SIEMENS

SIWAREX® FTA
Project planning in SIMATIC PCS7

User manual

Status 08/2012

Safety

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING
indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

NOTICE
indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notes in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

Prescribed Usage

Note the following:

⚠ WARNING
This device may only be used for the applications described in the catalog or the technical description and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens. Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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SIWAREX FTA

Project planning in SIMATIC PCS7

Revision 08/2012

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Bilder

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1 Preface

1.1 Purpose of the Information

This manual contains all the information required to configure a plant using SIWAREX FTA in PCS7.

1.2 Required Basic Knowledge

In order to understand the manual, certain knowledge concerning the SIMATIC automation technology especially PCS7 is required. Weighing technology knowledge is also an asset.

1.3 Scope of this Manual

This manual refers to the SIWAREX FTA module:

Type	Name	Order number	from product status (Version)	
SIWAREX FTA	SIWAREX Flexible Technology Automatic Weighing Instrument*	7MH4900-2AA01	HW E-Rev. 1	FW V.4.2.0

Table 1-1 Validity of this manual

*The name corresponds with the naming conventions of the OIML - Organisation Internationale de Metrologie Legale and means „Automatic Weighing Instrument“.

Depending on the installed PCS7 version either the PCS7 blocks of configuration package 7MH4900-2AK61 (PCS7 V6.x), 7MH4900-2AK62 (PCS7 V7.0 from SP1 on) or 7MH4900-2AK63 (PCS7 V8.0) is required.

1.4 Further Support

Do you have more questions concerning the use of SIWAREX FTA? Then please contact your Siemens representative in the office or business location that is responsible for your area or technical support for SIWAREX Tel.: +49 (0)721 595 2811 or open a Support Request www.siemens.com/automation/support-request

Updated information on SIWAREX Weighing Technology as well as the newest versions of the SIWAREX user manuals can be found on the respective Internet Site.

http://www.siemens.com/weighing-technology

2 Scope of Delivery

The block is used to connect the SIWAREX FTA to the PCS7. The integration of SIWAREX FTA is possible as of PCS 7 V7 and PCS7 V8 respectively.

In the first step, SIWAREX FTA must be added to the hardware catalogue by running the HSP. The installtion procedure you find in the Readme file.

While planning the hardware configuration in the SIMATIC Manager, the basic features of the module are defined:

- The peripheral address of the module
- Enabling the diagnostic alarms
- Enabling the process alarms
- Behaviour in the case of a CPU-Stop

Note: The diagnose alarms have to be activated to ensure the correct function of the CFC block.

SIWAREX FTA takes up 16 bytes in the input and output area.

Other scale specific parameters that are also changed while the control program is running can be defined in three different ways.

- Using the SIWATOOL FTA parameter definition tool
- Internally by making the definition in FB641 and then transferring to SIWAREX FTA
- In the OS using the Faceplate.

PCS7 blocks include the following components:

- CFC blocks for scale functionality (SFT_AWI), command controlling (CMD_AWI) and maintenance (MOD_SIWA)
- Text libraries for use with message texts
- Example – faceplate: can be extended or modified using the Faceplate Designer.
- Example program

3 Overview

3.1 General

SIWAREX FTA (**F**lexible **T**echnology, **A**utomatic Weighing Instrument) is a versatile and flexible weighing module which can be utilized wherever a scale should fulfil its tasks automatically. Automatic scale operation is characterized by a weighing procedure performed automatically according to a defined plan.

PCS7 blocks enable SIWAREX FTA to be integrated into PCS7. The faceplates provided enable operation and monitoring of the scales and can be customized to the client.

3.2 Benefits

SIWAREX Getting Started has many advantages::

- Easy integration of scales in PCS7
- Straightforward transmission of commands in automatic mode
- Integration with PCS7 Maintenance Station
- Completed faceplates available for project-specific enhancements

3.3 Application Range

SIWAREX FTA Getting Started is the optimal solution anywhere that direct weighing technology integration in the automation system is advantageous. Weighing is then a component of complex processes which are controlled by the automation system. Using the SIWAREX FTA software, calibratable weighing systems can be inexpensively constructed, whether they are filling systems, unloading stations, bagging operations or rotopackers.

Typical application ranges:

- Liquid Filling
- Bagging in a packaging plant
- Material unloading at an unloading point

3.4 Structure

The project is made up of two parts:

- SIWAREX FTA PCS7 AS blocks
- SIWAREX FTA PCS7 OS blocks

The ALARM_8P messaging system is also used. In this way, the messages from SIWAREX FTA are displayed to the operator. The message texts are stored in the text library provided.

3.5 Function

The control of the weighing procedure is completely run from the weighing module as if in separately constructed weighing electronics. The integration in SIMATIC enables the progress of the weighing procedure to be influenced directly from the PLC program however. This way, there is sensible task distribution: the extremely fast weighing functions are handled in SIWAREX-FTA, the latching and signal linking is done in the PLC.

SIWAREX-specific CFCs are available for configuration purposes. These are used to transfer commands and setting values to the scales. The scales can be operated, and the scale data displayed using the faceplates.

3.6 Commissioning and Service with SIWATOOL FTA

In principle, complete commissioning is possible via the CFC block.

Adjustment parameters (data record 3) and basis data (data record 4) can be modified retrospectively and scales readjusted via the faceplates.

In dosing mode, the setpoint (data record 20) and the scale parameters (DS22 and DS23) can be set via the faceplate.

It is also possible to quickly and easily commission the module using the SIWATOOL PC program.

SIWATOOL FTA is included in the scope of delivery of the SIWAREX FTA configuration package for PCS7 (order number 7MH4900-2AK61, 7MH4900-2AK62 or 7MH4900-2AK63). The program must be installed on a PC before commissioning can be performed. The PC is connected to the SIWAREX FTA using the cable available as an accessory.

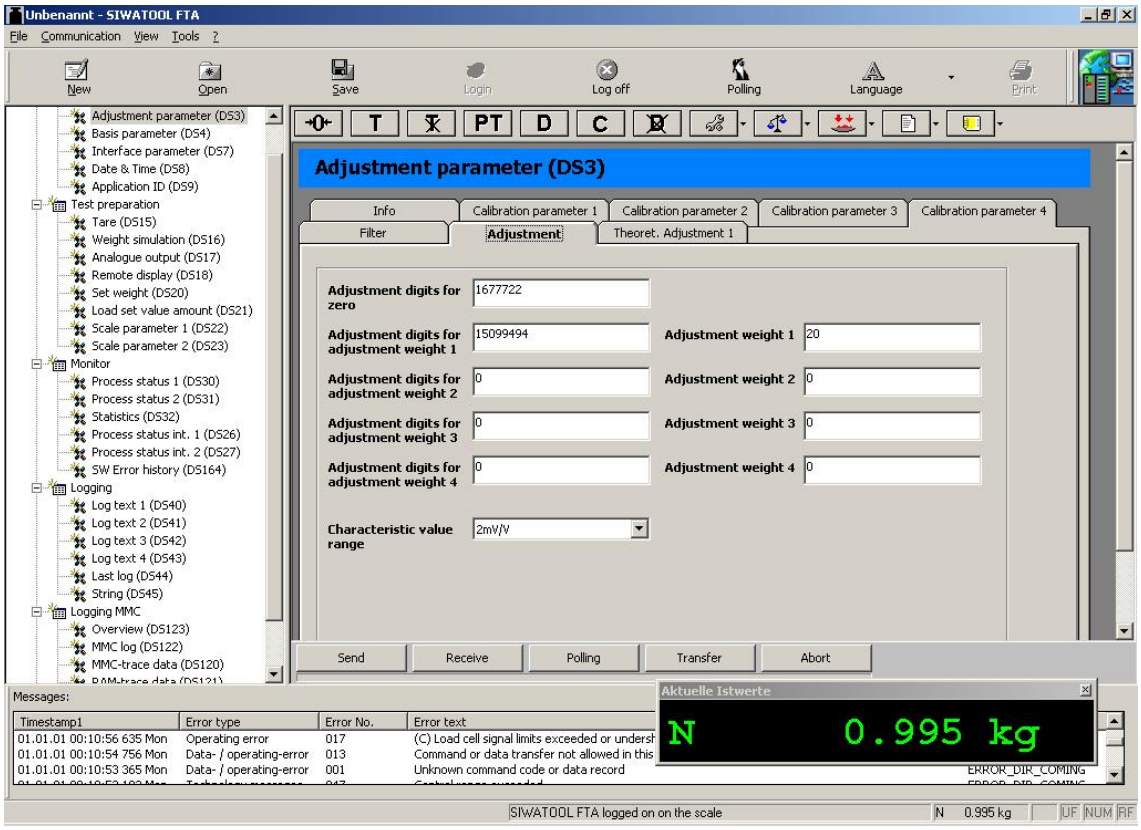

Fig. 3-1 Initial commissioning with SIWATOOL FTA

Note:

All data should be read by PCS7 after the parameters for SIWAREX FTA have been defined using SIWATOOL. Data in SIWAREX FTA will then be synchronized with data in the PCS7 project.

4 Description of the CFCs

4.1 CFC SFT_AWI (FB461)

4.1.1 Calling OBs

The block SFT_AWI must be installed in the run sequence of following OBs(automatically in CFC):

OB82	Diagnostic alarm
OB100	Restart (warm start)

4.1.2 Startup characteristics

Following initialization, the module ID of the attached module is read out to identify a parameter error. The messages remain blocked for the number of cycles configured at the RUNUPCYC input.

4.1.3 Function

The block is used to control a Siwarex FT module (AWI). Data is transmitted cyclically via the peripheral interface and the various data records are read from the module and/or transferred to the module acyclically. The module message queue is continually read out and corresponding WinCC messages are issued.

Note:

To safeguard the functionality of the faceplate, the values for PROCESS_VALUE_1 and PROZESS_VALUE_2 must be assigned in the S7 interface definition in DR7 as follows:

PROCESS_VALUE_1 = 2 (net weight)

PROZESS_VALUE_2 = 30 (scale status AWI)

4.1.4 User Text Library

Various messages in WinCC include an error text from user text libraries in addition to the error number. The user text libraries must be copied from the SFT_AWI block library to the respective project by the user. To do this, open the SFT_AWI library in Simatic Manager, select the "Text Libraries" folder and copy this into your project. If a folder for user text libraries already exists in your project, please copy

the SFT_AWI_DAT_OP, SFT_AWI_OP_MSG and SFT_AWI_TECH user text libraries into this folder.

4.1.5 Addressing Driver wizzard

The EA addresses for the Siwarex FT module must be entirely within the CPU process map. The LADDR input is interconnected with the base address of the Siwarex FT module: Select input -> right mouse button -> Interconnection to Address... -> input from e.g. EW512. The PCS7 driver wizard then automatically installs all required driver blocks. The MODF, PERAF, RACKF and ODIAG block inputs are interconnected by the driver wizard; the SUBN1_ID, SUBN2_ID, RACK_NO, SLOT_NO, BASADR and DADDR inputs are configured according to the data from HW config. When the block for PCS7 V7 or V8 is used, also the input EN_CO and an output ENCO are interconnected and the output CO_NO is configured.

4.1.6 Manual/automatik

Switching between the two modes of operation is carried out either through OS operation via AUT_ON_OP (LIOP_SEL = 0) or via the interconnection of the AUT_L (LIOP_SEL = 1) input. The appropriate permissions AUTOP_EN and MANOP_EN are required if the OS system route is taken. The operating mode selected is displayed on the QMAN_AUT output (1: automatic, 0: manual).

Manual Mode: Commands are transmitted from the operator to the block via the MAN_CMD input. Every command code modification on this input is identified as a new command. Manual inputs (ending "_M") act as the source for data records transmitted to the module.

Automatic mode: The block obtains its commands, with positive edge, at the AUTCMDEN input, from the AUT_CMD connectable input. Automatic inputs (ending "_A"), if available, act as the source for data records transmitted to the module; if unavailable, manual inputs fulfil this role (ending "_M").

Instead of the error code and a positive edge, automatic commands can also be triggered with the help of a connection block (see chapter 4.2) by adjusting a bit.

If no automatic command is being processed, but a command is nevertheless present at the MAN_CMD manual input, then this is executed, but always with the manual inputs (ending "_M") as the source for data records written to the module.

If neither a manual nor an automatic command is executed, then the background command specified at the BACK_CMD input is executed cyclically.

A command chain (e.g. read all data records) is interrupted by a new error code, but only ever after the individual command currently being processed has been executed.

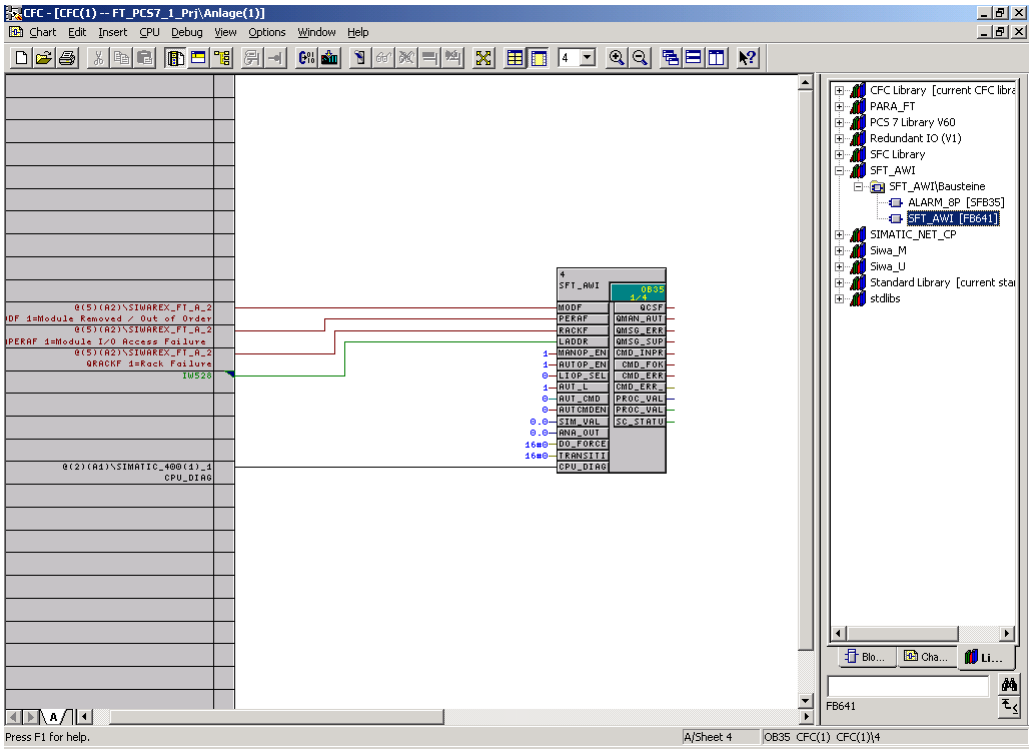

Fig. 4-1 Block SFT_AWI in CFC

4.1.7 Data records

All data records that the S7 controller can access are available as individual parameters for the function block. Parameters for the data records that can be read take the ending "_O" for Output. Parameters of the data records that can be written end in "_M" for Manual and are transferred to WinCC for visualization.

There are also interconnectable automatic inputs (ending "_A") for data records 15, 18 and 20 to 22; in automatic mode, these replace manual inputs as the source for writing data records. If automatic inputs do not exist for a data record, then manual input values are transmitted to the module when in automatic mode. If applicable, manual inputs can also be connected in the AS program; however, they will no longer be operable in WinCC.

Values from SIWAREX are assumed for parameters ending "_M" and "_O" when data records from SIWAREX are read, in both automatic and manual modes. Parameters ending "_A" remain unchanged.

Depending on the operating mode, parameters ending "_A" or "_M" act as the source when data records are written to SIWAREX. Manual input values are transmitted to the module when a data record is written via the manual input in automatic mode.

4.1.8 Commands

Block command inputs in automatic mode are processed with the following priorities:

1. Automatic command (AUT_CMD, AUTCMDEN), automatic operating mode required
2. Manual command (MAN_CMD)
3. Command from adding a faceplate view (FP_CMD)
4. Background command (BACK_CMD)

If a new view is added in the faceplate, then the data records are read out whose values are presented here. The command code required for this is written to the FP_CMD parameter and copied to the MAN_CMD input (manual command) via the block and is thus executed as a manual command, assuming no other command is present here.

Possible commands are detailed in chapter 6.2, command list, of the device manual.

4.1.9 Module error messages

Error message memory on the Siwarex FT module is continually read out by the block. If a message has been read, the ERR_MSG output is set to "TRUE" for one cycle. Outputs ERR_MSG_TYPE and ERR_MSG_C contain the error type and error code of the corresponding message.

ERR_MSG_TYPE	Meaning
16#01	Operating message (fault)
16#02	Technical error
16#04	Data or operating error

Table 4-1 CFC – Message types

The meaning of each error number code is detailed in the device manual.

WinCC issues messages, according to the error type, with text, technical errors, data/operating errors, internal and/or external errors with the error code as a guidance value. These messages always have incoming/outgoing status. The error code of the last error message to be read out is always shown. The most important operating error messages are reported individually.

4.1.10 Message text and message class assigned to the block parameters

Message-block ALARM_8P	Message-No.	Block parameter	Default message text	Message-class
EV_ID1	1	QPARF	Configuration error	S
	2	CSF/QCSF	Control System fault	S
	3	ERR_MSG/ ERR_MSG_TYPE/ ERR_MSG_C	Data/Operation error @9%d@: @9Y%t#SFT_AWI_DAT_OP@	S
	4	ERR_MSG/ ERR_MSG_TYPE/ ERR_MSG_C	Technology error @10%d@: @10Y%t#SFT_AWI_TECH@	S
	5	QINT_03, 06..16	Internal Error coming @8%d@: @8Y%t#SFT_AWI_OP_MSG@ 1)	S
	6	QINT_03, 06..16	Internal Error going @8%d@: @8Y%t#SFT_AWI_OP_MSG@ 1)	S
	7	QEXT_23..32	External Error coming @8%d@: @8Y%t#SFT_AWI_OP_MSG@ 2)	S
	8	QEXT_23..32	External Error going @8%d@: @8Y%t#SFT_AWI_OP_MSG@ 2)	S
EV_ID2	1	QE_RDWR	RAM Error read/write check	S
	2	QE_WDOG	Watchdog error	S
	3	QE_PALM	Process alarm lost	S
	4	QE_PARA	Parameter error (loss of data)	S
	5	QE_ADC	ADC error	S
	6	QE_MCC	MCC error	S
	7	QE_COMM	Com. fault S7/serial	S
	8	---	---	---

1) Operating errors with numbers 3 and 6 to 16
2) Operating errors with numbers 23 to 32

Table 4-2 CFC – Message texts of SFTA

4.1.11 Assignment of associated values to the block parameters of MOD_SIWA

Message-block ALARM_8P	Message-no.	Block parameter
EV_ID1	1	BA_NA
	2	STEP_NO
	3	BA_ID
	4	RAC_DIAG.SUBN1_ID
	5	RAC_DIAG.SUBN2_ID

Message-block ALARM_8P	Message-no.	Block parameter
	6	RAC_DIAG.RACK_NO
	7	RAC_DIAG.SLOT_ID
	8	sy_Nr_Betriebfehler (internal variable for operating error, ERR_MSG_TYPE = 16#01)
	9	sy_Nr_DatenBedienfehler (internal variable for data or operating error, ERR_MSG_TYPE = 16#04)
	10	sy_Nr_Technologiefehler) (interne variable for technical error, ERR_MSG_TYPE = 16#02)

Table 4-3 CFC – Associated values of SFTA

4.1.12 Connections of SFT_AWI (without data records)

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MODF	1 = Module removed / defective (connected by the driver wizard)	BOOL	FALSE	I	
PERAF	1= I/O access error (connected by the driver wizard)	BOOL	FALSE	I	
RACKF	1=Rack / station error (connected by the driver wizard)	BOOL	FALSE	I	
SUBN1_ID	ID of the primary DP master system (configured by the driver wizard)	BYTE	16#FF	I	
SUBN2_ID	ID of the redundant DP master system (configured by the driver wizard)	BYTE	16#FF	I	
RACK_NO	Rack number (configured by the driver wizard)	BYTE	0	I	
SLOT_NO	Slot number (configured by the driver wizard)	BYTE	0	I	
BASADR	Base address of Siwarex-FT module (configured by the driver wizard)	INT	0	I	
DADDR	Diagnostic address of Siwarex-FT module (configured by the driver wizard)	INT	0	I	
LADDR	Logical address of the Siwarex-FT module This input must be interconnected to the base address: Right mouse button -> Interconnection to Address... -> e.g. IW128	WORD	0	I	
MANOP_EN	Enable: 1=Operator may input MANUAL	BOOL	FALSE	I	
AUTOP_EN	Enable: 1=Operator may input AUTO	BOOL	FALSE	I	
LIOP_SEL	Select: 1=Linking, 0=Operator active	BOOL	FALSE	I	
AUT_L	Linkable Input for MANUAL/AUTO mode	BOOL	FALSE	I	
MSG_LOCK	Message Lock	BOOL	FALSE	I	+
SUPP_DATA	1= Suppress data and command error	BOOL	FALSE	I	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
	messages				
SUPP_TECH	1= Suppress technology error messages	BOOL	FALSE	I	
SUPP_OP	1= Suppress operating messages	BOOL	FALSE	I	
SAMPLE_T	Sample Time [s]	REAL	0.1	I	
RUNUPCYC	Lag: Number of Run Up Cycles	INT	10	I	
EV_ID1	Message ID	DWORD	0	I	
EV_ID2	Message ID	DWORD	0	I	
BA_EN	Batch Enable	BOOL	FALSE	I	+
OCCUPIED	Occupied by Batch	BOOL	FALSE	I	+
BA_ID	Batch ID	DWORD	0	I	+
BA_NA	Batch Name	STRING[32]		I	+
STEP_NO	Batch Step Number	DWORD	0	I	+
BACK_CMD	Background Command	INT	0	I	+
AUT_CMD	Auto Command	INT	0	I	
AUTCMDEN	1= Execute command in Automatic Mode	BOOL	FALSE	I	
SIM_VAL	Simulation for weigh value	REAL	0.0	I	
ANA_OUT	Value for analog output	REAL	0.0	I	
DO_FORCE	Force digital output for service	BYTE	16#00	I	
TRANSITION	Transition for automatic weighing step	BYTE	16#00	I	
OCX_WR1	For OCX write data 1	WORD	16#00	I	
OCX_WR2	For OCX write data 2	WORD	16#00	I	
SIG1_6	free Message EV_ID1/Message 6	BOOL	FALSE	I	
SIG1_7	free Message EV_ID1/Message 7	BOOL	FALSE	I	
SIG1_8	free Message EV_ID1/Message 8	BOOL	FALSE	I	
CO_NO*	Coordination number for reading data records	INT	0	I	CO_NO*
AUX2PR08	Auxiliary Value 8/ EV_ID2	ANY		IO	
AUX2PR09	Auxiliary Value 9/ EV_ID2	ANY		IO	
AUX2PR10	Auxiliary Value 10/ EV_ID2	ANY		IO	
AUT_ON_OP	Operator Input Mode 1=AUTO, 0=MANUAL	BOOL	FALSE	IO	+
MAN_CMD	Manual Command	INT	0	IO	+
FP_CMD	Faceplate Command	INT	0	IO	+
CPY_M_A	1= Copy manual values to automatic inputs	BOOL	FALSE	IO	+
EN_CO*	Current coordination number	STRUCT		IO	
QCSF	1=Control System Fault	BOOL	FALSE	O	+
QPARF	1=Parameterization failure	BOOL	FALSE	O	
QMODF	1=Module failure	BOOL	FALSE	O	
QPERAF	1=Periphery access failure	BOOL	FALSE	O	
QRACKF	1=Rack failure	BOOL	FALSE	O	
ODIAG	Diagnostic Info	DWORD	0	O	
SFB_ERR_C	Error code of last SFB call	WORD	0	O	
L_DR_NO	Last transferred Data Record	INT	0	O	
L_CMD	Last transferred Command	INT	0	O	
QMAN_AUT	1=AUTO, 0=MANUAL Mode	BOOL	FALSE	O	+
QMANOP	1=Operator enabled for MANUAL	BOOL	FALSE	O	+
QAUTOP	1=Operator enabled for AUTO	BOOL	FALSE	O	+
QCMDOP	1=Operator may start a command	BOOL	FALSE	O	+
M_CMD_EN	Enable: 1=Operator may input new MAN_CMD	BOOL	FALSE	O	+
QMSG_ERR	1=Message Error	BOOL	FALSE	O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
QMSG_SUP	1=Message Suppression Active	BOOL	FALSE	O	+
QMSGERR1	1=Message ERROR	BOOL	FALSE	O	
QMSGERR2	1=Message ERROR	BOOL	FALSE	O	
MSG_STAT1	Message: STATUS Output 1	WORD	0	O	
MSG_ACK1	Message: ACK_STATE Output 1	WORD	0	O	
MSG_STAT2	Message: STATUS Output 2	WORD	0	O	
MSG_ACK2	Message: ACK_STATE Output 2	WORD	0	O	
CMD_INPR	Automatic command in progress	BOOL	FALSE	O	
CMD_FOK	Automatic command finished ok	BOOL	FALSE	O	
CMD_ERR	Error by automatic command execution	BOOL	FALSE	O	
CMD_ERR_C	Error code for automatic command execution	BYTE	16#00	O	
MCMD_INPR	Manual command in progress	BOOL	FALSE	O	
MCMD_FOK	Manual command finished ok	BOOL	FALSE	O	
MCMD_ERR	Error by manual command execution	BOOL	FALSE	O	
MCMD_ERR_C	Error code for manual command execution	BYTE	16#00	O	
BACK_INPR	Background command in progress	BOOL	FALSE	O	
BACK_FOK	Background command finished ok	BOOL	FALSE	O	
BACK_ERR	Error by background command execution	BOOL	FALSE	O	
BACK_ERR_C	Error code for background command execution	BYTE	0	O	
REF_COUNT	Refresh counter	BYTE	16#00	O	
PROC_VAL1	Process value 1	REAL	0.0	O	+
PROC_VAL2	Process value 2	DWORD	16#00	O	+
SC_STATUS	Status of the scale	DWORD	16#00	O	
ERR_MSG	1= New error message available	BOOL	FALSE	O	
ERR_MSG_TYPE	Error message type	BYTE	16#00	O	
ERR_MSG_C	Error message code	BYTE	16#00	O	
FB_ERR	1= Function block error occurred	BOOL	FALSE	O	
FB_ERR_C	Function block error code	BYTE	16#00	O	
START_UP	Start up of Siwarex in progress	BOOL	FALSE	O	
QINT_x x=3 oder 06 <= x <= 16	1=Internal Error x	BOOL	FALSE	O	
QEXT_x 23 <= x <= 32	1=External Error x	BOOL	FALSE	O	
QE_RAM	RAM Error	BOOL	FALSE	O	
QE_WDOG	Watchdog Error	BOOL	FALSE	O	
QE_PALM	Process Alarm lost	BOOL	FALSE	O	
QE_PARA	Parameter Error	BOOL	FALSE	O	
QE_ADC	Analog/Digital Converter Error	BOOL	FALSE	O	
QE_MCC	MCC Error	BOOL	FALSE	O	
QE_COM	Communication Error (S7/seriel)	BOOL	FALSE	O	
ENCO*	Coordination number	BYTE	0	O	

*only for CFC for PCS7 V7/V8

Table 4-4 CFC-connections of SFT_AWI (without data records)

4.1.13 Calibration parameter (data record 3)

Inputs (manual and/or automatic):

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CAL_D0_M	DR03: Calibration digits for 0	DINT	1398101	I	+
CAL_D1_M	DR03: Calibration digits for 1	DINT	15379113	I	+
CAL_D2_M	DR03: Calibration digits for 2	DINT		I	+
CAL_D3_M	DR03: Calibration digits for 3	DINT		I	+
CAL_D4_M	DR03: Calibration digits for 4	DINT		I	+
CAL_W1_M	DR03: Calibration weight for 1	REAL		I	+
CAL_W2_M	DR03: Calibration weight for 2	REAL		I	+
CAL_W3_M	DR03: Calibration weight for 3	REAL		I	+
CAL_W4_M	DR03: Calibration weight for 4	REAL		I	+
SI_RNG_M	DR03: Signal range (1=1mV/v, 2=2mV/V, 4=4mV/V)	BYTE	B#16#2	I	+
F_PARA_M	DR03: Position of the average value filter (Average first=0, low pass=1)	BOOL	B#16#2	I	+
F_TYPS_M	DR03: Signal filter type	BYTE		I	+
F_FRQS_M	DR03: Signal filter low pass frequency	BYTE	B#16#1	I	+
F_DEPTH_M	DR03: Filter depth of average value filter	INT	128	I	+
SC_ID_M	DR03: Scale identity	STRING [10]		I	+
RNG_M	DR03: Amount of weighing ranges	BYTE	B#16#1	I	+
TYPE_RNG_M	DR03: Multi range (0), multi resolution (1)	BOOL	B#16#1	I	+
Z_P_ON_M	DR03: Automatic zero by power on (yes=1, no=0)	BOOL	B#16#1	I	+
Z_P_ON_TARA_M	DR03: Automatic zero by power on and 0<tara>0 (yes=1, no=0)	BOOL	B#16#1	I	+
Z_AUTO_M	DR03: Automatic zeroing (yes=1, no=0)	BOOL	B#16#1	I	+
MIN_WR1_M	DR03: Minimum for weighing range 1	REAL		I	+
MAX_WR1_M	DR03: Maximum for weighing range 1	REAL		I	+
INC_WR1_M	DR03: Digital increment for weighing range 1	REAL		I	+
MIN_WR2_M	DR03: Minimum for weighing range 2	REAL		I	+
MAX_WR2_M	DR03: Maximum for weighing range 2	REAL		I	+
INC_WR2_M	DR03: Digital increment for weighing range 2	REAL		I	+
MIN_WR3_M	DR03: Minimum for weighing range 3	REAL		I	+
MAX_WR3_M	DR03: Maximum for weighing range 3	REAL		I	+
INC_WR3_M	DR03: Digital increment for weighing range 3	REAL		I	+
T_STILL1_M	DR03: Stand still time in ms	TIME	T#1S	I	+
W_STILL1_M	DR03: Stand still weight	REAL		I	+
T_WAIT_STILL1_M	DR03: Min waiting time for stand still	TIME	T#5S	I	+
PON_Z_NEG_M	DR03: Zeroing negative range by power on (% of WR3)	BYTE	B#16#10	I	+
PON_Z_POS_M	DR03: Zeroing positive range by power on % of WR3	BYTE	B#16#10	I	+

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
Z_NEG_V_M	DR03: Zeroing negative range (% of WR3)	BYTE	B#16#1	I	+
Z_POS_V_M	DR03: Zeroing positive range (% of WR3)	BYTE	B#16#3	I	+
TARA_MAX_M	DR03: Tara range (% of WR3)	BYTE		I	+
LOAD_CELL_TYPE_M	DR03: Type of loading cell 0= strain gauge 1= digital	BYTE		I	+
T_OUT_DIGIT_LC_M	DR03: Time out for digital load cell in ms	INT		I	+
LEG_TRADE_M	DR03: OIML or no ----	STRING [4]		I	+
W_UNIT_M	DR03: Unit for weight	STRING [4]		I	+
W_STILL2_M	DR03: Stand still weight 2	REAL		I	+
T_STILL2_M	DR03: Stand still time 2 in ms	TIME	T#1S	I	+
MIN_T_STILL2_M	DR03: Min waiting time for stand still 2	TIME		I	+
W_STILL3_M	DR03: Stand still weight 3	REAL		I	+
T_STILL3_M	DR03: Stand still time 3 in ms	TIME		I	+
MIN_T_STILL3_M	DR03: Min waiting time for stand still 3	TIME		I	+
MIN_V_TOT_M	DR03: Minimum dosing value for totalizing	REAL		I	+
INC_TOT_M	DR03: Digital increment for totalized weight value	REAL		I	+
Res303_M	DR03: Reserve (max. load)	REAL		I	+
Res403_M	DR03: Reserve	BYTE		I	+
Res503_M	DR03: Reserve	BYTE		I	+
Res504_M	DR03: Reserve	BYTE		I	+

Table 4-5 CFC – connections of SFTA – DS3 inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CAL_D0_O	DR03: Calibration digits for 0	DINT	1677722	O	
CAL_D1_O	DR03: Calibration digits for 1	DINT	15099494	O	
CAL_D2_O	DR03: Calibration digits for 2	DINT		O	
CAL_D3_O	DR03: Calibration digits for 3	DINT		O	
CAL_D4_O	DR03: Calibration digits for 4	DINT		O	
CAL_W1_O	DR03: Calibration weight for 1	REAL		O	
CAL_W2_O	DR03: Calibration weight for 2	REAL		O	
CAL_W3_O	DR03: Calibration weight for 3	REAL		O	
CAL_W4_O	DR03: Calibration weight for 4	REAL		O	
SI_RNG_O	DR03: Signal range (1=1mV/v, 2=2mV/V, 4=4mV/V)	BYTE	B#16#2	O	
F_PARA_O	DR03: Position of the average value filter (Average first=0, low pass=1)	BOOL	B#16#2	O	
F_TYPS_O	DR03: Signal filter type	BYTE		O	
F_FRQS_O	DR03: Signal filter low pass frequency	BYTE	B#16#1	O	
F_DEPTH_O	DR03: Filter depth of average value filter	INT	128	O	
SC_ID_O	DR03: Scale identity	STRING		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
		[10]			
RNG_O	DR03: Amount of weighing ranges	BYTE	B#16#1	O	
TYPE_RNG_O	DR03: Multi range (0), multi resolution (1)	BOOL	B#16#1	O	
Z_P_ON_O	DR03: Automatic zero by power on (yes=1, no=0)	BOOL	B#16#1	O	
Z_P_ON_TARA_O	DR03: Automatic zero by power on and 0<tara>0 (yes=1, no=0)	BOOL	B#16#1	O	
Z_AUTO_O	DR03: Automatic zeroing (yes=1, no=0)	BOOL	B#16#1	O	
MIN_WR1_O	DR03: Minimum for weighing range 1	REAL		O	
MAX_WR1_O	DR03: Maximum for weighing range 1	REAL		O	
INC_WR1_O	DR03: Digital increment for weighing range 1	REAL		O	
MIN_WR2_O	DR03: Minimum for weighing range 2	REAL		O	
MAX_WR2_O	DR03: Maximum for weighing range 2	REAL		O	
INC_WR2_O	DR03: Digital increment for weighing range 2	REAL		O	
MIN_WR3_O	DR03: Minimum for weighing range 3	REAL		O	
MAX_WR3_O	DR03: Maximum for weighing range 3	REAL		O	
INC_WR3_O	DR03: Digital increment for weighing range 3	REAL		O	
T_STILL1_O	DR03: Stand still time in ms	TIME	T#1S	O	
W_STILL1_O	DR03: Stand still weight	REAL		O	
T_WAIT_STILL1_O	DR03: Min waiting time for stand still	TIME	T#5S	O	
PON_Z_NEG_O	DR03: Zeroing negative range by power on (% of WR3)	BYTE	B#16#10	O	
PON_Z_POS_O	DR03: Zeroing positive range by power on % of WR3	BYTE	B#16#10	O	
Z_NEG_V_O	DR03: Zeroing negative range (% of WR3)	BYTE	B#16#1	O	
Z_POS_V_O	DR03: Zeroing positive range (% of WR3)	BYTE	B#16#3	O	
TARA_MAX_O	DR03: Tara range (% of WR3)	BYTE		O	
Res103_O	DR03: Reserve	BYTE		O	
Res203_O	DR03: Reserve	INT		O	
LEG_TRADE_O	DR03: OIML or no ----	STRING [4]		O	
W_UNIT_O	DR03: Unit for weight	STRING [4]		O	
W_STILL2_O	DR03: Stand still weight 2	REAL		O	
T_STILL2_O	DR03: Stand still time 2 in ms	TIME	T#1S	O	
MIN_T_STILL2_O	DR03: Min waiting time for stand still 2	TIME		O	
W_STILL3_O	DR03: Stand still weight 3	REAL		O	
T_STILL3_O	DR03: Stand still time 3 in ms	TIME		O	
MIN_T_STILL3_O	DR03: Min waiting time for stand still 3	TIME		O	
MIN_V_TOT_O	DR03: Minimum dosing value for totalizing	REAL		O	
INC_TOT_O	DR03: Digital increment for totalized weight value	REAL		O	
Res303_O	DR03: Reserve (max. load)	REAL		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
Res403_O	DR03: Reserve	BYTE		O	
Res503_O	DR03: Reserve	BYTE		O	

Table 4-6 CFC – connections of SFTA – DS3 outputs

4.1.14 Basis parameter (data record 4)

Inputs (manual and/or automatic):

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SC_TYPE_M04	DR04: Scale type (all types non automatic/automatic)	BYTE		I	+
Res104_M	DR04: Reserve	BYTE		I	+
Res204_M	DR04: Reserve	WORD		I	+
T_OUT_PR_M	DR04: Time out printer	TIME	T#2S	I	+
PROT_PARA_M	DR04: Weighing protocol output (printer=0, memory card=1)	BOOL	T#2S	I	+
Res304_M	DR04: Reserve	BYTE		I	+
LIMIT1_M	DR04: Limit 1 based on gross weight (0) or net weight (1)	BOOL		I	+
LIMIT2_M	DR04: Limit 2 based on gross weight (0) or net weight (1)	BOOL		I	+
EMPTY_GN_M	DR04: Basic for empty detection gross/net	BOOL		I	+
Res404_M	DR04: Reserve	BYTE		I	+
EMPTY_RNG_M	DR04: Empty range	REAL		I	+
LIM1_ON_M	DR04: Value for limit 1 on	REAL		I	+
LIM1_OFF_M	DR04: Value for limit 1 off	REAL		I	+
LIM2_ON_M	DR04: Value for limit 2 on	REAL		I	+
LIM2_OFF_M	DR04: Value for limit 2 off	REAL		I	+
LIM3_ON_M	DR04: Value for limit 3 on	REAL		I	+
LIM3_OFF_M	DR04: Value for limit 3 off	REAL		I	+
MIN_FL1_M	DR04: Minimum flow (1/s) limit value 1	REAL		I	+
MIN_FL2_M	DR04: Minimum flow (1/s) limit value 2	REAL		I	+
MIN_F_D_FL_M	DR04: Filter depth of average value filter for minimum flow check	BYTE		I	+

Table 4-7 CFC – connections of SFTA – DS4 inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SC_TYPE_O04	DR04: Scale type (all types non automatic/automatic)	BYTE		O	
Res104_O	DR04: Reserve	BYTE		O	
Res204_O	DR04: Reserve	WORD		O	
T_OUT_PR_O	DR04: Time out printer	TIME	T#2S	O	
PROT_PARA_O	DR04: Weighing protocol output (printer=0, memory card=1)	BOOL	T#2S	O	
Res304_O	DR04: Reserve	BYTE		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
LIMIT1_O	DR04: Limit 1 based on gross weight (0) or net weight (1)	BOOL		O	
LIMIT2_O	DR04: Limit 2 based on gross weight (0) or net weight (1)	BOOL		O	
EMPTY_GN_O	DR04: Basic for empty detection gross/net	BOOL		O	
Res404_O	DR04: Reserve	BYTE		O	
EMPTY_RNG_O	DR04: Empty range	REAL		O	
LIM1_ON_O	DR04: Value for limit 1 on	REAL		O	
LIM1_OFF_O	DR04: Value for limit 1 off	REAL		O	
LIM2_ON_O	DR04: Value for limit 2 on	REAL		O	
LIM2_OFF_O	DR04: Value for limit 2 off	REAL		O	
LIM3_ON_O	DR04: Value for limit 3 on	REAL		O	
LIM3_OFF_O	DR04: Value for limit 3 off	REAL		O	
MIN_FL1_O	DR04: Minimum flow (1/s) limit value 1	REAL		O	
MIN_FL2_O	DR04: Minimum flow (1/s) limit value 2	REAL		O	
MIN_F_D_FL_O	DR04: Filter depth of average value filter for minimum flow check	BYTE		O	
Res504_O		BYTE		O	

Table 4-8 CFC – connections of SFTA – DS4 outputs

4.1.15 Reserve parameter (Data record 24)

The parameters in Data record 24 may not be changed.

4.1.16 Interface parameters (Data record 7)

Inputs (manual and/or automatic):

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CLK_REQ_M	DR07: Request for time synchronization (yes=0, no=1)	BOOL		I	+
SIM_SRC_W_M	DR07: Source for simulation of weight	BYTE		I	+
DECPNT_M	DR07: Weight value correction after decimal point	BYTE		I	+
Res107_M	DR07: Reserve 1	BYTE		I	+
FRC_SERV_EN_M	DR07: Enable force digital output in service mode (yes=1, no=0)	BOOL		I	+
PROC_V1_M	DR07: Index for process value 1	BYTE		I	+
PROC_V2_M	DR07: Index for process value 2	BYTE		I	+
Res207_M	DR07: Reserve 2	BYTE		I	+
PR_AL0_M	DR07: Process alarm 0	WORD		I	+
PR_AL1_M	DR07: Process alarm 1	WORD		I	+

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
PR_AL2_M	DR07: Process alarm 2	WORD		I	+
PR_AL3_M	DR07: Process alarm 3	WORD		I	+
PR_AL4_M	DR07: Process alarm 4	WORD		I	+
PR_AL5_M	DR07: Process alarm 5	WORD		I	+
PR_AL6_M	DR07: Process alarm 6	WORD		I	+
PR_AL7_M	DR07: Process alarm 7	WORD		I	+
S7_LB_M	DR07: Lifebit check (0=off, 1.....n=sec)	TIME		I	+
AO_ZERO_M	DR07: Value for analog output for 0/4 mA	REAL		I	+
AO_END_M	DR07: Value for analog output for 20 mA	REAL		I	+
AO_CST_M	DR07: Value for analog output when OD-signal	REAL		I	+
AO_SRC_M	DR07: Source for control of analog output	BYTE		I	+
AO4_20_M	DR07: Parameter for analog output (0=0.....20 mA, 1=4....20 mA)	BOOL		I	+
PRT_BD_M	DR07: Printer baud rate	BYTE		I	+
RS232XONOFF_M	DR07: 0=XON/XOFF off, 1=XON/XOFF on	BOOL		I	+
RS232RTSCTS_M	DR07: 0=RTS/CTS off, 1=RTS/CTS on	BOOL		I	+
RS485_PROT_M	DR07: Protocol for RS484(0=non, 1=SIEBERT S11)	BYTE		I	+
DECPNT_D_M	DR07: Decimal point for SIEBERT Display	BYTE		I	+
RS485_BD_M	DR07: RS485- baud rate	BYTE		I	+
RS485_PAR_M	DR07: Parity	BOOL		I	+
RS485_DATA_M	DR07: Data bits	BOOL		I	+
RS485_STOP_M	DR07: Stop bits	BOOL		I	+
DOF1_M	DR07: Function for digital output 1	BYTE		I	+
DOF2_M	DR07: Function for digital output 2	BYTE		I	+
DOF3_M	DR07: Function for digital output 3	BYTE		I	+
DOF4_M	DR07: Function for digital output 4	BYTE		I	+
DOF5_M	DR07: Function for digital output 5	BYTE		I	+
DOF6_M	DR07: Function for digital output 6	BYTE		I	+
DOF7_M	DR07: Function for digital output 7	BYTE		I	+
DOF8_M	DR07: Function for digital output 8	BYTE		I	+
DO_HL_A1_M	DR07: High/low active for digital output 1	BOOL		I	+
DO_HL_A2_M	DR07: High/low active for digital output 2	BOOL		I	+
DO_HL_A3_M	DR07: High/low active for digital output 3	BOOL		I	+
DO_HL_A4_M	DR07: High/low active for digital output 4	BOOL		I	+
DO_HL_A5_M	DR07: High/low active for digital output 5	BOOL		I	+
DO_HL_A6_M	DR07: High/low active for digital output 6	BOOL		I	+
DO_HL_A7_M	DR07: High/low active for digital output 7	BOOL		I	+
DO_HL_A8_M	DR07: High/low active for digital output 8	BOOL		I	+
DO_BY_E1_M	DR07: Digital output 1 active by error or OD-signal	BOOL		I	+
DO_BY_E2_M	DR07: Digital output 2 active by error or OD-signal	BOOL		I	+
DO_BY_E3_M	DR07: Digital output 3 active by error or OD-signal	BOOL		I	+
DO_BY_E4_M	DR07: Digital output 4 active by error or OD-signal	BOOL		I	+

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
DO_BY_E5_M	DR07: Digital output 5 active by error or OD-signal	BOOL		I	+
DO_BY_E6_M	DR07: Digital output 6 active by error or OD-signal	BOOL		I	+
DO_BY_E7_M	DR07: Digital output 7 active by error or OD-signal	BOOL		I	+
DO_BY_E8_M	DR07: Digital output 8 active by error or OD-signal	BOOL		I	+
DO_BY_E_EN_M	DR07: Enable digital output by error (1=active, 0=not active)	BOOL		I	+
Res407_M	DR07: Reserve	BYTE		I	+
DIF1_M	DR07: Function for digital input 1	BYTE		I	+
DIF2_M	DR07: Function for digital input 2	BYTE		I	+
DIF3_M	DR07: Function for digital input 3	BYTE		I	+
DIF4_M	DR07: Function for digital input 4	BYTE		I	+
DIF5_M	DR07: Function for digital input 5	BYTE		I	+
DIF6_M	DR07: Function for digital input 6	BYTE		I	+
DIF7_M	DR07: Function for digital input 7	BYTE		I	+
DI_HL_A1_M	DR07: High/low active for digital input 1	BOOL		I	+
DI_HL_A2_M	DR07: High/low active for digital input 2	BOOL		I	+
DI_HL_A3_M	DR07: High/low active for digital input 3	BOOL		I	+
DI_HL_A4_M	DR07: High/low active for digital input 4	BOOL		I	+
DI_HL_A5_M	DR07: High/low active for digital input 5	BOOL		I	+
DI_HL_A6_M	DR07: High/low active for digital input 6	BOOL		I	+
DI_HL_A7_M	DR07: High/low active for digital input 7	BOOL		I	+
CNT_T_M	DR07: Scanning time for input counter	TIME	T#1S	I	+
Res507_M	DR07: Reserve	DWORD		I	+
MMC_PR_OWR_M	DR07: MMC Protocol data storage overwrite mode (0=no, 1=yes)	BOOL		I	+
MMC_TR_OWR_M	DR07: MMC Trace date storage overwrite mode (0=no, 1=yes)	BOOL		I	+
MMC_RAM_TR_M	DR07: Trace data write in 0=RAM, 1=MMC	BOOL		I	+
MMC_TR_S_M	DR07: MMC Trace memory size (%)	BYTE		I	+
MMC_PR_S_M	DR07: MMC memory size (%) for protocol	BYTE		I	+
MMC_TR_CYC_M	DR07: Trace cycle (1=10ms)	BYTE		I	+

Table 4-9 CFC – connections of SFTA – DS7 inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CLK_REQ_O	DR07: Request for time synchronization (yes=0, no=1)	BOOL		O	
SIM_SRC_W_O	DR07: Source for simulation of weight	BYTE		O	
DECPNT_O	DR07: Weight value correction after decimal point	BYTE		O	
Res107_O	DR07: Reserve 1	BYTE		O	
FRC_SERV_EN_O	DR07: Enable force digital output in service mode (yes=1, no=0)	BOOL		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
PROC_V1_O	DR07: Index for process value 1	BYTE		O	
PROC_V2_O	DR07: Index for process value 2	BYTE		O	
Res207_O	DR07: Reserve 2	BYTE		O	
PR_AL0_O	DR07: Process alarm 0	WORD		O	
PR_AL1_O	DR07: Process alarm 1	WORD		O	
PR_AL2_O	DR07: Process alarm 2	WORD		O	
PR_AL3_O	DR07: Process alarm 3	WORD		O	
PR_AL4_O	DR07: Process alarm 4	WORD		O	
PR_AL5_O	DR07: Process alarm 5	WORD		O	
PR_AL6_O	DR07: Process alarm 6	WORD		O	
PR_AL7_O	DR07: Process alarm 7	WORD		O	
S7_LB_O	DR07: Lifebit check (0=off, 1.....n=sec)	TIME		O	
AO_ZERO_O	DR07: Value for analog output for 0/4 mA	REAL		O	
AO_END_O	DR07: Value for analog output for 20 mA	REAL		O	
AO_CST_O	DR07: Value for analog output when OD-signal	REAL		O	
AO_SRC_O	DR07: Source for control of analog output	BYTE		O	
AO4_20_O	DR07: Parameter for analog output (0=0.....20 mA, 1=4....20 mA)	BOOL		O	
PRT_BD_O	DR07: Printer baud rate	BYTE		O	
RS232XONOFF_O	DR07: 0=XON/XOFF off, 1=XON/XOFF on	BOOL		O	
RS232RTSCTS_O	DR07: 0=RTS/CTS off, 1=RTS/CTS on	BOOL		O	
RS485_PROT_O	DR07: Protocol for RS484(0=non, 1=SIEBERT S11)	BYTE		O	
DECPNT_D_O	DR07: Decimal point for SIEBERT Display	BYTE		O	
RS485_BD_O	DR07: RS485- baud rate	BYTE		O	
RS485_PAR_O	DR07: Parity	BOOL		O	
RS485_DATA_O	DR07: Data bits	BOOL		O	
RS485_STOP_O	DR07: Stop bits	BOOL		O	
DOF1_O	DR07: Function for digital output 1	BYTE		O	
DOF2_O	DR07: Function for digital output 2	BYTE		O	
DOF3_O	DR07: Function for digital output 3	BYTE		O	
DOF4_O	DR07: Function for digital output 4	BYTE		O	
DOF5_O	DR07: Function for digital output 5	BYTE		O	
DOF6_O	DR07: Function for digital output 6	BYTE		O	
DOF7_O	DR07: Function for digital output 7	BYTE		O	
DOF8_O	DR07: Function for digital output 8	BYTE		O	
DO_HL_A1_O	DR07: High/low active for digital output 1	BOOL		O	
DO_HL_A2_O	DR07: High/low active for digital output 2	BOOL		O	
DO_HL_A3_O	DR07: High/low active for digital output 3	BOOL		O	
DO_HL_A4_O	DR07: High/low active for digital output 4	BOOL		O	
DO_HL_A5_O	DR07: High/low active for digital output 5	BOOL		O	
DO_HL_A6_O	DR07: High/low active for digital output 6	BOOL		O	
DO_HL_A7_O	DR07: High/low active for digital output 7	BOOL		O	
DO_HL_A8_O	DR07: High/low active for digital output 8	BOOL		O	
DO_BY_E1_O	DR07: Digital output 1 active by error or OD-signal	BOOL		O	
DO_BY_E2_O	DR07: Digital output 2 active by error or	BOOL		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
	OD-signal				
DO_BY_E3_O	DR07: Digital output 3 active by error or OD-signal	BOOL		O	
DO_BY_E4_O	DR07: Digital output 4 active by error or OD-signal	BOOL		O	
DO_BY_E5_O	DR07: Digital output 5 active by error or OD-signal	BOOL		O	
DO_BY_E6_O	DR07: Digital output 6 active by error or OD-signal	BOOL		O	
DO_BY_E7_O	DR07: Digital output 7 active by error or OD-signal	BOOL		O	
DO_BY_E8_O	DR07: Digital output 8 active by error or OD-signal	BOOL		O	
DO_BY_E_EN_O	DR07: Enable digital output by error (1=active, 0=not active)	BOOL		O	
Res407_O	DR07: Reserve	BYTE		O	
DIF1_O	DR07: Function for digital input 1	BYTE		O	
DIF2_O	DR07: Function for digital input 2	BYTE		O	
DIF3_O	DR07: Function for digital input 3	BYTE		O	
DIF4_O	DR07: Function for digital input 4	BYTE		O	
DIF5_O	DR07: Function for digital input 5	BYTE		O	
DIF6_O	DR07: Function for digital input 6	BYTE		O	
DIF7_O	DR07: Function for digital input 7	BYTE		O	
DI_HL_A1_O	DR07: High/low active for digital input 1	BOOL		O	
DI_HL_A2_O	DR07: High/low active for digital input 2	BOOL		O	
DI_HL_A3_O	DR07: High/low active for digital input 3	BOOL		O	
DI_HL_A4_O	DR07: High/low active for digital input 4	BOOL		O	
DI_HL_A5_O	DR07: High/low active for digital input 5	BOOL		O	
DI_HL_A6_O	DR07: High/low active for digital input 6	BOOL		O	
DI_HL_A7_O	DR07: High/low active for digital input 7	BOOL		O	
CNT_T_O	DR07: Scanning time for input counter	TIME	T#1S	O	
Res507_O	DR07: Reserve	DWORD		O	
MMC_PR_OWR_O	DR07: MMC Protocol data storage overwrite mode (0=no, 1=yes)	BOOL		O	
MMC_TR_OWR_O	DR07: MMC Trace date storage overwrite mode (0=no, 1=yes)	BOOL		O	
MMC_RAM_TR_O	DR07: Trace data write in 0=RAM, 1=MMC	BOOL		O	
MMC_TR_S_O	DR07: MMC Trace memory size (%)	BYTE		O	
MMC_PR_S_O	DR07: MMC memory size (%) for protocol	BYTE		O	
MMC_TR_CYC_O	DR07: Trace cycle (1=10ms)	BYTE		O	

Table 4-10 CFC – connections of SFTA – DS7 Outputs

4.1.17 Date/time (Data record 8)

Input/Output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
DT_M	DR08: Date and time for Siwarex	DATE_AND _TIME		I	
DT_O	DR08: Date and time for Siwarex	DATE_AND _TIME		O	

Table 4-11 CFC – connections of SFTA – DS8

4.1.18 Application ID (Data record 9)

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CRC_CH_M	DR09: CRC checksum of the application software	DWORD		I	+
LENGTH_M	DR09: Application software length	DWORD		I	+
COPYRT_M	DR09: Info of module and number	STRING [26]		I	+
MOD_NAME_M	DR09: Module name	STRING [10]		I	+
APPL_ID_M	DR09: Application identifier	STRING [32]		I	+
FILE_NAME_M	DR09: File name	STRING [20]		I	+
A_VER_M	DR09: Application version	CHAR		I	+
A_F_VER_M	DR09: Function identification	BYTE		I	+
A_DR_VER_M	DR09: Data record structure identification	BYTE		I	+
A_VER_NO_M	DR09: Application version number	BYTE		I	+
CREAT_D_M	DR09: Creation date	STRING [10]		I	+
CREAT_T_M	DR09: Creation time	STRING [8]		I	+
VER_BOOT_M	DR09: Boot version	WORD		I	+
SC_TYPE_M9	DR09: Type of scale	STRING [4]		I	+

Table 4-12 CFC – connections of SFTA – DS9

4.1.19 OCX Software ID (data record 39)

Inputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
OCX_DES_M	DR39: OCX for legal display - Version designation	STRING[1]	'V'	I	+
Res139_M	DR39: Reserve	BYTE		I	+
OCX_NM_M	DR39: OCX for legal display Version main number	INT	2	I	+
OCX_NS_M	DR39: OCX for legal display Version sub number	INT	1	I	

Table 4-13 CFC – connections of SFTA – DS39 Inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
OCX_DES_O	DR39: OCX for legal display - Version designation	STRING[1]	'V'	O	
Res139_O	DR39: Reserve	BYTE		O	
OCX_NM_O	DR39: OCX for legal display Version main number	INT	2	O	
OCX_NS_O	DR39: OCX for legal display Version sub number	INT	1	O	

Table 4-14 CFC – connections of SFTA – DS39 inputs

4.1.20 Tare input weight (Data record 15)

Manual, automatic input and output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
TARE_V_M	DR15: Tare set value	REAL		I	+
TARE_V_A	DR15: Tare set value	REAL		I	
TARE_V_O	DR15: Tare set value	REAL		O	

Table 4-15 CFC – connections of SFTA – DS15

4.1.21 Ext. Display default value (Data record 18)

Manual, automatic input and output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
DISP_V_ADD_M	DR18: Additional value for digital display	REAL		I	+
DISP_V_ADD_A	DR18: Additional value for digital display	REAL		I	
DISP_V_ADD_O	DR18: Additional value for digital display	REAL		O	

Table 4-16 CFC – connections of SFTA – DS18

4.1.22 Setpoint (data record 20)

Manual, automatic input and output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SP_V_M	DR20: Set point for dosing cycle	REAL		I	+
SP_V_A	DR20: Set point for dosing cycle	REAL		I	
SP_V_O	DR20: Set point for dosing cycle	REAL		O	

Table 4-17 CFC – connections of SFTA – DS20

4.1.23 Emptying amount (Data record 21)

Manual, automatic input and output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SP_LOAD_V_M	DR21: Set point for load (totalizing)	REAL		I	+
SP_LOAD_V_A	DR21: Set point for load (totalizing)	REAL		I	
SP_LOAD_V_O	DR21: Set point for load (totalizing)	REAL		O	

Table 4-18 CFC – connections of SFTA – DS21

4.1.24 Filling parameter (Data record 22)

Manual inputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAX_DOS_T_M	DR22: Maximum time for dosing cycle	TIME	T#10S	I	+
IN_FL_V_M	DR22: In flight value	REAL		I	+
FINE_V_M	DR22: Fine value	REAL		I	+
COMP_V_M	DR22: Fine switch off correction	REAL		I	+
T_PREDOS_M	DR22: Timer for predosing	TIME		I	+
TO1_M	DR22: First tolerance band plus	REAL		I	+
TU1_M	DR22: First tolerance band minus	REAL		I	+
TO2_M	DR22: Second tolerance band plus	REAL		I	+
TU2_M	DR22: Second tolerance band minus	REAL		I	+

Table 4-19 CFC – connections of SFTA – DS22 manual inputs

Automatic inputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAX_DOS_T_A	DR22: Maximum time for dosing cycle	TIME	T#10S	I	
IN_FL_V_A	DR22: In flight value	REAL		I	
FINE_V_A	DR22: Fine value	REAL		I	
COMP_V_A	DR22: Fine switch off correction	REAL		I	
T_PREDOS_A	DR22: Timer for predosing	TIME		I	
TO1_A	DR22: First tolerance band plus	REAL		I	
TU1_A	DR22: First tolerance band minus	REAL		I	
TO2_A	DR22: Second tolerance band plus	REAL		I	
TU2_A	DR22: Second tolerance band minus	REAL		I	

Table 4-20 CFC – connections of SFTA – DS22 automatic inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAX_DOS_T_O	DR22: Maximum time for dosing cycle	TIME	T#10S	O	
IN_FL_V_O	DR22: In flight value	REAL		O	
FINE_V_O	DR22: Fine value	REAL		O	
COMP_V_O	DR22: Fine switch off correction	REAL		O	
T_PREDOS_O	DR22: Timer for predosing	TIME		O	
TO1_O	DR22: First tolerance band plus	REAL		O	
TU1_O	DR22: First tolerance band minus	REAL		O	
TO2_O	DR22: Second tolerance band plus	REAL		O	
TU2_O	DR22: Second tolerance band minus	REAL		O	

Table 4-21 CFC – connections of SFTA – Outputs

4.1.25 Dosing parameter (Data record 23)

Inputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
TXTNO_A_M	DR23: Text number for automatic protocol by finished	BYTE		I	+
Res123_M	DR23: Reserve	BYTE		I	+
Res223_M	DR23: Reserve	WORD		I	+
MAX_SP_UNLD_M	DR23: Maximum setpoint for one dosing (totalizing scale type)	REAL		I	+
DIS_COARSE_M	DR23: Disable time for coarse dosing	TIME	T#500MS	I	+
DIS_FINE_M	DR23: Disable time for fine dosing	TIME	T#500MS	I	+
DIS_COMPARE_M	DR23: Max disable time for dosing comparator	TIME		I	+
COARSE_AO_V_M	DR23: Analog value when coarse signal on	BYTE		I	+
FINE_AO_V_M	DR23: Analog value when fine signal on	BYTE		I	+
F_TYPE_D_M	DR23: FIlter type for dosing filter	BYTE		I	+
F_FREQ_D_M	DR23: Dosing filter low pass frequency	BYTE		I	+
TARA_Z_PROG_M	DR23: Selection of tare/zeroing program for automatic dosing	BYTE		I	+
TARA_Z_CYC_M	DR23: Cycle for not tarring or zeroing by automatic dosing	BYTE		I	+
Res323_M	DR23: Reserve	WORD		I	+
TARA_MIN_V_M	DR23: Minimum tare value	REAL		I	+
TARA_MAX_V_M	DR23: Maximum tare value	REAL		I	+
T_FOR_Z_M	DR23: TIME between two automatic zeroing	TIME	T#5M	I	+
W_DI0_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 0 on	BYTE		I	+
W_DI1_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 1 on	BYTE		I	+
W_DI2_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 2 on	BYTE		I	+
W_DI3_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 3 on	BYTE		I	+
W_DI4_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 4 on	BYTE		I	+
W_DI5_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 5 on	BYTE		I	+
W_DI6_STEP_N_M	DR23: Dosing is waiting in step n (0.....7) by digital input no 6 on	BYTE		I	+
Res423_M	DR23: Reserve	BYTE		I	+
T_ONE_STEP_M	DR23: Time for one step while dosing	TIME		I	+
Res523_M	DR23: Reserve	BOOL		I	+
CH_STOP_STEP1_M	DR23: Check stop at the end of step 1	BOOL		I	+
CH_STOP_STEP2_	DR23: Check stop at the end of step 2	BOOL		I	+

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
M					
CH_STOP_STEP3_M	DR23: Check stop at the end of step 3	BOOL		I	+
CH_STOP_STEP4_M	DR23: Check stop at the end of step 4	BOOL		I	+
CH_STOP_STEP5_M	DR23: Check stop at the end of step 5	BOOL		I	+
CH_STOP_STEP6_M	DR23: Check stop at the end of step 6	BOOL		I	+
CH_STOP_STEP7_M	DR23: Check stop at the end of step 7	BOOL		I	+
Res623_M	DR23: Reserve	BYTE		I	+
AUTO_AFTER_DOS_M	DR23: Automatic after dosing when tol-	BOOL		I	+
AFTER_DOS_METH_M	DR23: Method for after dosing (0=conti, 1=inching)	BOOL		I	+
TO1_STOP_M	DR23: Dosing stop when outrange TO1	BOOL		I	+
TO2_STOP_M	DR23: Dosing stop when outrange TO2	BOOL		I	+
TU1_STOP_M	Dosing stop when outrange TU1	BOOL		I	+
TU2_STOP_M	Dosing stop when outrange TU2	BOOL		I	+
TOL_CONT_M	Conti after tol stop allowed	BOOL		I	+
PER_NOTOL_CH_M	DR23: Period for no tolerance check	BYTE		I	+
T_INCH_P_M	DR23: Time for fine signal pulse by inching mode	TIME	T#1S	I	+
CNTR_R_ERR_M	DR23: Controller reset by error	BOOL	T#1S	I	+
CNTR_TYPE_M	DR23: Controller type	BYTE		I	+
PR_CNTR_F_M	DR23: Factor for proportional controller	BYTE		I	+
PR_CNTR_LIM_M	DR23: Limit for proportional controller	REAL		I	+
PR_CNTR_OPP_M	DR23: Proportional controller optimum plus	REAL		I	+
PR_CNTR_OPM_M	DR23: Proportional controller optimum minus	REAL		I	+
MIN_FINE_T_M	DR23: Minimum time for fine signal	TIME	T#1S	I	+
F_T_CNTR_M	DR23: Factor for fine time controller	BYTE		I	+
Res723_M	DR23: Reserve	BYTE		I	+
Res823_M	DR23: Reserve	WORD		I	+
T_OVLAP_M	DR23: Overlap time while emptying	TIME		I	+
T_EMPTY_M	DR23: Emptying time	TIME		I	+
MAX_T_EMPTY_M	DR23: Max time for emptying	TIME		I	+
UNLD_COARSE_FINE_M	DR23: Unload coarse and fine	BOOL		I	+
Res923_M	DR23: Reserve	BYTE		I	+

Table 4-22 CFC – connections of SFTA – DS23 inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
TXTNO_A_O	DR23: Text number for automatic protocol by finished	BYTE		O	
Res123_O	DR23: Reserve	BYTE		O	
Res223_O	DR23: Reserve	WORD		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAX_SP_UNLD_O	DR23: Maximum setpoint for one dosing (totalizing scale type)	REAL		O	
DIS_COARSE_O	DR23: Disable time for coarse dosing	TIME	T#500MS	O	
DIS_FINE_O	DR23: Disable time for fine dosing	TIME	T#500MS	O	
DIS_COMPARE_O	DR23: Max disable time for dosing comparator	TIME		O	
COARSE_AO_V_O	DR23: Analog value when coarse signal on	BYTE		O	
FINE_AO_V_O	DR23: Analog value when fine signal on	BYTE		O	
F_TYPE_D_O	DR23: Filter type for dosing filter	BYTE		O	
F_FREQ_D_O	DR23: Dosing filter low pass frequency	BYTE		O	
TARA_Z_PROG_O	DR23: Selection of tare/zeroing program for automatic dosing	BYTE		O	
TARA_Z_CYC_O	DR23: Cycle for not tarring or zeroing by automatic dosing	BYTE		O	
Res323_O	DR23: Reserve	WORD		O	
TARA_MIN_V_O	DR23: Minimum tare value	REAL		O	
TARA_MAX_V_O	DR23: Maximum tare value	REAL		O	
T_FOR_Z_O	DR23: TIME between two automatic zeroing	TIME	T#5M	O	
W_DI0_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 0 on	BYTE		O	
W_DI1_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 1 on	BYTE		O	
W_DI2_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 2 on	BYTE		O	
W_DI3_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 3 on	BYTE		O	
W_DI4_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 4 on	BYTE		O	
W_DI5_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 5 on	BYTE		O	
W_DI6_STEP_N_O	DR23: Dosing is waiting in step n (0.....7) by digital input no 6 on	BYTE		O	
Res423_O	DR23: Reserve	BYTE		O	
T_ONE_STEP_O	DR23: Time for one step while dosing	TIME		O	
Res523_O	DR23: Reserve	BOOL		O	
CH_STOP_STEP1_O	DR23: Check stop at the end of step 1	BOOL		O	
CH_STOP_STEP2_O	DR23: Check stop at the end of step 2	BOOL		O	
CH_STOP_STEP3_O	DR23: Check stop at the end of step 3	BOOL		O	
CH_STOP_STEP4_O	DR23: Check stop at the end of step 4	BOOL		O	
CH_STOP_STEP5_O	DR23: Check stop at the end of step 5	BOOL		O	
CH_STOP_STEP6_O	DR23: Check stop at the end of step 6	BOOL		O	
CH_STOP_STEP7_O	DR23: Check stop at the end of step 7	BOOL		O	
Res623_O	DR23: Reserve	BYTE		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
AUTO_AFTER_DOS_O	DR23: Automatic after dosing when tol-	BOOL		O	
AFTER_DOS_METH_O	DR23: Method for after dosing (0=conti, 1=inching)	BOOL		O	
TO1_STOP_O	DR23: Dosing stop when outrange TO1	BOOL		O	
TO2_STOP_O	DR23: Dosing stop when outrange TO2	BOOL		O	
PER_NOTOL_CH_O	DR23: Period for no tolerance check	BYTE		O	
T_INCH_P_O	DR23: Time for fine signal pulse by inching mode	TIME	T#1S	O	
CNTR_R_ERR_O	DR23: Controller reset by error	BOOL	T#1S	O	
CNTR_TYPE_O	DR23: Controller type	BYTE		O	
PR_CNTR_F_O	DR23: Factor for proportional controller	BYTE		O	
PR_CNTR_LIM_O	DR23: Limit for proportional controller	REAL		O	
PR_CNTR_OPP_O	DR23: Proportional controller optimum plus	REAL		O	
PR_CNTR_OPM_O	DR23: Proportional controller optimum minus	REAL		O	
MIN_FINE_T_O	DR23: Minimum time for fine signal	TIME	T#1S	O	
F_T_CNTR_O	DR23: Factor for fine time controller	BYTE		O	
Res723_O	DR23: Reserve	BYTE		O	
Res823_O	DR23: Reserve	WORD		O	
T_OVLAP_O	DR23: Overlap time while emptying	TIME		O	
T_EMPTY_O	DR23: Emptying time	TIME		O	
MAX_T_EMPTY_O	DR23: Max time for emptying	TIME		O	
UNLD_ONLY_COARSE_O	DR23: Unload only coarse	BOOL		O	
Res923_O	DR23: Reserve	BYTE		O	

Table 4-23 CFC – Connections of SFTA – DS23 outputs

4.1.26 Interne process value 1 (Data record 26)

Inputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
PR_TARA_M	DR26: Actual tare is not 0	BOOL		I	
Res126_M	DR26: Reserve	BYTE		I	
Res226_M	DR26: Reserve	BYTE		I	
STD_ALONE_M	DR26: Stand alone activated	BOOL		I	
D_LC_ACT_M	DR26: Digital load cell activated	BOOL		I	
TARE_W_P_M	DR26: Actual weight process tare value	REAL		I	
TARE_W_AV_M	DR26: Actual weight process tare value average	REAL		I	
PWRON_ZV_M	DR26: Actual Zeroing value by power on	REAL		I	
ZV_M	DR26: Actual Zeroing value	REAL		I	
ZV_AUTO_M	DR26: Actual Zeroing value automatic	REAL		I	
SEN_R_REF_M	DR26: Sensor resistance reference value	INT		I	
SEN_R_CH_M	DR26: Sensor resistance actual check value	INT		I	
MAX_W_MEM_M	DR26: Actual max weight memory	REAL		I	
ON_TIME_M	DR26: Actual power on time	DINT		I	
TEMP_MAX_M	DR26: Max. temperature	INT		I	
Res326_M	DR26: Reserve	CHAR		I	
Res426_M	DR26: Reserve	CHAR		I	
CRC_M	DR26: CRC	WORD		I	

Table 4-24 CFC – connections of SFTA – DS26 Inputs

Outputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
PR_TARA_O	DR26: Actual tare is not 0	BOOL		O	
Res126_O	DR26: Reserve	BYTE		O	
Res226_O	DR26: Reserve	BYTE		O	
STD_ALONE_O	DR26: Stand alone activated	BOOL		O	
D_LC_ACT_O	DR26: Digital load cell activated	BOOL		O	
TARE_W_P_O	DR26: Actual weight process tare value	REAL		O	
TARE_W_AV_O	DR26: Actual weight process tare value average	REAL		O	
PWRON_ZV_O	DR26: Actual Zeroing value by power on	REAL		O	
ZV_O	DR26: Actual Zeroing value	REAL		O	
ZV_AUTO_O	DR26: Actual Zeroing value automatic	REAL		O	
SEN_R_REF_O	DR26: Sensor resistance reference value	INT		O	
SEN_R_CH_O	DR26: Sensor resistance actual check value	INT		O	

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAX_W_MEM_O	DR26: Actual max weight memory	REAL		O	+
ON_TIME_O	DR26: Actual power on time	DINT		O	+
TEMP_MAX_O	DR26: Max. temperature	INT		O	+
Res326_O	DR26: Reserve	CHAR			
Res426_O	DR26: Reserve	CHAR			
CRC_O	DR26: CRC	WORD			

Table 4-25 CFC – Connections of SFTA – DS26 Outputs

4.1.27 Process values (Data record 30)

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SWR1_O	DR30: Status weighing range 1	BOOL		O	+
SWR2_O	DR30: Status weighing range 2	BOOL		O	+
SWR3_O	DR30: Status weighing range 3	BOOL		O	+
SLIM1_ON_O	DR30: Status limit 1 is on	BOOL		O	+
SLIM2_ON_O	DR30: Status limit 2 is on	BOOL		O	+
SLIM3_ON_O	DR30: Status limit 3 is on	BOOL		O	+
STARED_O	DR30: Status scale tared	BOOL		O	+
STARED_BY_M_O	DR30: Status scale tared by manual	BOOL		O	+
SMAX_9E_O	DR30: Status max plus 9 e	BOOL		O	+
S025D_Z_O	DR30: Status zero 0.25 d	BOOL		O	+
SWAIT_STILL1_O	DR30: Status waiting for stand still 1	BOOL		O	+
SSTILL1_ON_O	DR30: Status stand still 1 on	BOOL		O	+
SSC_CAL_O	DR30: Status scale is calibrated	BOOL		O	+
SCMDERR_DI_O	DR30: Status command error on digital input	BOOL		O	+
SSIM_ON_O	DR30: Status weighing simulation is on	BOOL		O	+
SSERV_MODE_ON_O	DR30: Status service mode is on	BOOL		O	+
SPRT_O	DR30: Status printing protocol	BOOL		O	+
SRS232_BUSY_O	DR30: Status rs232 busy by Siwarex protocol	BOOL		O	+
SMMC_CON_O	DR30: Status micro memory card connected	BOOL		O	+
SMMC_RDY_O	DR30: Status mmc ready and formatted	BOOL		O	+
SMMC_RDY_F_TR_O	DR30: Status mmc is ready for trace	BOOL		O	+
SMMC_RDY_W_O	DR30: Status mmc is ready for legal data	BOOL		O	+
SMMC_TR_A_O	DR30: Status mmc trace data is active	BOOL		O	+
SMIN_FLOW1_O	DR30: Status min flow 1	BOOL		O	+
SMIN_FLOW2_O	DR30: Status min flow 2	BOOL		O	+
SEMPTY_O	DR30: Status scale empty	BOOL		O	+
SL_DATA_PROT_O	DR30: Status legal data protection on	BOOL		O	+
SRes130_O	DR30: Status reserve	BOOL		O	+
SMMC_REA_O	DR30: MMC Protocol ready for output	BOOL		O	+
SDIGIT_LC_O	DR30: Digital load cell active	BOOL		O	+
SST_ALONE_O	DR30: Stand alone mode	BOOL		O	+
SERR_OC_O	DR30: Status module error	BOOL		O	+
SDOS_STEP0_O	DR30: Status dosing cycle in step 0	BOOL		O	+
SDOS_STEP1_O	DR30: Status dosing cycle in step 1	BOOL		O	+
SDOS_STEP2_O	DR30: Status dosing cycle in step 2	BOOL		O	+

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
SDOS_STEP3_O	DR30: Status dosing cycle in step 3	BOOL		O	+
SDOS_STEP4_O	DR30: Status dosing cycle in step 4	BOOL		O	+
SDOS_STEP5_O	DR30: Status dosing cycle in step 5	BOOL		O	+
SDOS_STEP6_O	DR30: Status dosing cycle in step 6	BOOL		O	+
SDOS_STEP7_O	DR30: Status dosing cycle in step 7	BOOL		O	+
SAFTER_DOS_O	DR30: Status after dosing is active	BOOL		O	+
SCOARSE_ON_O	DR30: Status coarse signal on	BOOL		O	+
SFINE_ON_O	DR30: Status fine signal on	BOOL		O	+
ST_PREDOS_O	DR30: Status timer predosing is running	BOOL		O	+
SEMPTY_ON_O	DR30: Status emptying signal is on	BOOL		O	+
SSTOPPED_O	DR30: Status dosing cycle temporarily stopped	BOOL		O	+
SCH_STPD_O	DR30: Status check stop	BOOL		O	+
SCH_STP_FOL_O	DR30: Status check stop follows	BOOL		O	+
SDOS_CY_ABO_O	DR30: Status dosing cycle aborted	BOOL		O	+
SN_STEP_W_O	DR30: Status next step is waiting for trigger	BOOL		O	+
STO2_O	DR30: Status tol plus to2 on	BOOL		O	+
STO1_O	DR30: Status tol plus to1 on	BOOL		O	+
STOL_OK_O	DR30: Status tolerance ok	BOOL		O	+
STU1_O	DR30: Status tol minus to1 on	BOOL		O	+
STU2_O	DR30: Status tol minus to2 on	BOOL		O	+
STOL_BAD_O	DR30: Status tolerance bad	BOOL		O	+
SSTILL2_ON_O	DR30: Status stand still 2 on	BOOL		O	+
SSTILL3_ON_O	DR30: Status stand still 3 on	BOOL		O	+
SCHECK_F_O	DR30: Check will follow	BOOL		O	+
SDIS_COMPARA_O	DR30: Status disable set point comparator	BOOL		O	+
SCONTI_MODE_DOS_O	DR30: Status continuous mode on by dosing	BOOL		O	+
SRes630_O	DR30: Status reserve	BOOL		O	+
SEND_DOS_CYC_O	DR30: Status end of one dosing cycle	BOOL		O	+
SEND_CHARGE_O	DR30: Status end of charge (unload mode)	BOOL		O	+
SGROS_WGT_O	DR30: Actual weight process value gross	REAL		O	+
SNET_WGT_O	DR30: Actual weight process value net	REAL		O	+
STARE_WGT_O	DR30: Actual weight process value tare	REAL		O	+
SGROS_NET_V_O	DR30: Actual weight process legal value	REAL		O	+
SGROS_NET_V_10X_O	DR30: Actual weight process legal value x 10	REAL		O	+
STARE_V_O	DR30: Actual weight tare process legal value	REAL		O	+
SLAST_DOS_V_O	DR30: Actual weight process last dosing cycle	REAL		O	+
SCOUNTER_V_O	DR30: Actual counter value	DINT		O	+
STOT_V1_O	DR30: Actual total of loaded weight 1	STRUCT		O	
STOT_V2_O	DR30: Actual total of loaded weight 2	REAL		O	+

Table 4-26 CFC – connections of SFTA – DS30 outputs

4.1.28 Extended process values (data record 31)

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
M_FLOW_O	DR31: Actual material flow (Weight/s)	REAL		O	+
ACT_AFTERRUN_V_O	DR31: Actual in flight value calculated by Siwarex	REAL		O	+
ACT_FINE_V_O	DR31: Actual fine value calculated by Siwarex	REAL		O	+
ACT_TEMP_O	DR31: Actual temperature	DINT		O	+
ACT_DIG_FS_O	DR31: Actual digit value by AD-converter signal filter	DINT		O	+
ACT_DIG_FD_O	DR31: Actual digit value by AD-converter dosing filter	DINT		O	+
REST_WGT_O	DR31: Actual rest weight	REAL		O	+
ACT_SP_UNLD_O	DR31: Actual setpoint for unload	REAL		O	+
ACT_ERR_SERV_O	DR31: Actual error (only for service)	DWORD		O	+
ACT_DT_O	DR31: Actual date and time in Siwarex	DATE_AND_TIME		O	
AO_V_O31	DR31: Actual analog output value	INT		O	+
ACT_DI_O	DR31: Actual state of digital input	BYTE		O	+
STAT_DI_LC_O	DR31: Actual state digital load cell	BYTE		O	+
SEN_RES_REF_O	DR31: Sensor resistance reference value	INT		O	+
SEN_RES_CH_O	DR31: Sensor resistance actual check value	INT		O	+

Table 4-27 CFC – connections of SFTA – DS31 outputs

4.1.29 Statistic data (Data record 32)

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CNT_CYC_TOT_O	DR32: Cycle counter	INT		O	+
CNT_CH_CYC_O	DR32: Counter for tolerance checked cycle	INT		O	+
CNT_TO2_EX_O	DR32: Counter - more than to2 plus band	INT		O	+
CNT_TO1_BAND_O	DR32: Counter - more than to1 plus band	INT		O	+
CNT_TOL_OK_O	DR32: Counter - tolerance ok	INT		O	+
CNT_TU1_BAND_O	DR32: Counter - less than TU1	INT		O	+
CNT_TU2_BAND_O	DR32: Counter - less than TU2	INT		O	+
CNT_TOL_BAD_O	DR32: Counter - Tolerance bad	INT		O	+
Res132_O	DR32: Reserve	INT		O	+
Res133_O	DR32: Reserve	INT		O	+
ACT_SP_O	DR32: Actual set point	REAL		O	+
ACT_AV_V_O	DR32: Actual average value by checked cycle	REAL		O	+
STD_DEV_O	DR32: Standard deviation	REAL		O	+
THRU_PER_H_O	DR32: Thruput per hour	REAL		O	+
CYC_PER_H_O	DR32: Dosing cycle per hour	INT		O	+

Table 4-28 CFC – connections of SFTA – DS32 outputs

4.1.30 ASCII weight value (data record 34)

Output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
ASCII_WGT_O	DR34: Actual ASCII weight (same as for display)	STRING [16]		O	+

Table 4-29 CFC – connections of SFTA – DS34 outputs

4.1.31 Cryptodata (data record 35)

Output:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
DATAx_O 01<=x<=32	DR35: Cryptodata	BYTE		O	+

Table 4-30 CFC – connections of SFTA – DS35 outputs

4.1.32 Last log data (data record 44)

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MMC_ID1_O	DR44: MMC Id number1	WORD		O	+
MMC_ID2_O	DR44: MMC Id number2	WORD		O	+
MMC_ID3_O	DR44: MMC Id number3	BYTE		O	+
Res144_O	DR44: Reserve	BYTE		O	+
Res244_O	DR44: Reserve	WORD		O	+
PROT_ID_O	DR44: Id of protocol	DINT		O	+
L_PROT_O	Text of last protocol	STRING [160]		O	+

Table 4-31 CFC – connections of SFTA – DS44 Outputs

4.1.33 String (Data record 45)

Inputs (manual and/or automatic):

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
ADD_TXT1_M	DR45: Additional text 1	STRING [16]		I	+
ADD_TXT2_M	DR45: Additional text 2	STRING [16]		I	+
ADD_TXT3_M	DR45: Additional text 3	STRING [16]		I	+
ADD_TXT4_M	DR45: Additional text 4	STRING [16]		I	+

Table 4-32 CFC – connections of SFTA – DS45 inputs

Outputs:

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
ADD_TXT1_O	DR45: Additional text 1	STRING [16]		O	
ADD_TXT2_O	DR45: Additional text 2	STRING [16]		O	
ADD_TXT3_O	DR45: Additional text 3	STRING [16]		O	
ADD_TXT4_O	DR45: Additional text 4	STRING [16]		O	

Table 4-33 CFC – connections of SFTA – DS45 outputs

4.1.34 Parameter for reading out MCC logs in SIMATIC (data record 46)

Inputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
ACC_ID_PROT_M	DR46: Prepare access for protocol with ID	DINT		I	
LAST_PROT_SEL_M	DR46: Selection for last protocol	BYTE		I	
Res146_M	DR46: Reserve	BYTE		I	

Table 4-34 CFC – connections of SFTA – DS46 inputs

Outputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
ACC_ID_PROT_O	DR46: Prepare access for protocol with ID	DINT		O	
LAST_PROT_SEL_O	DR46: Selection for last protocol	BYTE		O	
Res146_O	DR46: Reserve	BYTE		O	

Table 4-35 CFC – connections of SFTA – DS46 outputs

4.1.35 Requested log (data record 47)

Outputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MMCID1_O	DR47: MMC Id number 1	WORD		O	
MMCID2_O	DR47: MMC Id number 2	WORD		O	
MMCID3_O	DR47: MMC Id number 3	BYTE		O	
Res147_O	DR47: Reserve	BYTE		O	
Res247_O	DR47: Reserve	WORD		O	
P_ID_O	DR47: Id of protocol	DINT		O	
P_DATA1_O	DR47: Text of protocol part 1	STRING[40]		O	
P_DATA2_O	DR47: Text of protocol part 2	STRING[40]		O	
P_DATA3_O	DR47: Text of protocol part 3	STRING[40]		O	
P_DATA4_O	DR47: Text of protocol part 4	STRING[40]		O	

Table 4-36 CFC – connections of SFTA – DS47 outputs

4.1.36 Overview of current records in MMC (data record 123)

Outputs

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
PRT_PROT_ID_O	DR123: Id number for printer protocol	DWORD		O	
MMCID1_O	DR123: MMC Id number 1	WORD		O	
MMCID2_O	DR123: MMC Id number 2	WORD		O	
MMCID3_O	DR123: MMC Id number 3	BYTE		O	
Res1123_O	DR123: Reserve	BYTE		O	
Res2123_O	DR123: Reserve	WORD		O	
MMC_CAP_O	DR123: MMC capacity bytes	DINT		O	
MMC_CAP_P_O	DR123: MMC capacity bytes for protocol	DINT		O	
CAP_TRACE_O	DR123: Capacity for trace bytes	DINT		O	
OID_MMC_P_O	DR123: The oldest id of MMC protocol	DINT		O	
NID_MMC_P_O	DR123: The new id of MMC protocol	DINT		O	
OID_MMC_T_O	DR123: The oldest id of MMC trace	DINT		O	
NID_MMC_T_O	DR123: The new id of MMC trace	DINT		O	
OID_RAM_T_O	DR123: The oldest id of RAM trace	DINT		O	
NID_RAM_T_O	DR123: The new id of RAM trace	DINT		O	

Table 4-37 CFC – connections of SFTA – DS123 outputs

4.2 CFC CMD_AWI (FB647)

4.2.1 Calling OBs

The block should be installed in the timed interrupt OB, in which the associated driver block of the Siwarex-module is also processed (e.g. OB32). The block must also be installed in the OB100 (carried out automatically in CFC):

4.2.2 Start-up characteristics

Internal flag variables are reset on start-up to enable every pending input bit to be identified as a positive edge and the corresponding command to be issued following initialization.

4.2.3 Function and functional principle

The FTA_CMD block acts as the connection block for the driver block's automatic commands for controlling a Siwarex FT module (SFT_AWI).

There is an input bit for every possible command code and for reading and writing data records. The corresponding command is initiated when the input bit has a positive edge. If several commands are started simultaneously, they are routed to the SFT_AWI block sequentially. After a command is executed, the subsequent pending command to be executed is searched for from its position. Error codes pending at inputs HPRIO1..5 are executed with a higher priority than all other commands (HPRIO1 has the highest priority) and, if necessary, also interrupt linked commands (CMD_601 to 699).

Commands are not routed from the CMD_AWI command block to the SFT_AWI driver block when in manual mode.

4.2.4 Interconnection with SFT_AWI block

Inputs MAN_AUT, CMD_FOK and CMD_ERR of the CMD_AWI block must be connected to outputs QMAN_AUT, CMD_FOK and CMD_ERR of the SFT_AWI block. Outputs AUT_CMD and AUTCMDEN are connected to the SFT_AWI block inputs of the same name.

4.2.5 I/Os of CMD_AWI

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
MAN_AUT	1=AUTO, 0=MANUAL Mode (for connection with QMAN_AUT of SFT_AWI)	BOOL	FALSE	I	
CMD_FOK	Command ended without error (for connection with CMD_FOK of SFT_AWI)	BOOL	FALSE	I	
CMD_ERR	Command ended with error (for connection with CMD_ERR of SFT_AWI)	BOOL	FALSE	I	
HPRIO1..5	Commands executed with higher priority (HPPRIO1 has the highest priority)	INT	HPRIO 1: 105 HPRIO 2..5: 0	I	
CMD01..CMD199	Commands 1 to 199	BOOL	FALSE	I	
RD_DR1..130	Read data record 1..130	BOOL	FALSE	I	
WR_DR1..130	Write data record 1..130	BOOL	FALSE	I	
CMD601..699	Commands 601..699 (linked commands)	BOOL	FALSE	I	
RESET	Reset block	BOOL	FALSE	IO	
AUT_CMD	Automatic error codes (for connection with AUT_CMD of SFT_AWI)	BOOL	FALSE	O	
AUTCMDEN	1= Execute automatic command (for connection with AUTCMDEN of SFT_AWI)	BOOL	FALSE	O	

Table 4-38 CFC – Connections of CMD_AWI

4.3 MOD_SIWA (FB648)

4.3.1 Area of application

The block acts as the interface of a Siwarex scale module for the PCS 7 maintenance station

4.3.2 Calling OBs

Timed interrupt OB, in which you install the block (e.g. OB32). The block must also be installed in the following OBs in the run sequence (carried out automatically in CFC):

OB100 Restart

4.3.3 Use in CFC

The CFC function "Generate module drivers" automatically:

- Installs the MOD_SIWA block in its runtime group at the blocks named above, downstream from the RACK block runtime group
- Configures the inputs SLOT, RACK_NO, SUBN1_ID, SUBN2_ID
- Interconnects

  - inputs PERAF, MODF and RACKF are connected to outputs QPERAF, QMODF and QRACKF of the corresponding MOD_1-block

  - inputs PARF and PA_DIAG are connected to outputs QPARF und ODIAG of the corresponding Siwarex driver block

4.3.4 Function

The block forms the maintenance state (MS) for the Siwarex module and sends the corresponding messages to WinCC.

MS	Condition
0, good	No error
7, maintenance; need high	Module removed/defective (MODF = 1) or Module not operative (PA_DIAG = 16#0100)
8, uncertain	Rack error (RACKF = 1)

Table 4-39 Maintenance-States of CMD_AWI

4.3.5 Message text and message class assigned to the block parameters

Message block ALARM_8P	Message no.	Block parameter	Default message text	Message class
EV_ID	1	QMODF	Device @1%d@/ @2%d@/ @3%d@: Withdrawn	S
	2	QPARF	Device @1%d@/ @2%d@/ @3%d@: Configuration error	S
	3	QPERAF	Device @1%d@/ @2%d@/ @3%d@: Access error	S
	4	QMOD_ERR	Device @1%d@/ @2%d@/ @3%d@: bad, maintenance alarm	S

Table 4-40 CFC Message texts of MOD_SIWA

4.3.6 Assignment of associated values to the block parameters of MOD_SIWA

Message block ALARM_8P	Message no.	Block parameter	Meaning
EV_ID	1	SUBN1_ID	Number DP master system
	2	RACK_NO	Subassembly support/station number
	3	SLOT_NO	Slot number

Table 4-41 CFC associated values of MOD_SIWA

4.3.7 I/Os von MOD_SIWA

Connection (Parameter)	Meaning	Data type	Default setting	Type	O&O
CH_EXIST	Channel available	DWORD	0	O	+
CH_OK	Channel OK	DWORD	0	O	+
EN_MSG	1 = Message cleared	BOOL	TRUE	I	
EV_ID	Message number		DWORD	0	I
MODF	1 = Module removed/defective	BOOL	FALSE	I	
MS	Maintenance status		DWORD	0	I
MSG_ACK	Message acknowledgement		WORD	0	O
MSG_STAT	Message error information		WORD	0	O
O_MS	Maintenance status		DWORD	0	O
PA_DIAG	PA diagnostic information	DWORD	0	I	
PARF	1 = Peripheral access error	BOOL	FALSE	I	
PERAF	1 = Peripheral access failure	BOOL	FALSE	I	

QERR	1 = Error	BOOL	FALSE	O	
QMODF	1 = Module removed/defective	BOOL	FALSE	O	
QMSG_SUP	1 = Message suppression active	BOOL	FALSE	O	+
QMSGERR	1 = Message error	BOOL	FALSE	O	
QMOD_ERR	1 = Siwarex module error	BOOL	FALSE	O	
QPARF	1 = Parameterization failure	BOOL	FALSE	O	
QPERAF	1 = Peripheral access error		BOOL	FALSE	O
RACK_NO	1 = Subassembly support/station error			BYTE	0
RACKF	Subassembly support number	BOOL	FALSE	I	
RUNUPCYC	1 = Subassembly support/station error	INT	10	I	
SLOT_NO	Initialization cycles	BYTE	0	I	
SUBN1_ID	Slot number		BYTE	16#FF	I
SUBN2_ID	Number of the primary DP master system		BYTE	16#FF	I

Table 4-42 CFC – connections of MOD_SIWAI

5 Description of the Faceplates

5.1 General

Operation and monitoring of the scale via WinCC faceplates is described below.

Descriptions of the individual scales parameters and scale functions are provided in the SIWAREX FTA manual and are not explained individually where each faceplate is displayed.

The example faceplate for the SIWAREX FTA modules was created with the Faceplate Designer from PCS7 version 6.1. The WinCC images and scripts that are created can be modified according to individual requirements.

Every time a new view is opened, the displayed parameters are read. Data is not reread when tabs within a view are switched. Data can be updated at any time by clicking the "Receive Data" button.

Note: After translateing the OS the OS project editor has to be called once. The OS part of the PCS7 installation has to be installed on all OS and OS server that have to deal with the Siwarex FTA Faceplates.

5.2 Calling Up Faceplates

The process for calling up faceplates can be configured in the Graphics Designer (Dynamic Wizard -> Picture Functions -> Picture selection via measurement point). The faceplates themselves can be called up via the Typical provided.

2 different typicals are available, one with weight display and a second with silo and weight display.

Fig 5-1 Typical with silo and weight display

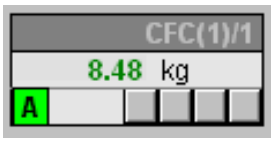

Fig 5-2 Typical with weight display

The Typical is defined in CFC SFT_AWI. A checkmark is set against "Create block icon" in CFC properties. The Typical is defined in the field underneath:

Blank, 1 : Typical with silo and weight display

2 : Typical with weight display

0, > 2 : no Typical

The selection is imported into the OS through OS compilation.

5.3 Faceplate Display in OS

All views of the sample faceplate including their functions are shown in the following sections.

5.3.1 Standard View

The standard view displays the current net weight of the scales and a number of selected statuses. The Manual/Automatic operating modes can also be switched.

In automatic mode, only reading of data records is permitted.

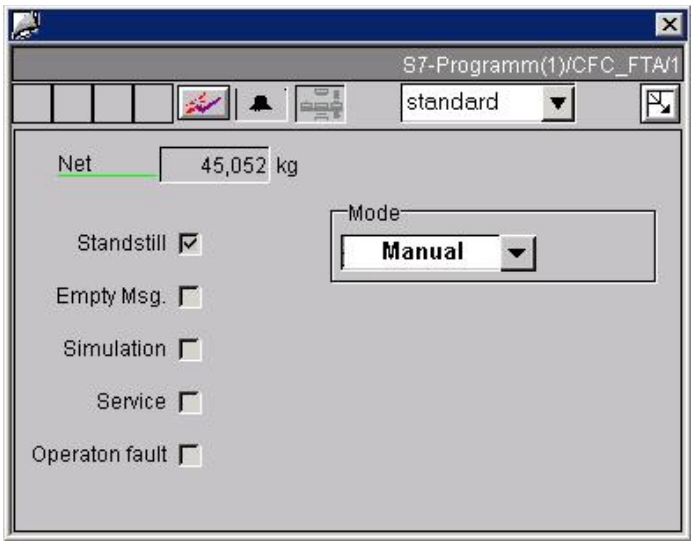

Fig 5-3 Standard view for SIWAREX FTA

5.3.2 Dosing View

The set weight (DS20) and the scale parameters 1 (DS22) can be specified for forthcoming weighing procedures in the Dosing Data tab displayed in the Dosing view.

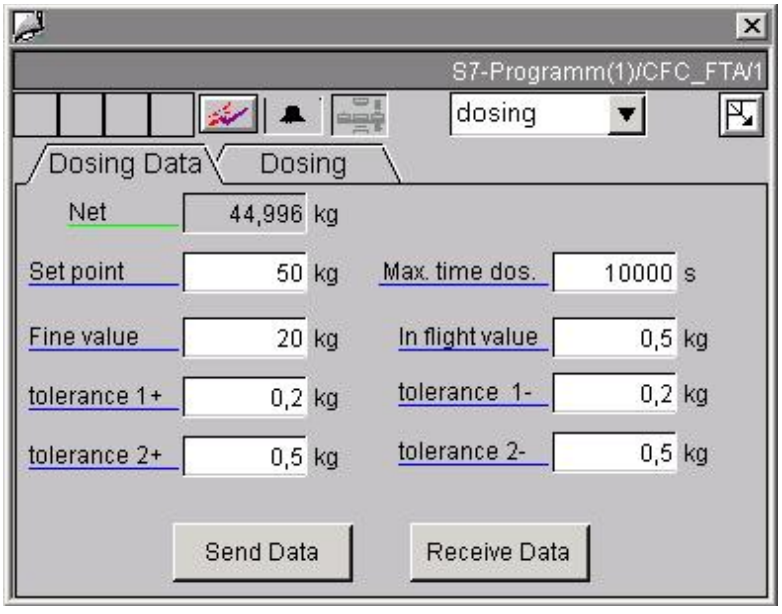

Fig 5-4 Dosing data view

The net weight, set weight and selection of scale statuses relevant to dosing are displayed in the Dosing tab.

The following dosing and scale commands can be issued via the faceplate.

Dosing Commands:

- Stop dosing
- Start with tare/zeroing
- Start without tare/zeroing
- Continue
- Continue with inching
- Abort
- Rest weighing

Weighing commands:

- Set to zero
- Tare
- Delete tare memory

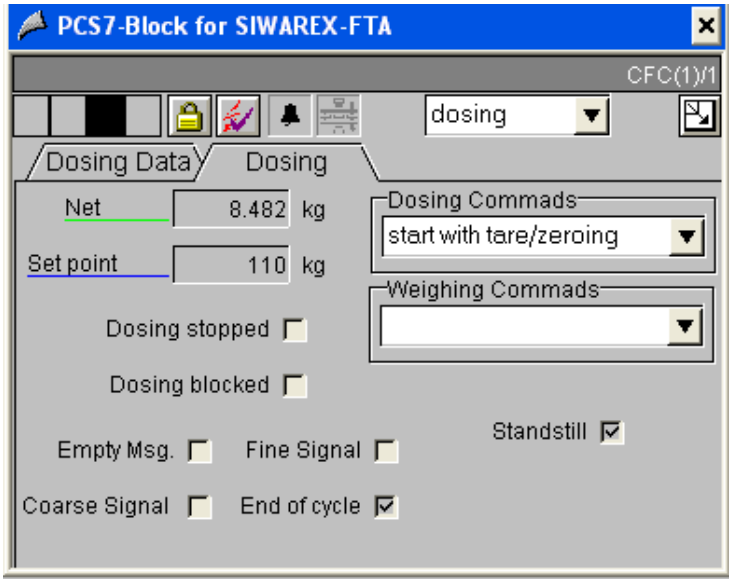

Fig. 5-5 Dosing data view

5.3.3 Service view

There are several service views. Editing the data for all service views enables scale adjustment from the OS. Core parameters for data records 3 (adjustment

parameters) and 4 (basis parameters) are set in the Calibration 1, Calibration 2 and Baseparam. tabs. Adjustment and scale commands can be issued in the Operation tab.

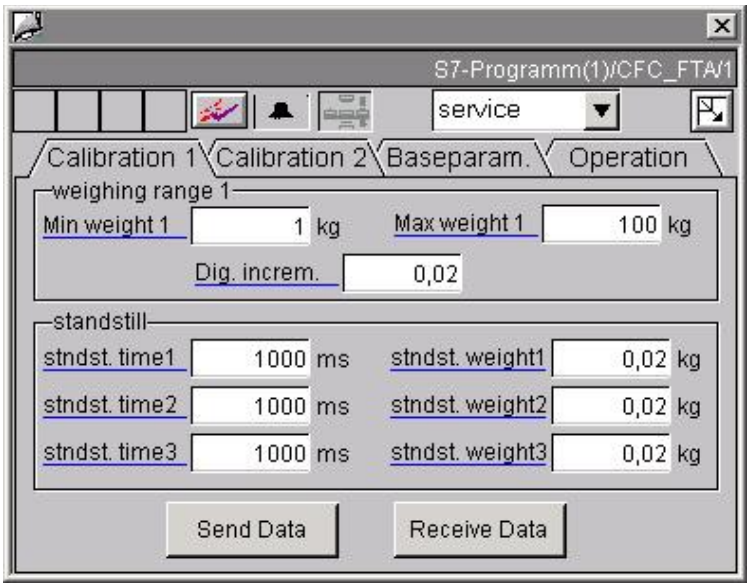

Fig. 5-6 View calibration parameter 1

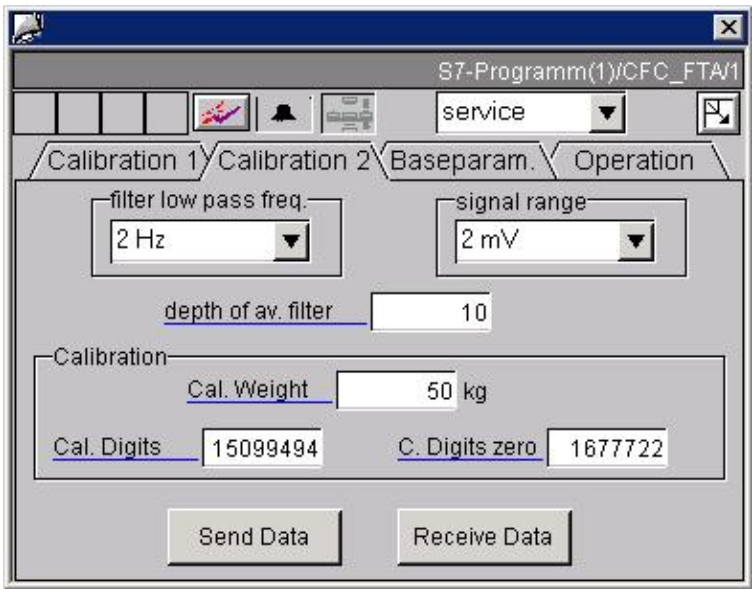

Fig. 5-7 View calibration parameter 2

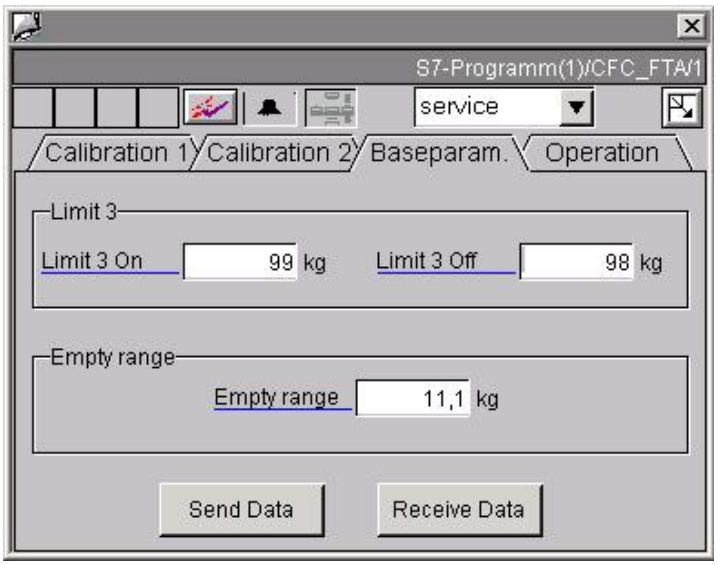

Fig. 5-8 View basisparameter

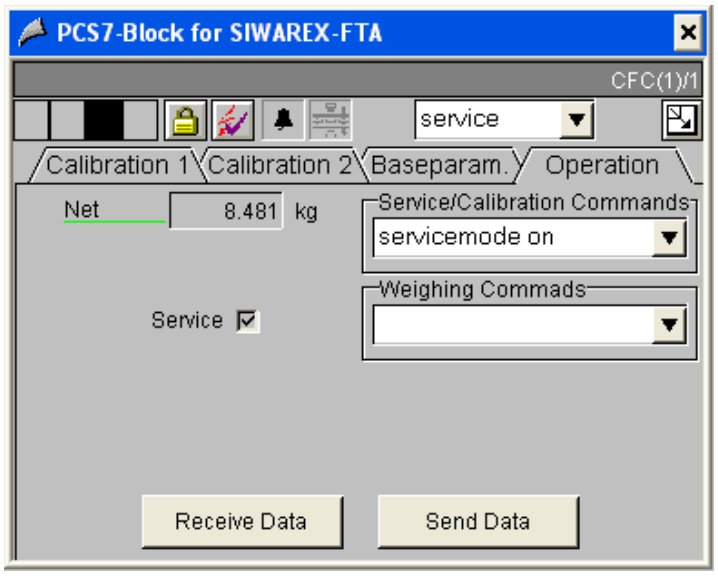

Fig. 5-9 View operation

The following commands can be issued in this view.

Service/Calibration commands:

- Servicemode on
- Servicemode off
- Zeroweight valid

- Adjustmentw. 1 valid
- Acknowledge arror

Weighing commands:

- Set to zero
- Tare
- Delete tare memory

5.4 Faceplate creation

Mainly, those standard items that are described in the documentation on the Faceplate Designer and that have been delivered with the Faceplate Designer are used. This description concentrates on the features that have been implemented for the SIWAREX FTA Faceplate.

Tabs

To help clarify matters, two Faceplate view with up to 4 tabs have been shown in different images. Switching between the tabs is done using function „SH6_ChangeView_tab.fct“. Each tab must have the name of the image that it is calling.

Reading data record during selection of faceplate view

A command to read data displayed in the faceplate view is always issued for the FP_CMD manual input when a new view is added in the faceplate. The function block copies the value from FP_CMD to the MAN_CMD manual input when no other command (MAN_CMD=0) is present here. This prevents any potential commands pending at the MAN_CMD input from being overwritten when the view in the faceplate is changed.

The button used to read data is inactive while a data record is being read, in order to indicate this.

Operating authorization

In every view, an element having the name „Level5_MODE“ or „Level6_MODE“ is found. These elements do not only the enable operating authorization from the User Administrator but they also deny operating authorization in Automatic operating mode. This is done with function „SH6_CheckPermission_Plus.fct“, which is called when the image is loaded and when the operating mode is changed. Passing the operating mode to the individual elements is performed through direct connections.

Only the Manual-Automatic switch with the "single operating authorization" (level5) can be used with the default settings. All other operations require the "higher value operating authorization“ (level6).

Combo-boxes with several entries

Various combo-boxes have 3 or more entries. These combo-boxes are described further using an example of the combo-box for the dosing commands.

With a mouse click on the combo-box, the image „@PG_SFT_AWI_SCROLL_DOSEING.pdl“ is opened:

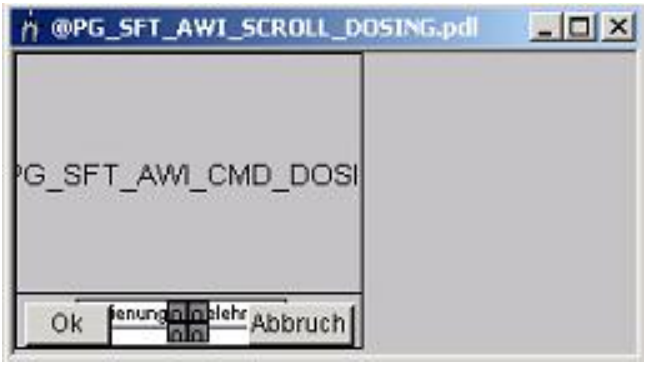

Fig. 5-10 Combobox with several entries

The image „@PG_SFT_AWI_SCROLL_DOSEING.pdl“ is based on the „@FPD_BedAnalog.PDL“ image. The main difference is that the analog value is not entered in the IO-field, instead, a command which has an analog value assigned as the command code is selected. The commands are listed in individual text fields in the image @PG_SFT_AWI_CMD_DOSING.pdl“:

Fig. 5-11 Command selection

While selecting a command with the mouse, the command code is written into the IO-field "Value" of the „@PG_SFT_AWI_SCROLL_DOSEING.pdl“ image. If the output value „Value“ is changed then the transmitted command is highlighted in colour and the respective command code is transferred to the block with „OK“.

6 Configuration Example

One of the sample projects in SIMATIC Manager is the zXy70_02_SIWAREX_FTA project; this allows a PCS7 configuration for SIWAREX FTA to be quickly and easily established through several adjustments to its own environment. The example is applicable to two scales. For instance, SFT_AWI is configured for one scale, while SFT_AWI in conjunction with CMD_AWI is configured for the other.

For the project to be adapted, the following must be carried out in particular:

- the hardware configuration must be adapted
- connections must be secured
- suitable addresses must be configured on SFT_AWI.

7 Abbreviations

AS	Automation system
CFC	Continuous Function Chart (PCS7)
DO	Digital output
DI	Digital input
DR	Data record
FC	STEP7 Function call
FB	Function block
HSP	Hardware Support Package
HW	Hardware
OS	Operator Station
PC	Personal-Computer
SFC	System Function Call (System function)
SIWATOOL	Windows-Software Commissioning and Service of SIWAREX FTA