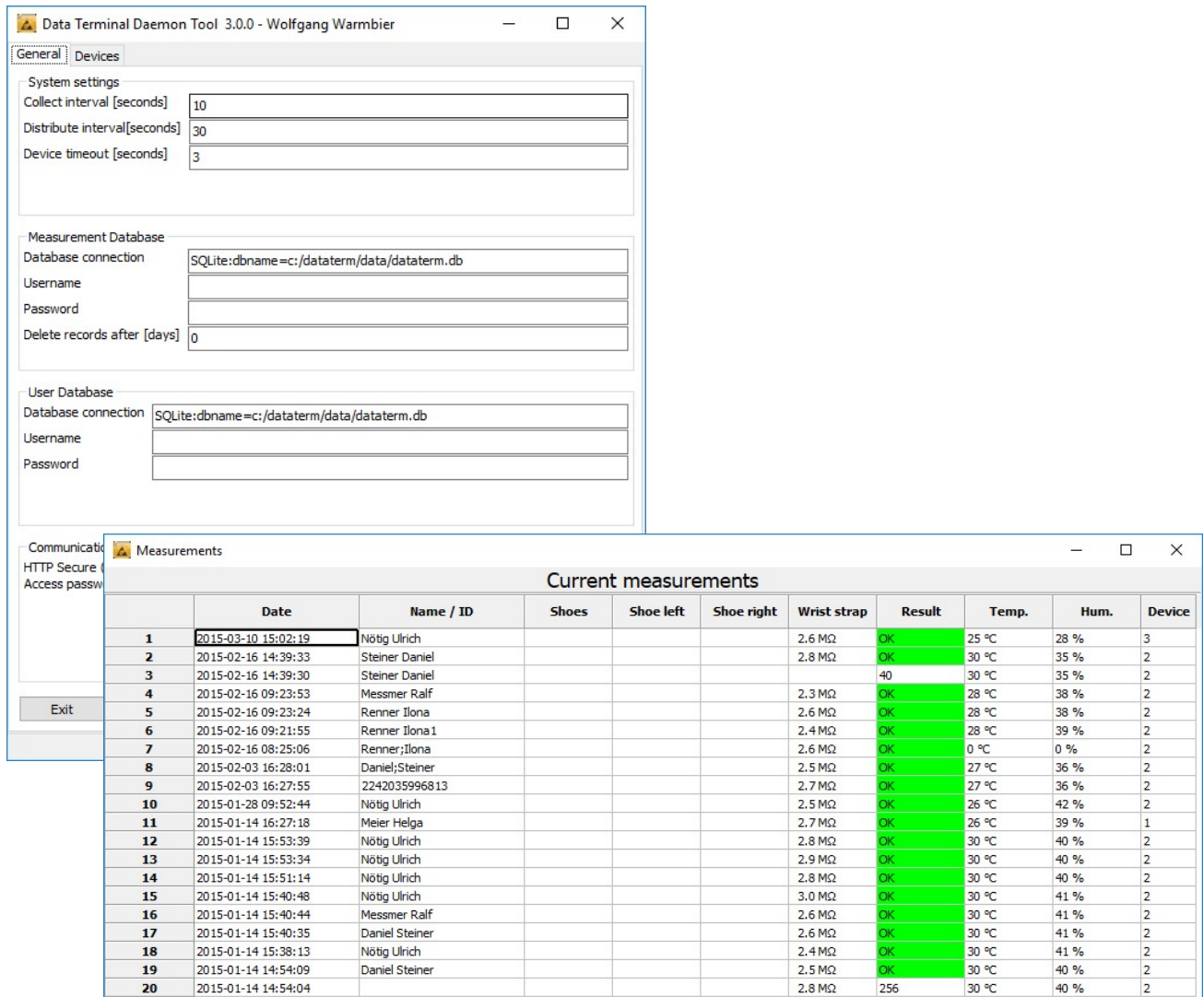


User's Manual



The screenshot shows the 'Data Terminal Daemon Tool 3.0.0 - Wolfgang Warmbier' application. It has two main windows: 'General' and 'Measurements'.

General Window:

- System settings:** Collect interval [seconds] = 10, Distribute interval[seconds] = 30, Device timeout [seconds] = 3.
- Measurement Database:** Database connection = SQLite:dbname=c:/dataterm/data/dataterm.db, Username =, Password =, Delete records after [days] = 0.
- User Database:** Database connection = SQLite:dbname=c:/dataterm/data/dataterm.db, Username =, Password =.

Measurements Window:

Current measurements

	Date	Name / ID	Shoes	Shoe left	Shoe right	Wrist strap	Result	Temp.	Hum.	Device
1	2015-03-10 15:02:19	Nötig Ulrich				2.6 MΩ	OK	25 °C	28 %	3
2	2015-02-16 14:39:33	Steiner Daniel				2.8 MΩ	OK	30 °C	35 %	2
3	2015-02-16 14:39:30	Steiner Daniel					40	30 °C	35 %	2
4	2015-02-16 09:23:53	Messmer Ralf				2.3 MΩ	OK	28 °C	38 %	2
5	2015-02-16 09:23:24	Renner Ilona				2.6 MΩ	OK	28 °C	38 %	2
6	2015-02-16 09:21:55	Renner Ilona1				2.4 MΩ	OK	28 °C	39 %	2
7	2015-02-16 08:25:06	Renner;Ilona				2.6 MΩ	OK	0 °C	0 %	2
8	2015-02-03 16:28:01	Daniel;Steiner				2.5 MΩ	OK	27 °C	36 %	2
9	2015-02-03 16:27:55	2242035996813				2.7 MΩ	OK	27 °C	36 %	2
10	2015-01-28 09:52:44	Nötig Ulrich				2.5 MΩ	OK	26 °C	42 %	2
11	2015-01-14 16:27:18	Meier Helga				2.7 MΩ	OK	26 °C	39 %	1
12	2015-01-14 15:53:39	Nötig Ulrich				2.8 MΩ	OK	30 °C	40 %	2
13	2015-01-14 15:53:34	Nötig Ulrich				2.9 MΩ	OK	30 °C	40 %	2
14	2015-01-14 15:51:14	Nötig Ulrich				2.8 MΩ	OK	30 °C	40 %	2
15	2015-01-14 15:40:48	Nötig Ulrich				3.0 MΩ	OK	30 °C	41 %	2
16	2015-01-14 15:40:44	Messmer Ralf				2.6 MΩ	OK	30 °C	41 %	2
17	2015-01-14 15:40:35	Daniel Steiner				2.6 MΩ	OK	30 °C	41 %	2
18	2015-01-14 15:38:13	Nötig Ulrich				2.4 MΩ	OK	30 °C	41 %	2
19	2015-01-14 14:54:09	Daniel Steiner				2.5 MΩ	OK	30 °C	40 %	2
20	2015-01-14 14:54:04					2.8 MΩ	256	30 °C	40 %	2

DataTermD

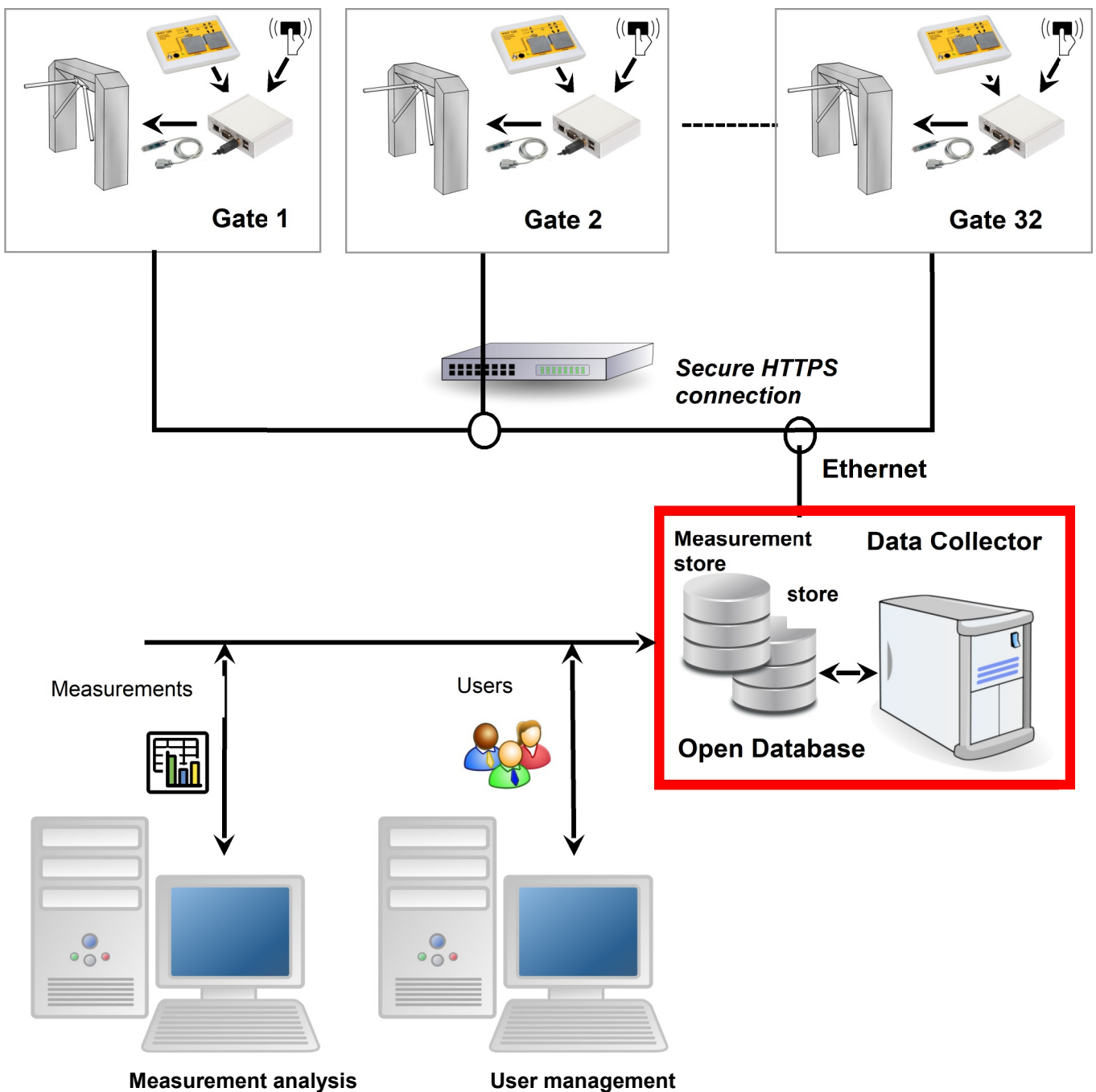
Software V3.0.0

Wolfgang Warmbier GmbH & Co. KG
 Systeme gegen Elektrostatik
 Untere Gießwiesen 21
 D-78247 Hilzingen

www.warmbier.com

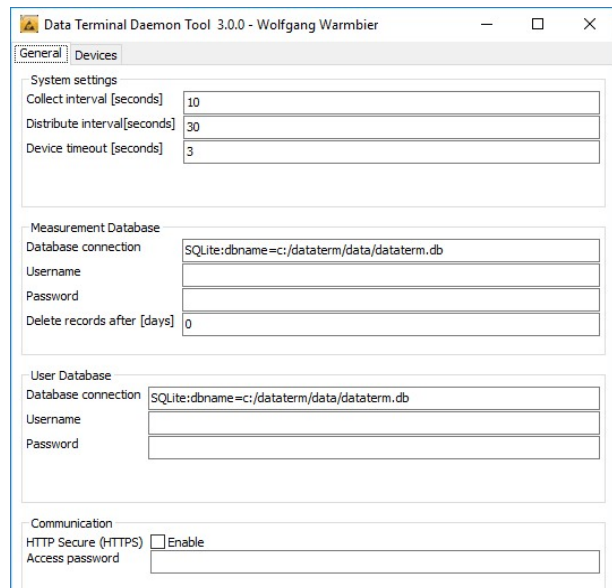
Overview

- The Data Terminal in combination with PGT120.COM collects ESD tests measurement data
- User identification with any USB HID input device (RFID, barcode, magnetic card, keyboard)
- Optional USB relay to trigger a turnstile
- Central data collecting and control server synchronizes measurement data and access control
- Open database interface for connecting customer systems



DataTermD is the service which runs on a server, called "Data Collector" in this example. **DataTermC** is the configuration program for this service with graphical user interface. The service collects measurement data of the configured devices and distributes user data and access policies on top of the user- and measurement database. The device communication can be established via secure HTTPS connection. After installation and device configuration the software is ready to use and stores the data in an internal SQLite database. The customer can even select his own database if required. In this case the administration is the customer's duty. You can find the database definitions below in section **Database connection** and **Database definition**.

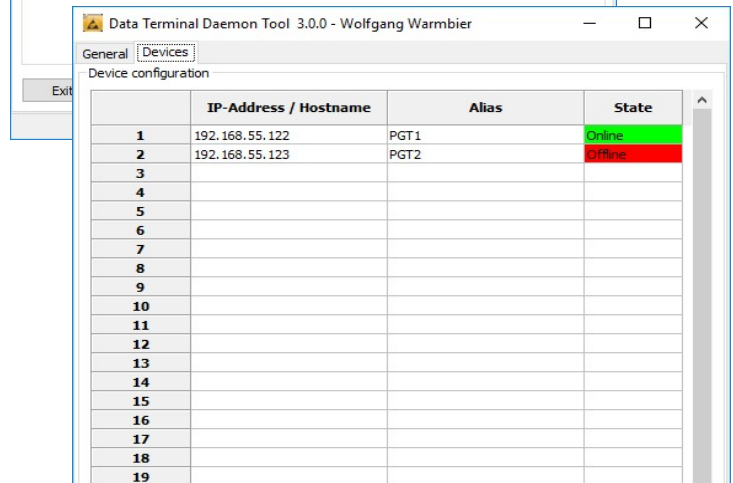
Collect interval for measurements and user data.



The screenshot shows the 'General' tab of the 'Data Terminal Daemon Tool 3.0.0' configuration window. It includes sections for 'System settings' (Collect interval, Distribute interval, Device timeout), 'Measurement Database' (Database connection, Username, Password, Delete records after), 'User Database' (Database connection, Username, Password), and 'Communication' (HTTP Secure checkbox, Access password).

Database connection configuration, Connection to customer database possible

Secure communication to the device

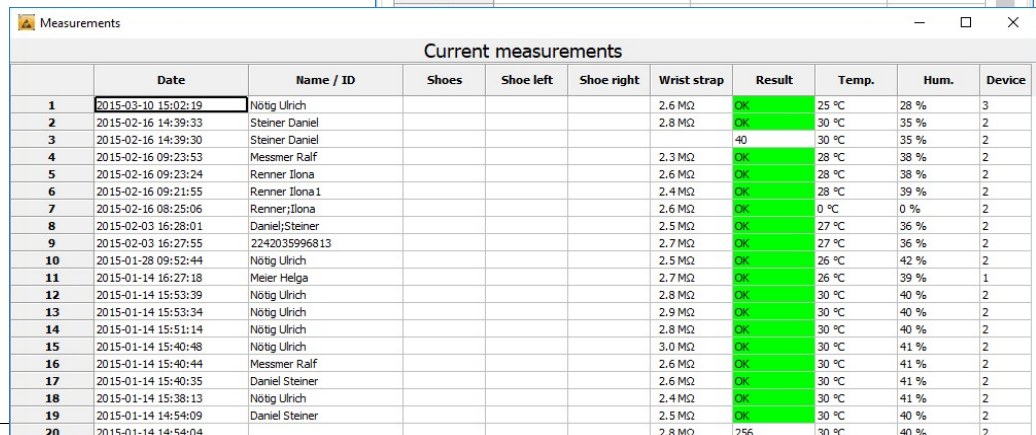


The screenshot shows the 'Devices' tab of the configuration window, displaying a table of device configurations.

	IP-Address / Hostname	Alias	State
1	192.168.55.122	PGT1	Online
2	192.168.55.123	PGT2	Offline
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

Device configuration and status

Quick overview of the last 20 measurements



The screenshot shows the 'Measurements' window with a table of 'Current measurements'.

	Date	Name / ID	Shoes	Shoe left	Shoe right	Wrist strap	Result	Temp.	Hum.	Device
1	2015-03-10 15:02:19	Nötig Ulrich				2.6 MΩ	OK	25 °C	28 %	3
2	2015-02-16 14:39:33	Steiner Daniel				2.8 MΩ	OK	30 °C	35 %	2
3	2015-02-16 14:39:30	Steiner Daniel					40	30 °C	35 %	2
4	2015-02-16 09:23:53	Messmer Ralf				2.3 MΩ	OK	28 °C	38 %	2
5	2015-02-16 09:23:24	Renner Ilona				2.6 MΩ	OK	28 °C	38 %	2
6	2015-02-16 09:21:55	Renner Ilona1				2.4 MΩ	OK	28 °C	39 %	2
7	2015-02-16 08:25:06	Renner,Ilona				2.6 MΩ	OK	0 °C	0 %	2
8	2015-02-03 16:28:01	Daniel;Steiner				2.5 MΩ	OK	27 °C	36 %	2
9	2015-02-03 16:27:55	2242035996813				2.7 MΩ	OK	27 °C	36 %	2
10	2015-01-28 09:52:44	Nötig Ulrich				2.5 MΩ	OK	26 °C	42 %	2
11	2015-01-14 16:27:18	Meier Helga				2.7 MΩ	OK	26 °C	39 %	1
12	2015-01-14 15:53:39	Nötig Ulrich				2.8 MΩ	OK	30 °C	40 %	2
13	2015-01-14 15:53:34	Nötig Ulrich				2.9 MΩ	OK	30 °C	40 %	2
14	2015-01-14 15:51:14	Nötig Ulrich				2.8 MΩ	OK	30 °C	40 %	2
15	2015-01-14 15:40:48	Nötig Ulrich				3.0 MΩ	OK	30 °C	41 %	2
16	2015-01-14 15:40:44	Messmer Ralf				2.6 MΩ	OK	30 °C	41 %	2
17	2015-01-14 15:40:35	Daniel Steiner				2.6 MΩ	OK	30 °C	41 %	2
18	2015-01-14 15:38:13	Nötig Ulrich				2.4 MΩ	OK	30 °C	41 %	2
19	2015-01-14 14:54:09	Daniel Steiner				2.5 MΩ	OK	30 °C	40 %	2
20	2015-01-14 14:54:04	Daniel Steiner				2.8 MΩ	256	30 °C	40 %	2

Software Installation

System requirements

PC, Server or Virtualisation with at least:

- Windows 7 (32- Bit / 64-bit)
- 100 MB free disk space
- Ethernet interface

Install the software by running **dataterm_setup.exe**. The default destination is c:\dataterm. After installation the script **install_service.bat** is executed, this registers and runs datatermd.exe as a Windows service. The service is running in background and synchronizes measurement and user data to the configured devices.

Optional:

Alternatively you can run the service with parameter **--user**, **--run** and **--create** from the command-line. Parameter **--user** enables the user management

Parameter **--run** executes the program once. This can be used to run the program from within Windows Task planer instead of installing it as a service.

For external databases parameter **--create** helps to create the initial database skeleton during the first run.(Use this option only if you don't want to maintain the database tables by your own)

Example:

```
c:\dataterm\datatermd.exe --user --run --create
```

Error and status messages are logged to the file datatermd.log.

For failure analysis you can run the program with option **--debug** from the command line to enable erbose logging.



Important:

Make sure the logged in user has write permission to the file **dataterm.cfg** in folder **data**. Otherwise the configuration settings can't be saved.

Database Connection

Two different database connections must be established for measurements users.
It is possible to use the same or different databases for it.
In the following example we use the same database for measurement and user data.

Following database connections are possible:

■ Default (no configuration required)

After installation the program uses the internal SQLite Database with common file for measurements and users.

Measurement database	SQLite:dbname=C:/dataterm/data/dataterm.db
User database	SQLite:dbname=C:/dataterm/data/dataterm.db
Username	<empty>
Password	<empty>

■ MySQL

This establishes a connection to an external MySQL database.
Name of the measurement and user database is **dataterm** in this example. The database is on the server **host.company.com** and listens on **Port 3306**.

Measurement database	mysql:database=dataterm;host=host.company.com;port=3306
User database	mysql:database=dataterm;host=host.company.com;port=3306
Username	<User>
Password	<Password>

■ MS-SQL(EXPRESS)

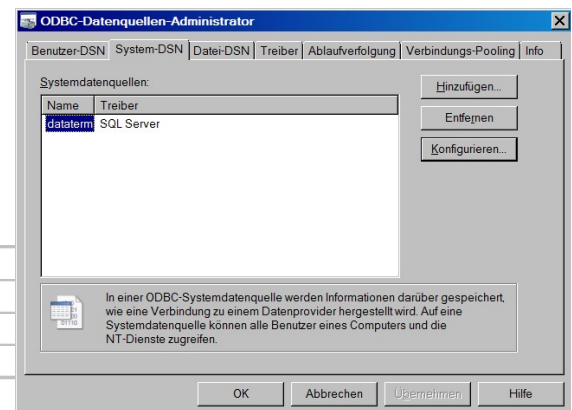
This establishes a connection to an external Microsoft SQL database.
Name of the measurement and user database is **dataterm** in this example. The Microsoft SQL-Express Database is on the server **SERVERNAME** and listens on **Port 1433**.

Measurement database	ODBC:Driver={SQL Server}; Server=SERVERNAME\SQLEXPRESS;Database=dataterm;port=1433
User database	ODBC:Driver={SQL Server}; Server= SERVERNAME \SQLEXPRESS;Database=dataterm;port=1433
Username	<User>
Password	<Password>

Alternative with DSN:

This connection requires a 32 Bit ODBC system datasource.
Use the 32 Bit ODBC-Administration from
C:\Windows\SysWOW64\odbcad32.exe for configuration.
Create a System-DNS with arbitrary name i.e. **dataterm**
in this example.

Messdatenbank	ODBC:DSN=dataterm
Benutzer-datenbank	ODBC:DSN=dataterm
Benutzername	<Benutzer>
Passwort	<Passwort>



This procedure should also work with different databases with ODBC support.

Database Definition

Table - userdata

			SQLite	MS-SQL	MySQL
id	Primary key		integer	bigint	bigint
access	Device identification	String - max. 30 characters	text	varchar(30)	varchar(30)
userid	User-ID	String - max. 30 characters (ASCII 32-127)	text	varchar(30)	varchar(30)
name	Name	String - max. 30 characters	text	varchar(30)	varchar(30)
fname	First name (optional)	String (together with "name" max. 30 characters)	text	varchar(30)	varchar(30)
profile	Measure profile		integer	bigint	bigint
print	Label print		integer	bigint	bigint

ID: Primary key of the table is not used further.

ACCESS: Access permissions: Comma separated list of allowed devices. The declaration of ranges is allowed i.e. (1,2,3-10)

USERID: Unique value for the user.

NAME: Text field to hold the name of the user, a user number or similar. If the name begins with * the service-access is active (access even if measurement values are out of range)

FNAME: Is optional, can contain the first name or additional text. Internally it is combined together with the field NAME to field USERNAME. The maximum length together with field NAME is 30 characters.

PROFILE: 0 = OR (Arbitrary measurement) 1 = Shoe test mandatory
2 = Wrist test mandatory 3 = (AND) Shoe & Wrist test mandatory

PRINT: 0 = No label print for this user 1 = Print label for this user

Table - measdata

			SQLite	MS-SQL	MySQL
id	Primary key		integer	bigint	bigint
device	device identification	Positive number	integer	int	int
unixdate	Timestamp in Unix time	Positive number	integer	bigint	bigint
datetime	Date	YYYY-MM-TT HH:MM:SS	datetime	varchar(30)	datetime
rsg	Measurement value Footwear Series (kOhm)	Positive number	integer	int	int
rsl	Measurement value Left shoe (kOhm)	Positive number	integer	int	int
rsr	Measurement value Right shoe (kOhm)	Positive number	integer	int	int
rhg	Measurement value Wrist strap (kOhm)	Positive number	integer	int	int
erg	'OK' or failure code	String - max. 3 characters	text	varchar(3)	varchar(3)
msg	Message text of the terminal <i>See Appendix A</i>	String - max. 100 characters	text	varchar(100)	varchar(100)
userid	User-ID of the reader	String - max. 30 characters (ASCII 32-127)	text	varchar(30)	varchar(30)
tmp	Temperature at measurement	Floating decimal point	real	float	float
hum	Humidity at measurement	Floating decimal point	real	float	float
username	Concatenated username	String - max. 30 characters	text	varchar(30)	varchar(30)

ID: Primary key of the table is not used further.

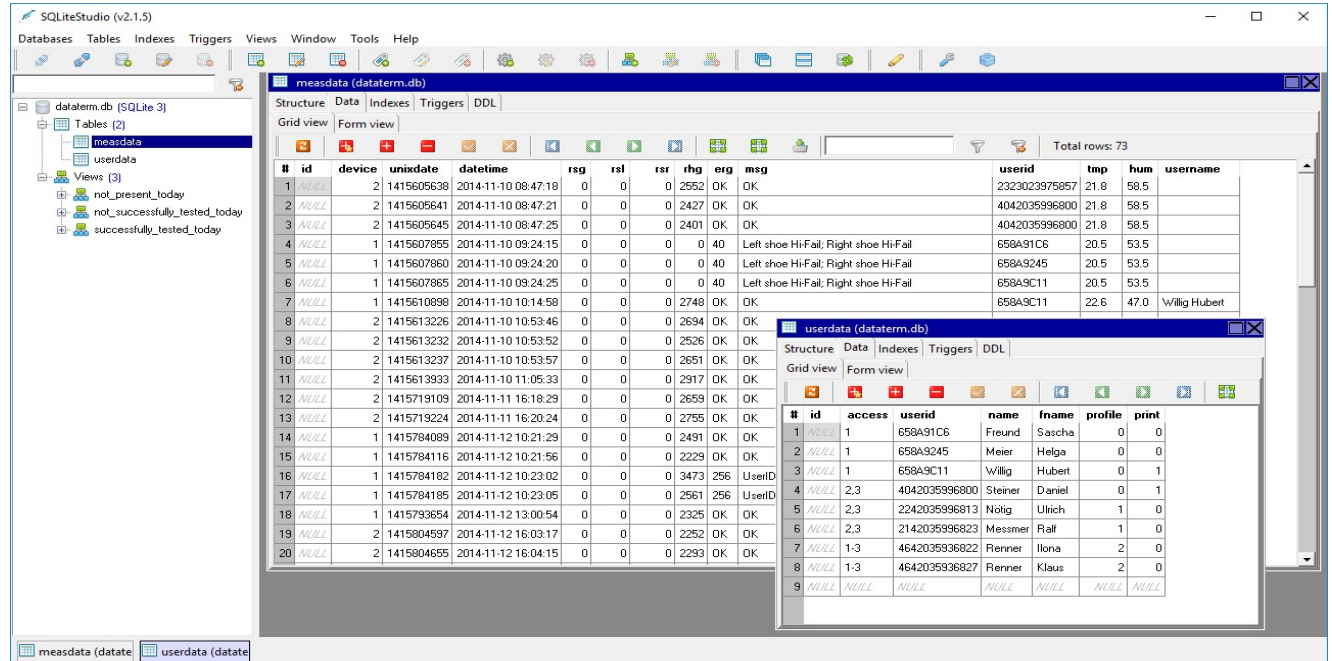
DEVICE: number of the device

UNIXDATE ,DATETIME: Time- and date stamp of the measurement

RSG,RSL,RSR,RHG: Measurement data
ERG: Result code of the measurement
MSG: Normal writing of the result code

Userdata Maintenance & Measurement View

After the installation the free tool SQLiteStudio can be found in the program directory. This program can be used to edit the SQLite database. The table **userdata** contains the personnel data.



The screenshot shows the SQLiteStudio interface with two tables displayed in grid view:

#	id	device	unidate	datetime	rsg	rsl	rsr	rhg	erg	msg	userid	tmp	hum	username
1	NULL	2	1415605638	2014-11-10 08:47:18	0	0	0	2552	OK	OK	2323023975957	21.8	58.5	
2	NULL	2	1415605641	2014-11-10 08:47:21	0	0	0	2427	OK	OK	4042035996800	21.8	58.5	
3	NULL	2	1415605645	2014-11-10 08:47:25	0	0	0	2401	OK	OK	4042035996800	21.8	58.5	
4	NULL	1	1415607855	2014-11-10 09:24:15	0	0	0	0	40	Left shoe Hi-Fail; Right shoe Hi-Fail	658A91C6	20.5	53.5	
5	NULL	1	1415607860	2014-11-10 09:24:20	0	0	0	0	40	Left shoe Hi-Fail; Right shoe Hi-Fail	658A9245	20.5	53.5	
6	NULL	1	1415607865	2014-11-10 09:24:25	0	0	0	0	40	Left shoe Hi-Fail; Right shoe Hi-Fail	658A9C11	20.5	53.5	
7	NULL	1	1415610898	2014-11-10 10:14:58	0	0	0	2748	OK	OK	658A9C11	22.6	47.0	Willig Hubert
8	NULL	2	1415613226	2014-11-10 10:53:46	0	0	0	2694	OK	OK				
9	NULL	2	1415613232	2014-11-10 10:53:52	0	0	0	2526	OK	OK				
10	NULL	2	1415613237	2014-11-10 10:53:57	0	0	0	2651	OK	OK				
11	NULL	2	1415613933	2014-11-10 11:05:33	0	0	0	2917	OK	OK				
12	NULL	2	1415719109	2014-11-11 16:18:29	0	0	0	2659	OK	OK				
13	NULL	2	1415719224	2014-11-11 16:20:24	0	0	0	2755	OK	OK				
14	NULL	1	1415784089	2014-11-12 10:21:29	0	0	0	2491	OK	OK				
15	NULL	1	1415784116	2014-11-12 10:21:56	0	0	0	2229	OK	OK				
16	NULL	1	1415784182	2014-11-12 10:23:02	0	0	0	3473	256	UserID				
17	NULL	1	1415784185	2014-11-12 10:23:05	0	0	0	2561	256	UserID				
18	NULL	1	1415793654	2014-11-12 13:00:54	0	0	0	2325	OK	OK				
19	NULL	2	1415804597	2014-11-12 16:03:17	0	0	0	2252	OK	OK				
20	NULL	2	1415804655	2014-11-12 16:04:15	0	0	0	2293	OK	OK				

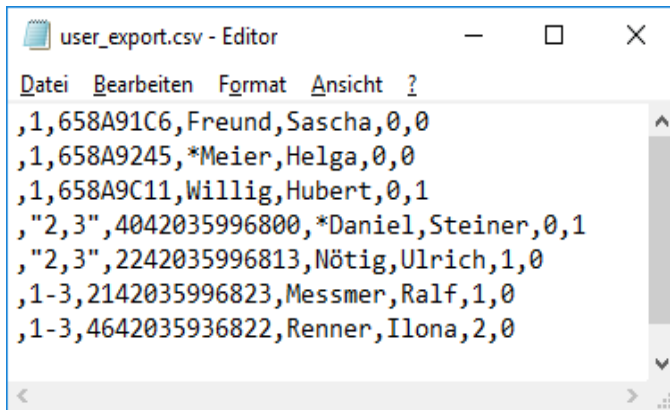
#	id	access	userid	name	fname	profile	print
1	NULL	1	658A91C6	Freund	Sascha	0	0
2	NULL	1	658A9245	Meier	Helga	0	0
3	NULL	1	658A9C11	Willig	Hubert	0	1
4	NULL	2,3	4042035996800	Steiner	Daniel	0	1
5	NULL	2,3	2242035996813	Nöbgl	Ulrich	1	0
6	NULL	2,3	2142035996823	Messmer	Falf	1	0
7	NULL	1-3	4642035936822	Renner	Ilona	2	0
8	NULL	1-3	4642035936827	Renner	Klaus	2	0
9	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Views can be used for SQL-queries i.e.:

- Show all users who have tested today
- Show all users who have tested successfully today
- Show all users who have not tested successfully today

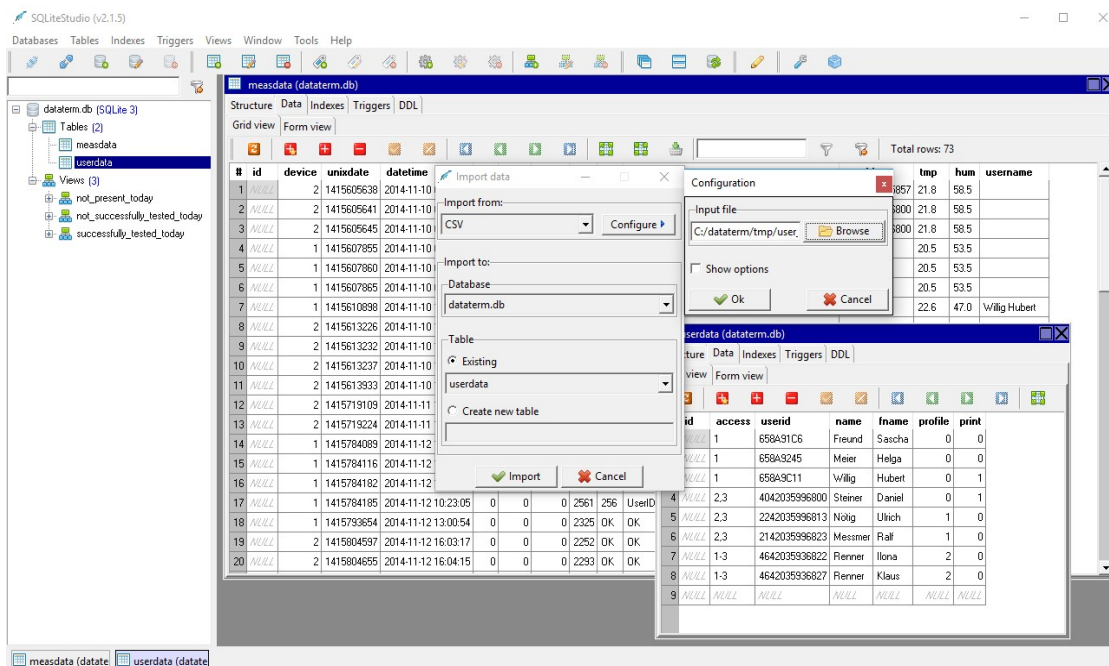
Importing user data

1. Create a CSV file with the columns **id**, **access**, **userid**, **name**, **fname** as illustrated.



2. Open the context menu by right mouse click to **userdata** table and select **"Erase table data"** to delete all records.

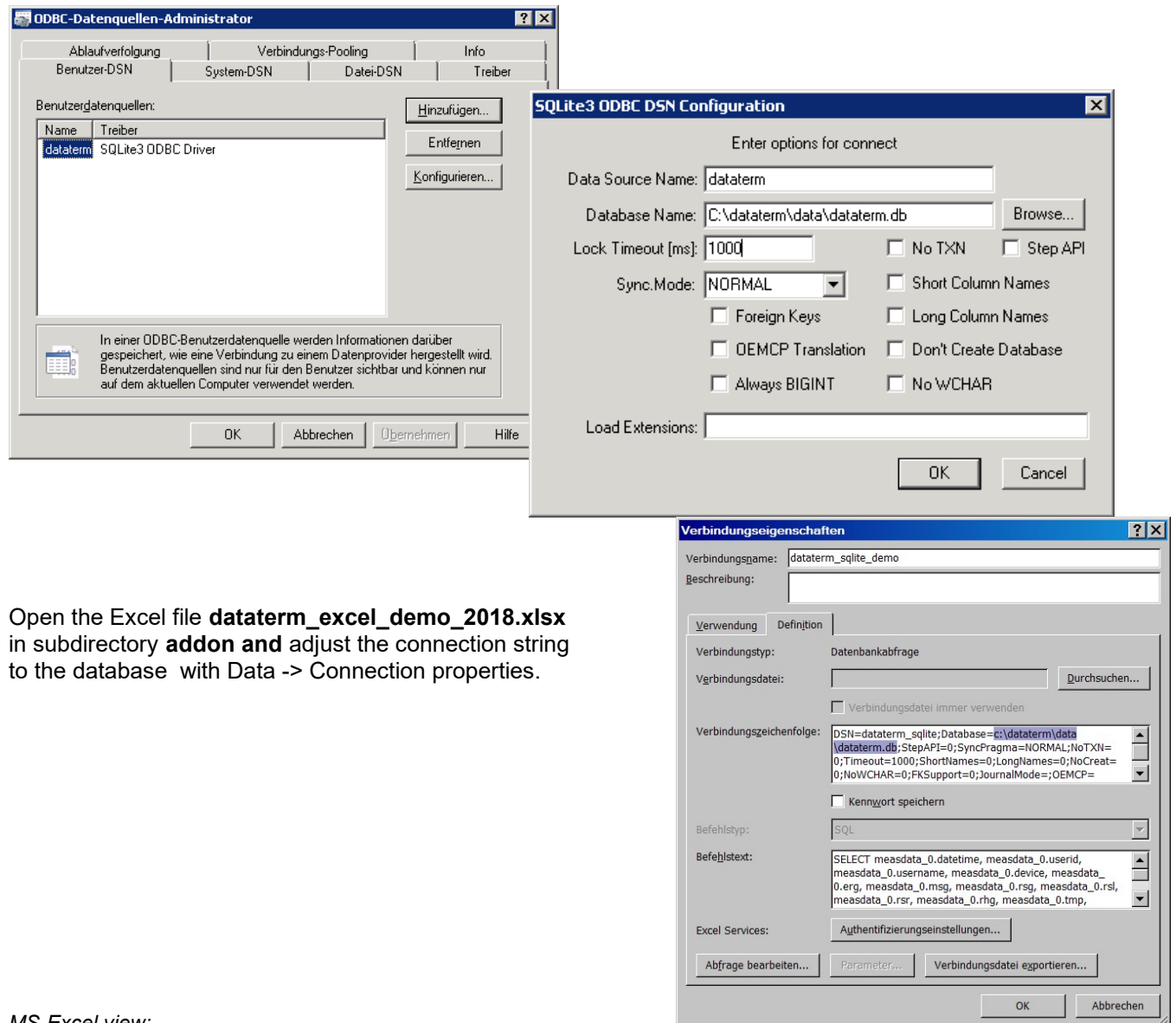
3. To import the CSV file select **"Import data to table"** in the same context menu.



Data evaluation with MS-Excel

Prior to access the database with MS-Excel you've to install the ODBC driver **sqliteodbc.exe**. The file is located within the installation path in the subdirectory **addon**.

Use the ODBC-Database administration **C:\Windows\SysWOW64\odbcad32.exe** to configure a User-DNS with the path to the database as illustrated below.



The screenshots illustrate the configuration process for the ODBC driver. The first window shows the ODBC-Datenquellen-Administrator with the 'dataterm' driver listed. The second window, 'SQLite3 ODBC DSN Configuration', shows the configuration for the 'dataterm' DSN, including the database path 'C:\dataterm\data\dataterm.db' and various options like 'Lock Timeout (ms): 1000' and 'Sync.Mode: NORMAL'. The third window, 'Verbindungseigenschaften', shows the connection properties for 'dataterm_sqlite_demo', including the connection string and the SQL query: 'SELECT measdata_0.datetime, measdata_0.userid, measdata_0.username, measdata_0.device, measdata_0.erg, measdata_0.msg, measdata_0.rsg, measdata_0.rsl, measdata_0.rsr, measdata_0.rhg, measdata_0.tmp, measdata_0.hum'.

Open the Excel file **dataterm_excel_demo_2018.xlsx** in subdirectory **addon** and adjust the connection string to the database with Data -> Connection properties.

MS-Excel view:

	A	B	C	D	E	F	G	H	I	J	K	L
1	datetime	device	userid	username	erg	msg	rsg	rsl	rsr	rhg	tmp	hum
2	2018-02-10 11:33:12	1	420068A1D1	Pfeifle Rainer	32	Right shoe Hi-Fail	0	25683	0	2470	25,4	30,5
3	2018-02-10 11:32:45	2	420068A1D1	Pfeifle Rainer	8	Left shoe Hi-Fail	0	0	29030	2379	24,7	35,5
4	2018-02-10 11:30:51	1	420068A1D1	Pfeifle Rainer	OK	OK	0	26737	29461	2479	25,4	30,5
5	2018-02-10 11:30:44	1	420068A1D1	Pfeifle Rainer	2048	Wrong Measurement	0	0	0	2383	25,4	30,5
6	2018-02-10 11:30:34	1	420068A1D1	Pfeifle Rainer	2050	Wrist/Smock Hi-Fail; Wrong Measurement	0	0	0	0	25,4	30,5
7	2018-02-10 11:30:32	2	420068A1D1	Pfeifle Rainer	OK	OK	0	25099	27084	2628	24,7	35,5
8	2018-02-10 11:30:25	1	3D0094593E	Speicher Jürgen	OK	OK	0	0	0	2540	25,4	30,5
9	2018-02-10 11:30:22	2	420068A1D1	Pfeifle Rainer	2048	Wrong Measurement	0	0	0	2591	24,7	35,5
10	2018-02-10 11:29:59	1	658A9C11	*Willig Hubert	1026	Wrist/Smock Hi-Fail; Service access	0	0	0	0	25,4	30,5
11	2018-02-10 11:29:18	2	658A9C11	*Willig Hubert	1026	Wrist/Smock Hi-Fail; Service access	0	0	0	0	24,7	35,5
12	2018-02-10 11:25:33	1	420068A1D1	Pfeifle Rainer	OK	OK	0	31262	32514	2566	25,3	30,5
13	2018-02-10 11:25:09	1	3D0094563C	Steiner Gerhard	OK	OK	0	28797	33506	2552	25,4	30,5

Appendix A

Table measdata, field msg - Message text of the terminal

By default this is the text received from the terminal.

However it is possible to customize the messages.

Rename the English template file "data/messages.cfg.en.template" to "data/messages.cfg" and edit the content accordingly if desired.