Automated Precision Weighing
SIWAREX FTA

**PBK9/PFK9-APW Weigh Platforms
with SIWAREX FTA**

METTLER TOLEDO

1   Introduction

PBK9/PFK9-APW weigh platforms are developed for operation in automated plants, where high precision weighing is needed. These weighing platforms provide an option for direct connection to the SIWAREX FTA weighing system by Siemens. Thus, highly accurate control weighing and dosing appllications can be realized with a sensitivity of 0.01 g. This document describes the steps for commissioning and operation of this system.

2   Installation

Connection between PBK/PFK-APW and SIWAREX is done via RS485 interface. The configuration looks as follows:
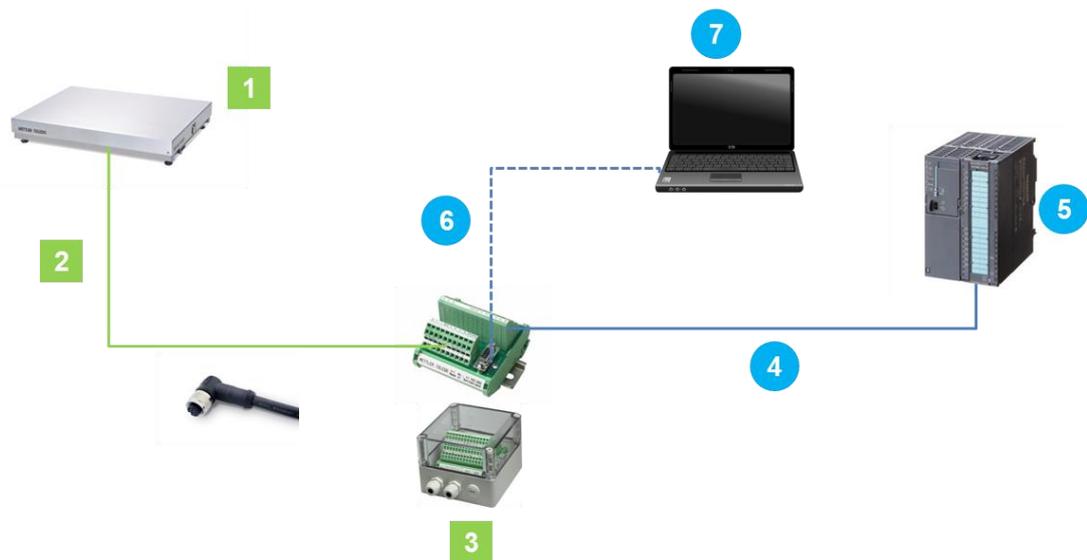
■ METTLER TOLEDO product

● 3rd party product

Position	Item	Description
1	PBK/PFK-APW weighing platform	Various models available
2	Connection cable (Data + Power)	M12 connector with 12 pins at the weigh platfrom side / Open ends at the terminal strip side
3	ConBlock or ConBlock IP66	Terminal strip with RS232 service interface and status LEDs used for easy wiring
4	RS485 data cable	For the connection with SIWAREX FTA
5	SIWAREX FTA (≥ V9.5.2)	Calibratable weighing electronics for SIMATIC S7, C7 and PCS7
6	RS232 data cable	Service interface of ConBlock for Configuration
7	PC or laptop	For service or configuration on the weighing platform

Connection between the weighing platform and SIWAREX FTA is according to the below diagram:
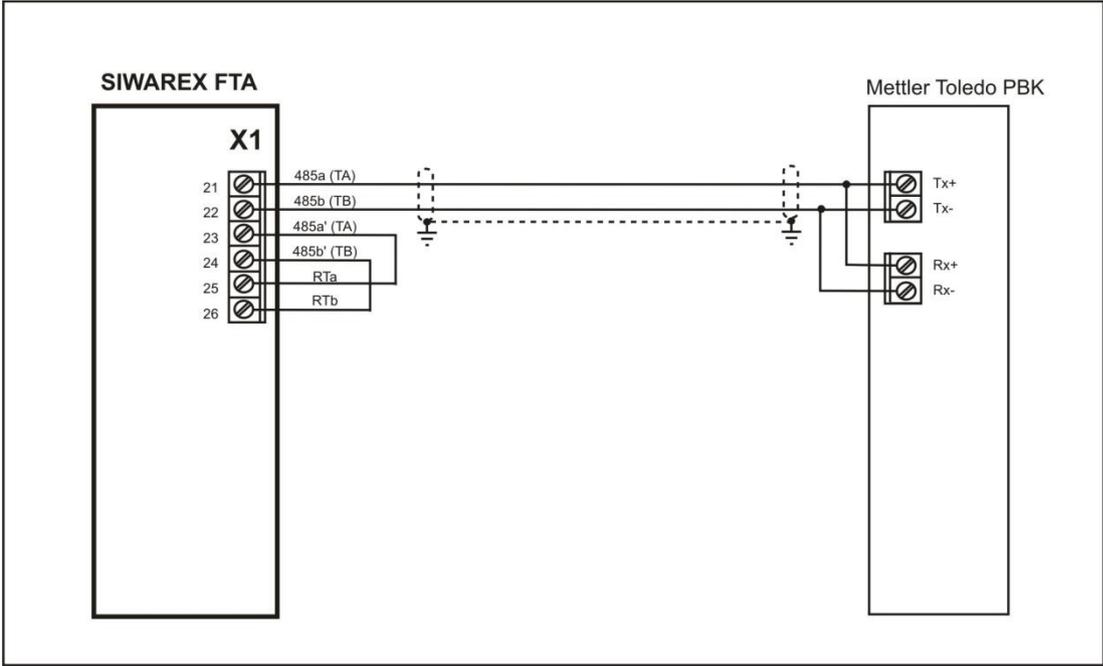
Following terminals need to be connected at SIWAREX FTA:

Terminal	Signal	Wire colors	Description
X1.21	485a (TA)	Purple Violet	Input Ta
X1.22	485b (TB)	Orange Black	Input Tb
X1.23	485a' (TA)	Connected with RTa	Output Ta
X1.24	485b' (TB)	Connected with RTb	Output Tb
X1.25	RTa	Connected with 485a'	Termination resistor RTa
X1.26	RTb	Connected with 485b'	Termination resistor RTb

For the RS485 configuration, the following signals must be connected together at the ConBlock:

A-: Tx– and Rx–

B+: Tx+ and Rx+

The pin assignment of the weighing platform and wire colors with respective signals are given in the table below:

Connector M12	Pin	Signal		Cable color *
	1	V DC in		White
	2	GND in		Brown
	3	GND in		Green
	4	TXD (RS232)		Yellow
	5	RTS (RS232)		Gray
	6	RXD (RS232)		Pink
	7	CTS (RS232)		Blue
	8	GND (RS232)		Red
	9	TX+ (RS422)	B+ (RS485)	Orange
	10	TX– (RS422)	A– (RS485)	Purple
	11	RX+ (RS422)	B+ (RS485)	Black
	12	RX– (RS422)	A– (RS485)	Violet
	Shield			Braid
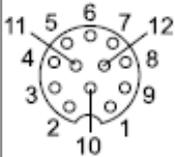
* Cable color of the METTLER TOLEDO standard cables.

3 Configuration

For SIWAREX FTA as of firmware V9.5.2, parameters in the data set 3 and 7 must be adjusted as follows:

Data Record	Parameter	Value
DR3	Type of Load Cell	METTLER-TOLEDO
DR7	RS485-Baudrate	38`400
DR7	RS485-Parity	Even
DR7	RS485-Data-Bits	7
DR7	RS485-Stop-Bits	1

For the weighing platform, following parameters need to be configured:

Parameter Value	Description
M103 1 2	Configure the communication interface of the weighing platform as "RS485 mode (half-duplex)"
COM 1 8 0 0	Configure the communication interface of the weighing platform as follows: ▪ 38400 bits per second ▪ 7 data bits / even parity / 1 stop bit ▪ No handshake
M68 0	Keep the parameters of the communication interface permanently stored, such that they are not reset to factory defaults after a power cycle
M44 1 "SIR"	Automatically start continuous weight transmission over the communication interface after a power cycle

These commands become active first after a power cycle. You can find more information in MT-SICS manual (11781363K). All parameter configurations can be done over the service interface (RS232) with APW-Link™ Software. Free download is possible with registration at: www.mt.com/apw-link

4   Supported METTLER TOLEDO Products

Product Picture	Product Name	Firmware Version	SIEMENS SIWAREX WP231 V3.0.4	SIEMENS SIWAREX FTA V9.5.2
	WMS www.mt.com/WMS	V1.31 and higher		✔
	PBK9-APW www.mt.com/PBK9	V2.4.0 and higher	✔	✔
	PFK9-APW www.mt.com/PFK9	V2.4.0 and higher	✔	✔
	SLF6 www.mt.com/SLF6	V2.4.0 and higher	✔	✔

5 Appendix

5.1 Other Applicable Documents

[1]   METTLER TOLEDO, Reference Manual, Standard Interface
        Command Set (11781363K)
[2]   METTLER TOLEDO, Installation Manual PBK9 bench scales
        (30233012A)
[3]   METTLER TOLEDO, Installation Manual PFK9 floor scales
        (30233015A)
[4]   Siemens, Siwarex FTA, Device Manual

All METTLER TOLEDO documentation can be found at the following
web sites in the respective documentation tabs:

www.mt.com/PBK9
www.mt.com/PFK9

www.mt.com

For more information