Wolfgang Warmbier
Systeme gegen Elektrostatik

User's Manual

DataTermD
Software V3.0.0

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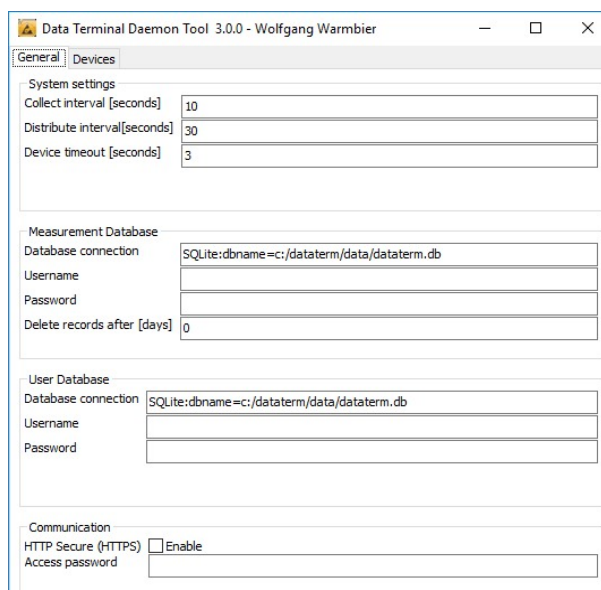
Overview

- 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
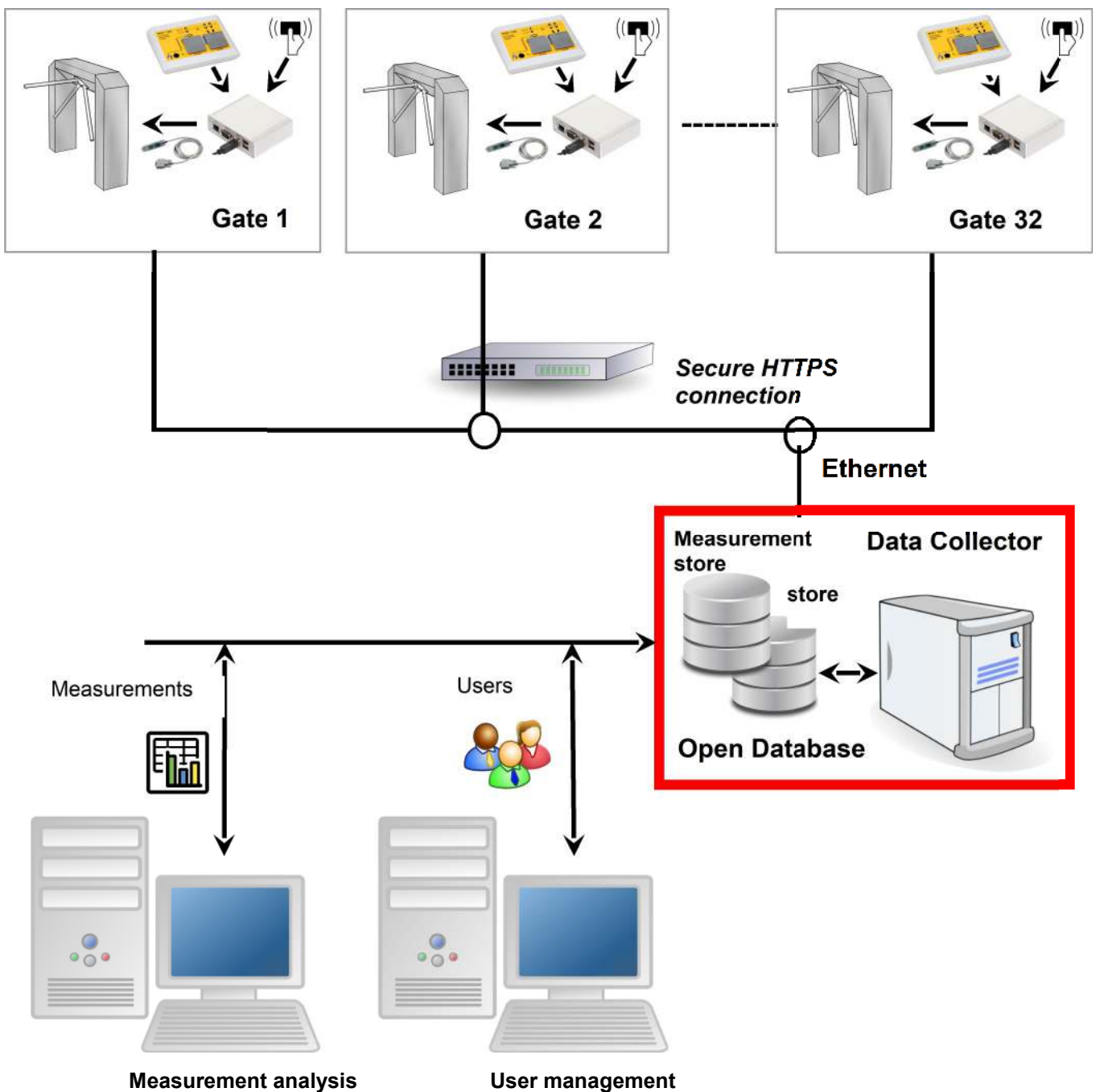
DataTermD is the service which runs on a server, called "Data Collector" in this example. **DataTermC** is the configuration program for this service with graphical user interface.
The service collects measurement data of the configured devices and distributes user data and access policies on top of 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 cutomer's duty. You can find the database definitions below in section **Database connection** and **Database definition**.

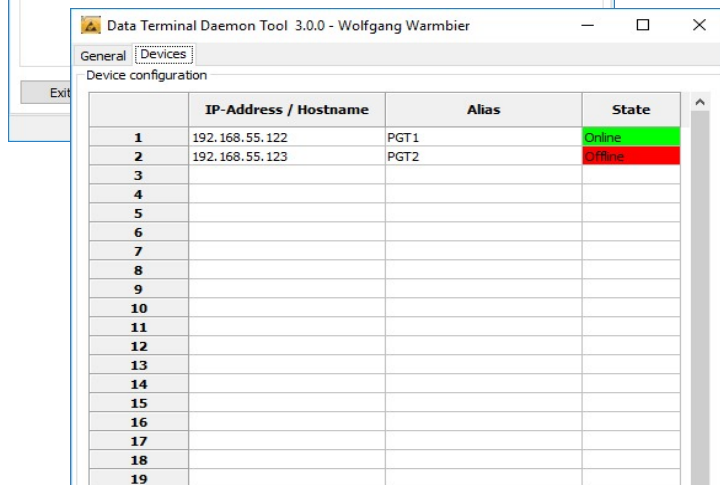*Collect interval for measurements and user data.*

Database connection configuration, Connection to customer database possible

Secure communication to the device

Device configuration and status
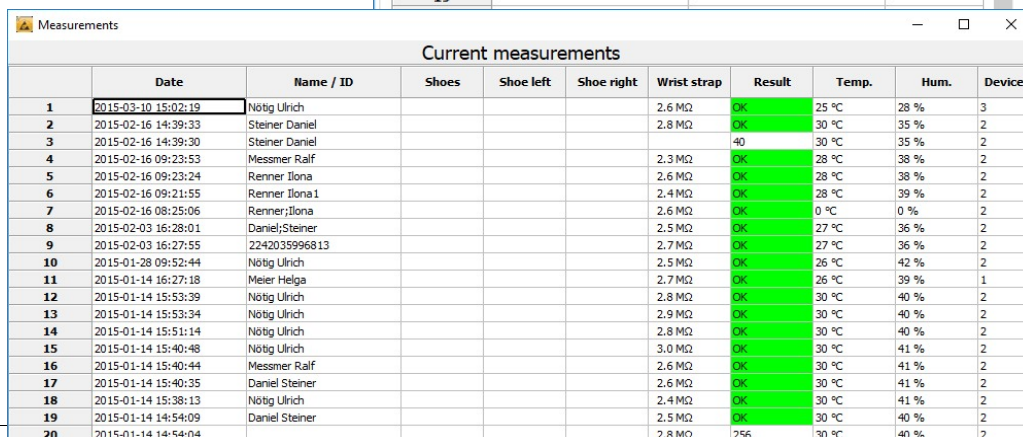
Quick overview of the last 20 measurements

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.

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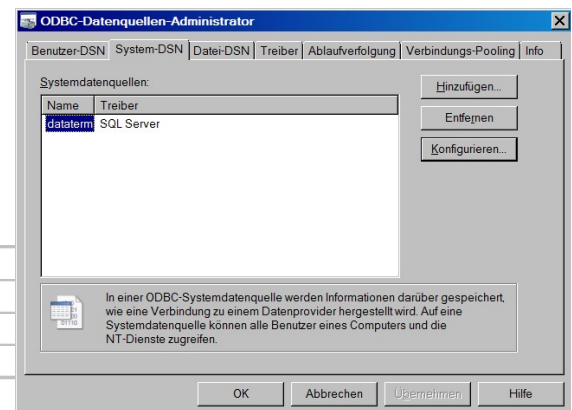
This procedure should also work with different databases with ODBC support.

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 *See Appendix A*	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)

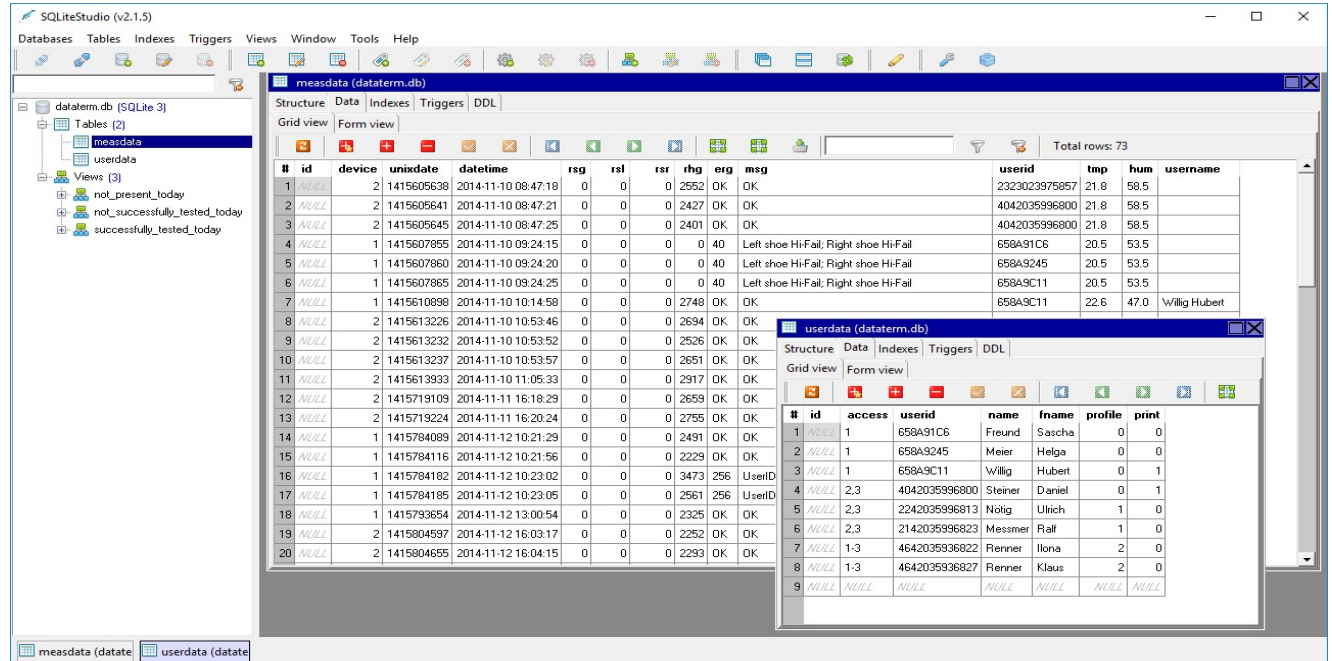**ID:**   Primary key of the table is not used further.
DEVICE: number of the device
UNIXDATE ,DATETIME: Time- and date stamp of the measurement

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

Userdata Maintenance & Measuremet 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.

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.
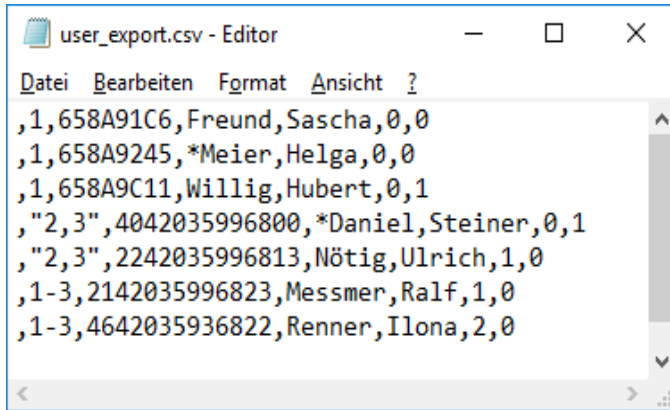
2. Open the context menu by right mouse click to **userdata** table and select "**Erase table data**" to delete all records.
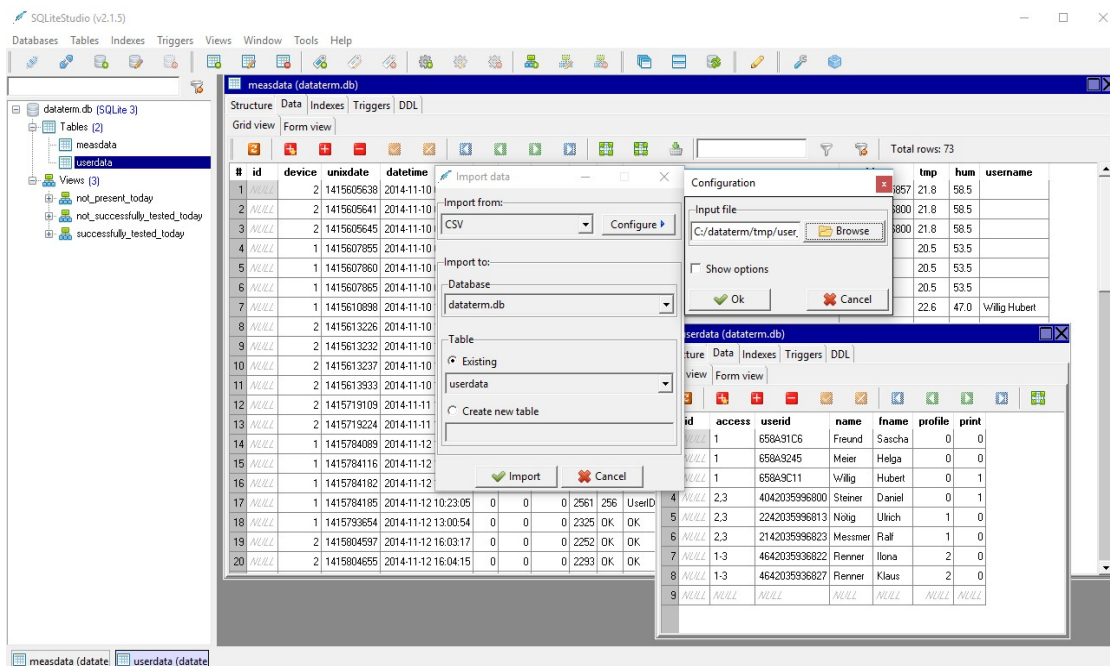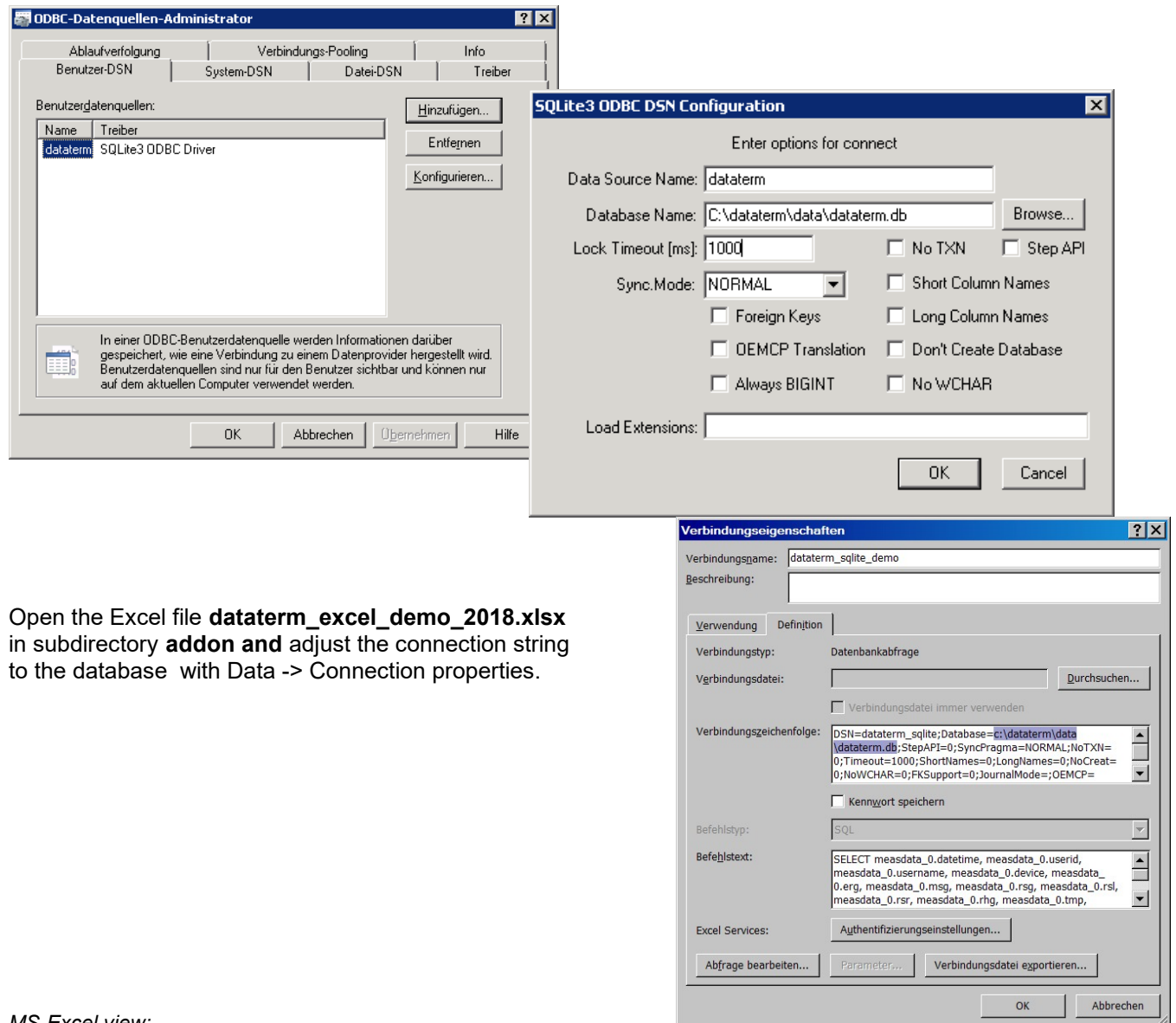
3. To import the CSV file select "Import data to table" in the same context menu.

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.

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.