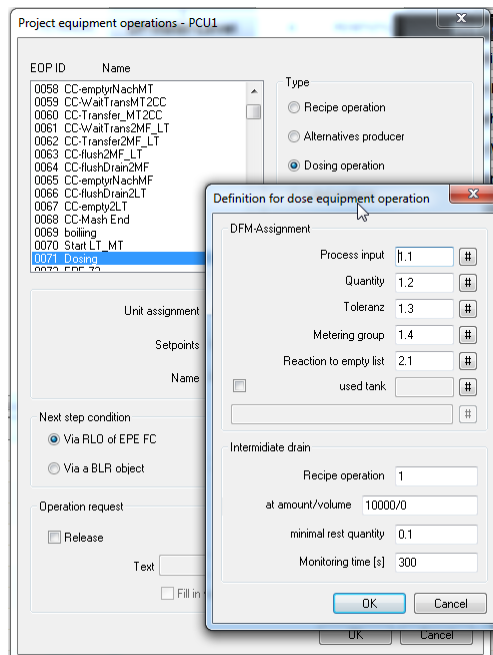
Technical OP: which EOP if intermediate discharge....



Then Assign Material to weigher

## 1.3 Recipe-System

Define in a Recipe a Dosing-EOP with specific Parameters



Recipe operation = EOP for discharge (in our case 332).

Define the EOP's like that

3	FC1331(331) Dos. SIWA FTA 1	00:00:20	
		Time	
4	FC1332(332) Entl. SIWA FTA 1	00:01:00	
		Time	
5	+++ End	00:00:10	

SIWA FTA 1 Mat[-]	SIWA FTA 1 Menge[	SIWA FTA 1 To[kg]	SIWA FTA 1 Dos.G[	SIWA FTA 1 Reakt[
#	#	0.000	#	Ignorieren

Define the File Dosreact.txt in PCU.00x with 3 lines

Ignore

Recipe load error

Remove sequence

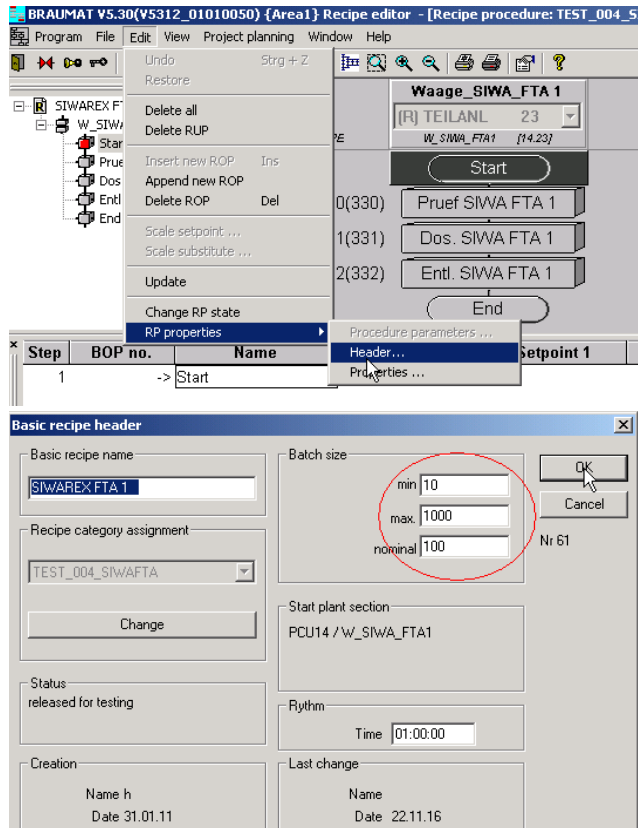
At amount / volume: this values describes the max. kg for the scale for one component until discharge is necessary. This influences how many EOP's are generated by the order-system.

Setup the Nominal-Size of one batch (all components together).

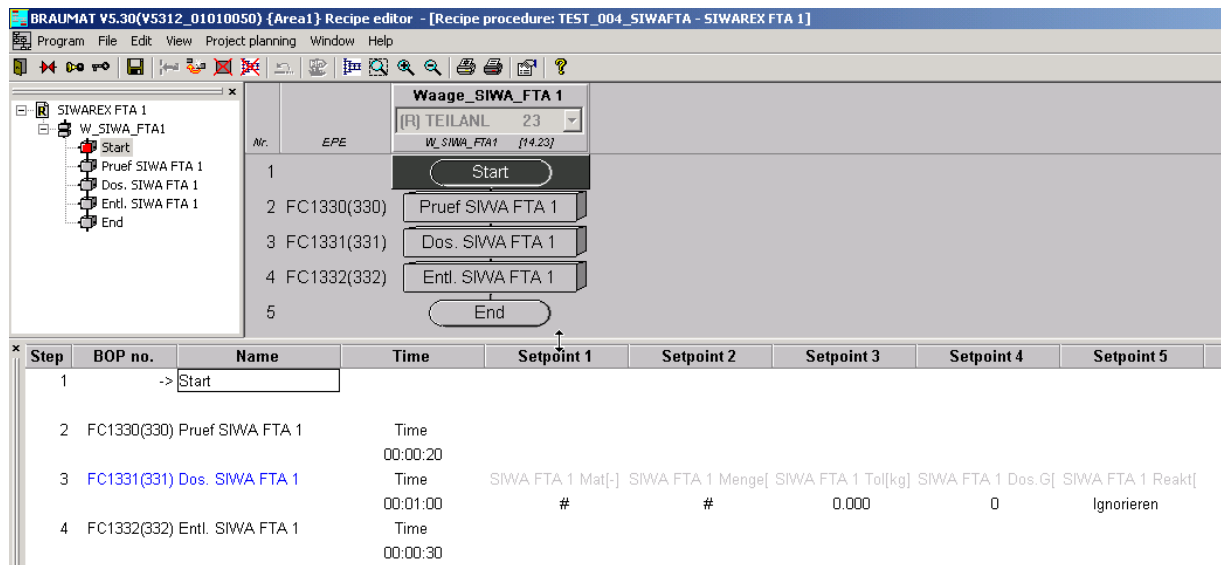
Parameter	Value	Scale	Dimension	Minimum	Maximum	Comment	
Material ID	Name	Quantity	Dimension	PCU-Nr.	PCU	PS Nr.	Plant section
18001	Mat. SIWA FTA 1/1	4 kg		14	PCU14	23	W_SIWA_FTA1
18002	Mat. SIWA FTA 1/2	3 kg		14	PCU14	23	W_SIWA_FTA1
18003	Mat. SIWA FTA 1/3	3 kg		14	PCU14	23	W_SIWA_FTA1

This is the reference-Batch.





The limits for the Batch and the nominal Batch are defined in here



Here a small dosing recipe

BRAUMAT V5.30(V5312\_01010050) {Area1} Rezepteditor - [Grundrezept: TEST\_004\_SIWAFTA - SIWAREX FTA 1 ]

Program Datei Bearbeiten Projektierung Fenster Hilfe

Grundrezeptname: 1 SIWAREX FTA 1  
 Langname: SIWAREX FTA 1  
 Rezeptkategorie: TEST\_004\_SIWAFTA  
 Chargengröße Einsatzstoffliste: Nominal 100  
 Rezeptstatus: Freig. Test  
 Rezeptprozedur Name: SIWAREX FTA 1

Parameter	Wert	Skal.	Dimension	Minimum	Maximum	Kommentar			
Material ID	Name	Menge	Dimension	PCU-Nr	PCU	Seq Nr	Teilanlage	Dosiergruppe	Lagerortgruppe
18001	Mat. SIWA FTA 1/1	3.5 kg		14	PCU14	23	W_SIWA_FTA1	1	automatisch
18002	Mat. SIWA FTA 1/2	4.5 kg		14	PCU14	23	W_SIWA_FTA1	1	automatisch
18003	Mat. SIWA FTA 1/3	2.3 kg		14	PCU14	23	W_SIWA_FTA1	1	automatisch

Then materials can be linked to this Dosing-EOP (right click....).

## 1.4 Parameterization

BRAUMAT V5.30(V5312\_01010050) {Area1} Parametrization - Wgh\_GF.13 - SIWAREX FTA 1

Program File Edit Options Acknowledge Help

	Name	D.Type	A.Type	Value	Comment	Address
1	KOMP_DFM	Source	ENG	DFM2,80,SOLL_DINT	Komponenten DFM	DB 645 DBD 2240
2	GEW_DFM	Source	ENG	DFM2,81,SOLL_DINT	Gewicht DFM	DB 645 DBD 2228
3	TOL_DFM	Source	ENG	DFM2,82,SOLL_DINT	Toleranz DFM	DB 645 DBD 2236
4	TA	I16	ENG	23	Zugeordnete Teilanlage	DB 645 DBW 2200
5	WweigherType	I16	ENG	10	Waagentyp 0: SIWAREX-M	DB 645 DBW 2308
6	TF_DB	I16	ENG	894	TF-DB=830, 832, ...	DB 645 DBW 2278
7	SILO_DB	I16	ENG	932	Silogruppen - DB=920, 921, ...	DB 645 DBW 2248

Define a weigher and the according DBs;

The DFM correspond to the according Recipe-Definition

BRAUMAT V5.30(V5312\_01010050) {Area1} Parametrization - Wgh\_SIWA\_FTA\_W\_1.1 - WAAGE 1

Program File Edit Options Acknowledge Help

	Name	D.Type	A.Type	Value	Comment	Address
1	INT_SET_POINT	I32	ENG	3000	WEIGHTS.SET_POINT	DB 894 DBD 1612
2	INT_NET	I32	ENG	3109	WEIGHTS.NET NETTO	DB 894 DBD 1616
3	INT_GROSS	I32	ENG	11973	WEIGHTS.GROSS BRUTTO	DB 894 DBD 1620
4	INT_MOD_ADDR_IN	I16	ENG	2000	Module address for input	DB 894 DBW 1578
5	INT_DB_FTA	I16	ENG	894	DB-Number of the actual Instance-DB	DB 894 DBW 1572
6	INT_DB_FTA_RUN	I16	ENG	895	DB-Number of the actual RUN-DB	DB 894 DBW 1574
7	CMD_INPUT	I16	ENG	230	Command code Input	DB 894 DBW 6
8	CMD_ENABLE	R1	ENG	1	Command enable	DB 894 DBW 80

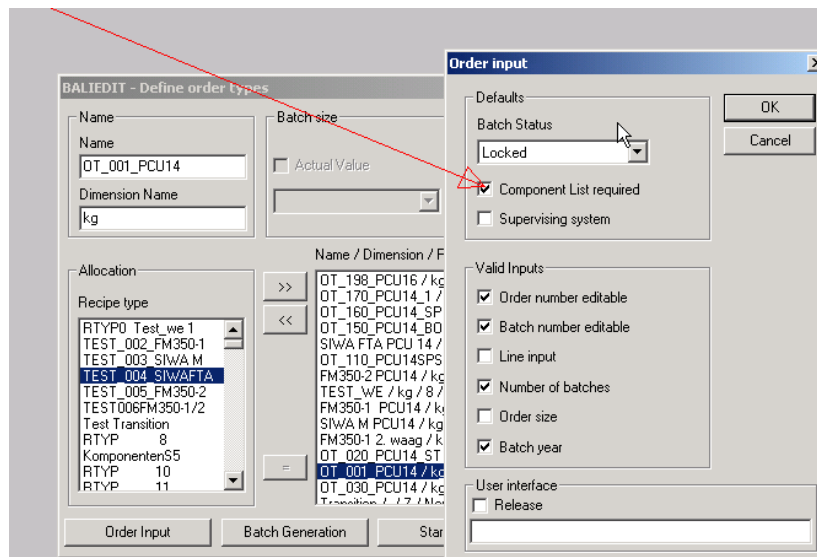
Input the relevant Module-Adress from the Hardware-Configuration in here!

BRAUMAT V5.30(V5312_01010050) {Area1} Parametrization - Wgh_SILO_W13.1 - Salt						
Program File Edit Options Acknowledge Help						
ENG SYS RT						
	Name	D.Type	A.Type	Value	Comment	Address
1	COMPNO	I16	ENG	1	Contiguous process input number	DB 932 DBW 104
2	Priority	I16	ENG	1	Priority of emptying	DB 932 DBW 116
3	OptimizeFine	B1	ENG	0	Optimization of fine current	DB 932 DBX 118.7
4	TOLERANCE	I16	ENG	2	Tolerance (%)	DB 932 DBW 160
5	TOLMAX	I32	ENG	411	GW Tolerance Max (g)	DB 932 DBD 162
6	TOLMIN	I32	ENG	221	GW Tolerance Min (g)	DB 932 DBD 166
7	TOLPLUS	I32	ENG	123	Tolerance Plus (g)	DB 932 DBD 120
8	TOLMINUS	I32	ENG	199	Tolerance Minus (g)	DB 932 DBD 124
9	COARSEVAL	I32	ENG	1021	Coarse flow setpoint value (g)	DB 932 DBD 128
10	FINEVAL	I32	ENG	571	Fine flow setpoint value (g)	DB 932 DBD 132
11	SETTL_T	I16	ENG	4	Settling time (s)	DB 932 DBW 136
12	INCHING_T	I16	ENG	5	Inching time (s)	DB 932 DBW 138
13	MonInchRepropTime	I16	ENG	10	Monitoring time inching mode (s)	DB 932 DBW 140
14	FlowCoarseTime	I16	ENG	3	Monitoring time coarse flow	DB 932 DBW 142
15	FL_COARS	I32	ENG	221	Minimum coarse flow	DB 932 DBD 144
16	FlowFineTime	I16	ENG	3	Monitoring time fine flow (s)	DB 932 DBW 148
17	FL_FINE	I32	ENG	123	Minimum fine flow (g)	DB 932 DBD 150
18	FlowCoarseDelTime	I16	ENG	2	Delay for monitoring time coarse flow (s)	DB 932 DBW 154
19	FlowFineDelTime	I16	ENG	2	Delay for monitoring time fine flow (s)	DB 932 DBW 156
20	SPEC_GRAV	I16	ENG	1000	Specific gravity (g/l)	DB 932 DBW 158
21	Flow	I16	ENG	10	Flow per minute	DB 932 DBW 170

In this parameterization, relevant values are loaded when starting a recipe.

## 1.5 Procedure for starting Weighing by the order-system

A batch is started via the order system.



First define the recipe-Type with the check-box Component-List required

BRAUMAT V5.30(V5312\_01010050) {Area1} - Batch list - SIWA FTA PCU 14

Program File Edit Options Acknowledge Help

	Jahr	Auftr.Type	Auftr.Nr	Charg.Nr	Ch.Status	Anz.Ch.	SatrtMode	
1	16	4	46	4	Locked	2	soon as possible	17.11
2	16	4	48	2	Locked	1	soon as possible	22.11
3	16	4	49	1	Locked	1	soon as possible	22.11

**BALIEDIT - New order**

Numbers

Order number: 00047

First batch number: 00001

Order

Order type: SIWA FTA PCU 14

Recipe: SIWAREX FTA 1, SIWAREX FTA 2

Line: RelLin\_Testpro\_1

Start

Mode: soon as possible

Date: 22.11.16

Cycle: 01:00:00

Time: 11:45:59

Batch Generation

Year: 16

☐ Number of batches

☒ Order size

1

100 kg

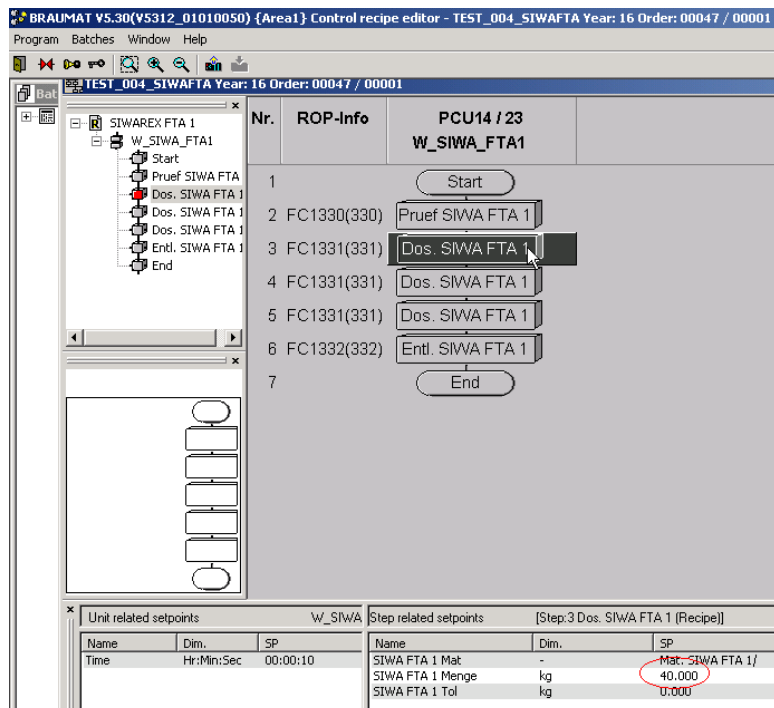
a 100 kg

Parameters

Additional Order

Input a Total Quantity for the Batch and start the Batch.

After saving the recipe the corresponding EOP's are generated automatic and visible with key F7



- The control recipe with corresponding dosing and emptying GOPs is loaded to the PLC and the unit is started.

- After the Setpoint is reached, the weighing stops. The tolerance test decides about a subsequent processing. Then it is jumping to the next dosing step.

**BRAUMAT V5.30(V5312\_01010050) {Area1} - Anlagenübersicht - End**

Programm Anlage Funktionen Optionen Quitung Hilfe

Nr	Sequenz	Seq.Status	Anzeige	Schritt	TOP	TOP...	TOP...	Zeit	Rezept	Charge	Auftragsnr.
11	Waage_FM350-1	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0
12	W_SIWA_M1	Running	A+ 0	3	211	Dos...	Runn...	02:09:23	SIWAREX M 1	1	196
13	W_SIWA_M2	Idle	A+ 0	0	0	---	Idle	03:41:33	SIWAREX M 2	1	127
21	Waage_FM350-2 8	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0
22	Waage_FM350-1 2	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0
23	W_SIWA_FTA1	Running	A+ 0	3	331	Dos...	Runn...	00:01:05	SIWAREX FTA 1	18	12

Sequenzbezogene Sollwerte W_SIWA_FTA1 [PCU14.23]				Schrittbezogene Sollwerte			
Name	Dim.	SW	IW	Name	Dim.	SW	IW
Zeit	Std:Min:Sec	00:01:00	00:01:05	SIWA FTA 1 Mat	-	Mat. SIWA FTA 1/1	Mat. SIWA FTA 1/1
				SIWA FTA 1 Menge	kg	3.500	0.328
				SIWA FTA 1 Tol	kg	-0.098	-3.172
							3.074

* Uhr...	Art	Rezepttyp	Auftnr	Charge	Ta...	TA	TaName	PCU	Baus...	Nr	Name
10:25:07	B	TEST_004_SIWAFTA	000012	000017	014	023	W_SIWA_FTA1	014	Teilant	0023	W_SIWA_FTA1 Teilanlagenmeldung:
11:22:14	B	TEST_004_SIWAFTA	000012	000018	014	023	W_SIWA_FTA1	014	Teilant	0023	W_SIWA_FTA1 Teilanlagenmeldung:
11:23:14	W	TEST_004_SIWAFTA	000012	000018	014	023	W_SIWA_FTA1	014	Teilant	0023	W_SIWA_FTA1 Überwachungszeit

Online

1:Hilfe 2:Bild 3:Sollwert 4>Status 5:Start 6:Schritt 7:Freigabe 8:B-Quit 9:akt.Rezept 10:Notiz

## Sequence - Overview

**BRAUMAT V5.30(V5312\_01010050) {A...}**

Programm Datei Prozessbilder Optionen Quitung Hilfe

**SIWAREX FTA 1**  
DB894 DBW1566 / DB645 DBW2222

3500	'Sollwert'	dI_Set_Point_Value
588	'Brutto'	dI_Gross_Weight_P
328	'Netto'	dI_Net_Point_Value
100	'Schritt'	iStep
	'Bereit'	boReady
	'Dosierbetr. ein/aus'	boProp
	'DosierCMD'	boPropCmd
	'Servicebetr. ein/aus'	boAdj
	'FB-Fehlerr.'	boSIWA_FTA_Err
	'Allg. Fehler'	boSIWA_FTA_Err
	'D/B-Fehlerr.'	boERR_MSG_CODE
	'Daten/Bedienfehler'	bo_ERR_MSG
	'Fehler quittieren'	bo_ERR_MSG_QUIT
	'Nullstellen'	boTF_Zero
	'Tarieren'	boTF_Balance
	'Dos. Abbruch'	boTF_Abort
	'Dos. Aufw. mit Tar.'	boTF_SL_Dose_Up
	'Dos. Stop'	boTF_Stop
	'Quitt. Sammelstoer.'	boTF_Ack_Corn_Err
	'Dos. laeuft'	boTF_Lose
	'Sammelstoer.'	boTF_Common_Err
	'Dos. Bereit'	boTF_Ready
	'Justiermode ein/aus'	boAdjMode2Dose
	'Justiergew.1 guelt.'	boAdjWeight1
	'Justiergew.2 guelt.'	boAdjWeight2
	'Schr. Justierpara.DS3'	boTxAdjData
	'Schr. Basispara.DS4'	boTxWPParams
	'Schr. Waagepara.DS23b'	boTxWDoseParams
	'Schr. Waagepara.DS23b'	boTxWDoseData
	'Schr. alle DSen'	boTxDataVP
	'Lese alle DSen'	boRdDataVP
	'Werkseinstellung'	boDeWPParams
	'Nullpunkt gueltig'	boSetCont2Zero
	'Fehler quitt.'	boAckAllErrors

1:Hi 2: 3: 4: 5: 6: 7: 8: 9: 10:N

Dosage is running; Faceplate in the Process-image by the picture SIWA\_F1.bik; May be needs to be adapted!

### Process status 1 (DR30)

Info	Status	Process values
NAWI-Status		
<input checked="" type="checkbox"/> Range 1	<input type="checkbox"/> Printing the log	<input type="checkbox"/> Weighing step 0
<input type="checkbox"/> Range 2	<input checked="" type="checkbox"/> Printing not possible	<input type="checkbox"/> Weighing step 1
<input type="checkbox"/> Range 3	<input type="checkbox"/> MMC inserted	<input checked="" type="checkbox"/> Weighing step 2
<input type="checkbox"/> Limit 1	<input type="checkbox"/> MMC ready	<input type="checkbox"/> Weighing step 3
<input type="checkbox"/> Limit 2	<input type="checkbox"/> MMC ready (trace)	<input type="checkbox"/> Weighing step 4
<input type="checkbox"/> Limit 3	<input type="checkbox"/> MMC ready (log)	<input type="checkbox"/> Weighing step 5
<input checked="" type="checkbox"/> Tared	<input type="checkbox"/> Trace active	<input type="checkbox"/> Weighing step 6
<input type="checkbox"/> Preset Tare	<input type="checkbox"/> Through-put 1	<input type="checkbox"/> Weighing step 7
<input type="checkbox"/> Max. +9e	<input type="checkbox"/> Through-put 2	<input type="checkbox"/> Post dos. Active
<input checked="" type="checkbox"/> ¼ d Null	<input type="checkbox"/> Empty range	<input checked="" type="checkbox"/> Coarse signal
<input type="checkbox"/> Waiting f. standstill	<input type="checkbox"/> Calibr. switch on	<input checked="" type="checkbox"/> Fine signal
<input checked="" type="checkbox"/> Standstill 1	<input type="checkbox"/> -	<input type="checkbox"/> Timer pre-dosing
<input checked="" type="checkbox"/> Scale adjusted	<input type="checkbox"/> prot. for S7	<input type="checkbox"/> Empty signal on
<input type="checkbox"/> Command err. (D1)	<input type="checkbox"/> Digit.LC ready	<input type="checkbox"/> Stopped
<input type="checkbox"/> Simulation active	<input type="checkbox"/> Stand-Alone	<input type="checkbox"/> Check stop
<input type="checkbox"/> Service operation	<input type="checkbox"/> Operating error	<input type="checkbox"/> Check stop waiting
AWI status		
		<input type="checkbox"/> Aborted
		<input type="checkbox"/> Step blocked
		<input type="checkbox"/> Over tol. T02
		<input type="checkbox"/> Over tol. T01
		<input type="checkbox"/> Good (TU1 to T01)
		<input type="checkbox"/> Under tol. TU1
		<input type="checkbox"/> Under tol. TU2
		<input type="checkbox"/> Tolerance bad
		<input checked="" type="checkbox"/> Standstill 2
		<input checked="" type="checkbox"/> Standstill 3
		<input checked="" type="checkbox"/> Check follows
		<input type="checkbox"/> disable weight
		<input type="checkbox"/> Conti. mode active
		<input type="checkbox"/> -
		<input type="checkbox"/> Weighing cycle ended.
		<input type="checkbox"/> Load operation ended.

- ☒ Interface parameter (UK7)
- ☒ Date & Time (DR8)
- ☒ Application ID (DR9)
- Test preparation
- Monitor
  - ☒ **Process status 1 (DR30)**
  - ☒ Process status 2 (DR31)
  - ☒ Statistics (DR32)
  - ☒ Process status int. 1 (DR26)
  - ☒ Process status int. 2 (DR27)
- .logging
- .logging MMC
- Firmware download

Info	Status	Process values
NAWI-Status		
<input checked="" type="checkbox"/> Range 1	<input type="checkbox"/> Printing the log	<input checked="" type="checkbox"/> Weighing step 0
<input type="checkbox"/> Range 2	<input checked="" type="checkbox"/> Printing not possible	<input type="checkbox"/> Weighing step 1
<input type="checkbox"/> Range 3	<input type="checkbox"/> MMC inserted	<input type="checkbox"/> Weighing step 2
<input type="checkbox"/> Limit 1	<input type="checkbox"/> MMC ready	<input type="checkbox"/> Weighing step 3
<input type="checkbox"/> Limit 2	<input type="checkbox"/> MMC ready (trace)	<input type="checkbox"/> Weighing step 4
<input type="checkbox"/> Limit 3	<input type="checkbox"/> MMC ready (log)	<input type="checkbox"/> Weighing step 5
<input checked="" type="checkbox"/> Tared	<input type="checkbox"/> Trace active	<input type="checkbox"/> Weighing step 6
<input type="checkbox"/> Preset Tare	<input type="checkbox"/> Through-put 1	<input type="checkbox"/> Weighing step 7
<input type="checkbox"/> Max. +9e	<input type="checkbox"/> Through-put 2	<input type="checkbox"/> Post dos. Active
<input type="checkbox"/> ¼ d Null	<input type="checkbox"/> Empty range	<input checked="" type="checkbox"/> Coarse signal
<input type="checkbox"/> Waiting f. standstill	<input type="checkbox"/> Calibr. switch on	<input type="checkbox"/> Fine signal
<input checked="" type="checkbox"/> Standstill 1	<input type="checkbox"/> -	<input type="checkbox"/> Timer pre-dosing
<input checked="" type="checkbox"/> Scale adjusted	<input type="checkbox"/> prot. for S7	<input type="checkbox"/> Empty signal on
<input type="checkbox"/> Command err. (D1)	<input type="checkbox"/> Digit.LC ready	<input type="checkbox"/> Stopped
<input type="checkbox"/> Simulation active	<input type="checkbox"/> Stand-Alone	<input type="checkbox"/> Check stop
<input type="checkbox"/> Service operation	<input type="checkbox"/> Operating error	<input type="checkbox"/> Check stop waiting
AWI status		
		<input type="checkbox"/> Aborted
		<input type="checkbox"/> Step blocked
		<input type="checkbox"/> Over tol. T02
		<input type="checkbox"/> Over tol. T01
		<input checked="" type="checkbox"/> Good (TU1 to T01)
		<input type="checkbox"/> Under tol. TU1
		<input type="checkbox"/> Under tol. TU2
		<input type="checkbox"/> Tolerance bad
		<input checked="" type="checkbox"/> Standstill 2
		<input checked="" type="checkbox"/> Standstill 3
		<input checked="" type="checkbox"/> Check follows
		<input type="checkbox"/> disable weight
		<input type="checkbox"/> Conti. mode active
		<input type="checkbox"/> -
		<input type="checkbox"/> Weighing cycle ended.
		<input type="checkbox"/> Load operation ended.

Abb: Dosing is ready and ok!

## Scaling with Tolerance – Error

- The control recipe with corresponding dosing and emptying GOPs is loaded to the PLC and the unit is started.
- After the Setpoint is reached, the weighing stops. The tolerance test decides about a subsequent processing.
- The unit goes into Hold (A-). The processing steps are paused.
- Acknowledgment of the problem (switch back to A +) continues processing.

BRAUMAT V5.30(V5312_01010050) {Area1} - Anlagenübersicht - End												
Programm Anlage Funktionen Optionen Quittung Hilfe												
Nr	Sequenz	Seq.Status	Anzeige	Schritt	TOP	TOP...	TOP...	Zeit	Rezept	Charge	Auftragsnr.	
11	Waage_FM350-1	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0	
12	W_SIWA_M1	Running	A+ 0	3	211	Dos...	Runn...	02:14:14	SIWAREX M 1	1	196	
13	W_SIWA_M2	Idle	A+ 0	0	0	---	Idle	03:41:33	SIWAREX M 2	1	127	
21	Waage_FM350-2 8	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0	
22	Waage_FM350-1 2	Idle	A+ 0	0	0	---	Idle	00:00:00	---	0	0	
23	W_SIWA_FTA1	Held	A- 0	3	331	Dos...	Holding	00:05:56	SIWAREX FTA 1	18	12	

Sequenzbezogene Sollwerte W_SIWA_FTA1 [PCU14.23]					Schrittbezogene Sollwerte				
Name	Dim.	SW	IW		Name	Dim.	SW	IW	Delta
Zeit	Std:Min:Sec	00:01:00	00:05:56		SIWA FTA 1 Mat	-	Mat. SIWA FTA 1/1	Mat. SIWA FTA 1/1	---
					SIWA FTA 1 Menge	kg	3.500	3.640	-0.140
					SIWA FTA 1 Tol	kg	0.123	0.140	-0.017

*Uhr...	Art	Rezepttyp	Auftrnr	Charge	Ta...	TA	TaName	PCU	Baus...	Nr	Name	
11:23:14	W	TEST_004_SIWAFTA	000012	000018	014	023	W_SIWA_FTA1	014	Teilant	0023	W_SIWA_FTA1	Überwachungszeit
11:27:55	S	TEST_004_SIWAFTA	000012	000018	014	023	W_SIWA_FTA1	014	Waage	0013	Siwarex	Toleranz + überschritt
11:27:56	B	TEST_004_SIWAFTA	000012	000018	014	023	W_SIWA_FTA1	014	Teilant	0023	W_SIWA_FTA1	Teilanlagenmeldung:

Online												
1:Hilfe	2:Bild	3:Sollwert	4:Status	5:Start	6:Schritt	7:Freigabe	8:B-Quit	9:akt.Rezept	10:Notiz			

Abb: Sequence - Overview

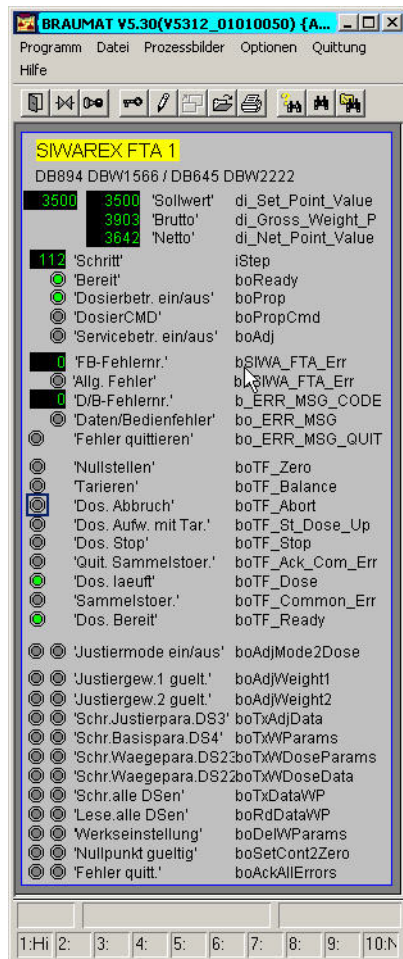


Fig: Process diagram for SIWAREX FTA Weigher -> Unit on hold

Grundrezept

Nr.

Name

1

SIWAREX\_FTA 1

Langname

SIWAREX\_FTA 1

Status

Freigabe Test

Rezeptkategorie

TEST\_004\_SIWAFTA

Produkt

Nominale Chargengröße

Einsatzstoffliste

10

Prozessparameter

10

Parameter	Wert	Skal.	Dimension	Minimum	Maximum	Kommentar			

Feature: Dosing and weighing with dynamic adjustment of the control recipe

Basic recipes (varieties) with corresponding component lists are created.



The component quantities are relative to the "nominal batch size".

**Waage\_SIWA\_FTA 1**  
[R] TEILANL 23  
W\_SIWA\_FTA1 [14.23]

**Rezeptprozedurkopf**

Rezeptprozedur Name: SIWA\_FTA\_1  
Nr: 61  
Rezeptkategoriezuordnung: TEST\_004\_SIWA\_FTA  
Ändern

Chargengröße: Minimum 2, Maximum 50, Nominal 10  
Startsequenz: PCU14, W\_SIWA\_FTA1  
Rhythmus: Zeit 01:00:00  
Status: zum Test freigegeben  
Erstellung: Name h, Datum 31.01.11, Zeit 16:34:51  
Letzte Änderung: Name h, Datum 11.04.16, Zeit 08:20:46  
OK Abbrechen

Sch.	EOP Nr.	Name/ROP-ID	Zeit	Sollw. 1	Sollw. 2	Sollw. 3	Sollw. 4
1		Start					
2	330	Pruef SIWA FTA 1	Zeit				
3	331	Dos. SIWA FTA 1	00:00:20	SIWA FTA 1 Mat [-]	SIWA FTA 1 Meng...	SIWA FTA 1 Tol [...]	SIWA FTA 1 Dos...
4	332	Entl. SIWA FTA 1	00:01:00	#	#	0.000	0
5		Ende	00:00:30				

Feature : Dosing and weighing with dynamic adjustment of the control recipe

Simple recipe procedures for the actual weighing/dosing are assigned to them.

The recipe procedures have special attributes regarding the absolute quantities.

**BALIEDIT - Neuer Auftrag**

Auftrag: Auftragstyp: SIWA FTA PCU 14  
Rezept: SIWA\_FTA\_1, SIWA\_FTA\_2  
Linie: RefLin\_Testpro\_1  
Produkt: <0>

Nummern: Auftragsnummer: 00015, Erste Chargennummer: 00008  
Start: Modus: sobald als möglich, Datum: 12.04.16  
Zyklus: 01:00:00, Zeit: 14:57:39  
Chargenbildung: Jahr: 11, ☒ Chargenanzahl, ☒ Auftragsgröße  
1, 5000 kg  
a 10.00 kg  
Parameter weiterer Auftrag OK Abbrechen

**PCU14 / 23 W\_SIWA\_FTA1**

Start  
FC1330(330) Pruef SIWA FT...  
FC1331(331) Dos. SIWA FTA 1  
FC1332(332) Entl. SIWA FTA 1  
FC1331(331) Dos. SIWA FTA 1  
FC1331(331) Dos. SIWA FTA 1  
FC1332(332) Entl. SIWA FTA 1  
FC1331(331) Dos. SIWA FTA 1  
FC1332(332) Entl. SIWA FTA 1  
FC1331(331) Dos. SIWA FTA 1  
FC1332(332) Entl. SIWA FTA 1  
FC1331(331) Dos. SIWA FTA 1  
FC1332(332) Entl. SIWA FTA 1  
Ende

Sequenznr	Schrittbezogene Sollwerte	Schritt: 5 'Dos. SIWA FTA 1' [Rezept - Offline]
Name	Name	Einheit
Zeit	SIWA FTA 1 Mat	-
	SIWA FTA 1 Menge	kg
	SIWA FTA 1 Tol	kg
	Mat. 1/1 Zucker	
	6.000	
	0.000	

Feature: Dosing and weighing with dynamic adjustment of the control recipe

Creation of a batch for desired, absolute quantity

Control recipe with multiplication of EOPs and scaling of quantities

## **1.6 More Information**