

MRU INSTRUMENTS, INC.

A tablet screen displaying the "PROTOCOLS" form in the MRU app. The form has a red header with the MRU logo and the title "PROTOCOLS". It contains several input fields for site information.

MRU PROTOCOLS

Site-Nr. 2

Name Example site

Street+Nr. Bayside 22

ZIP 1236

Location Anywhere



PRODUCT PORTFOLIO

MRU app / SOFTWARE

MRU4U

The MRU4U app is available for Android and IOS.



- This app allows you to connect your smartphone or tablet to your MRU analyzer via Bluetooth
- Control the most important functions of your MRU analyzer with your Smartphone or Tablet
- Measured data are shown live on the screen, either as text or as curve chart
- The user can select which measurement values are displayed
- Measurements may be stored on the controlling unit, assigned to a heating facility (site) and also be sent by email



ANDROID

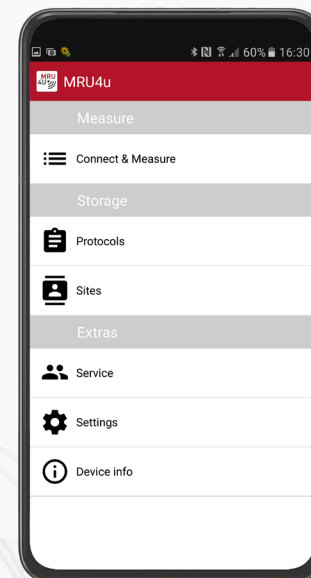


iOS

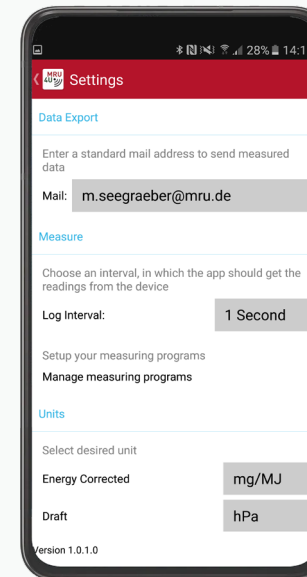
Compatible with *:

AMPRO 1000
AMPRO 2000
OPTIMA7 Biogas
OPTIMA7 NDIR
NOVAcompact
NOVAplus
DM 9600 & DM 9600 CHP

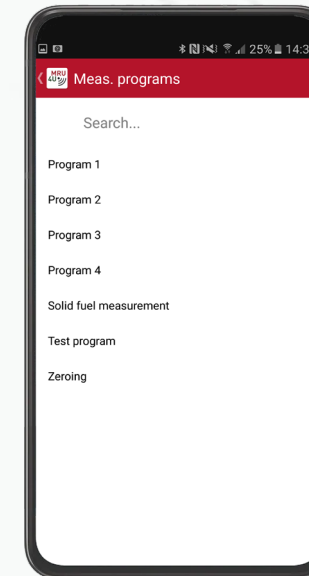
*when equipped with BT Dual Mode



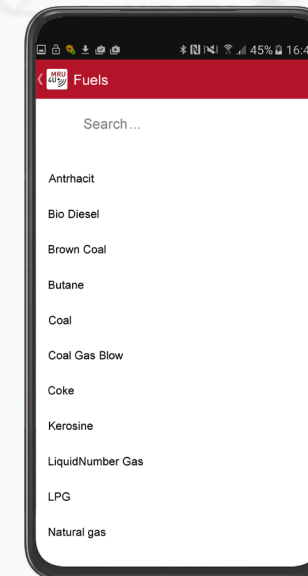
Intuitive easy operation



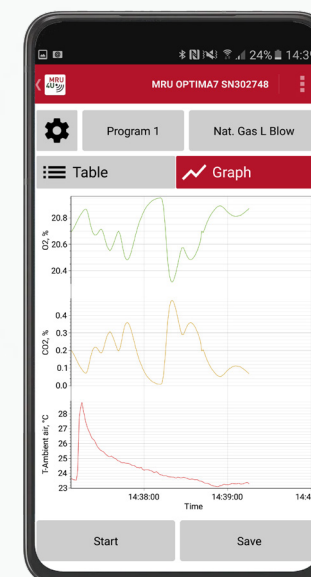
Big number of user settings



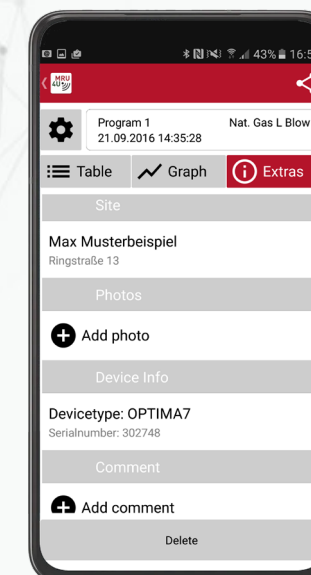
Pre defined measurement programs



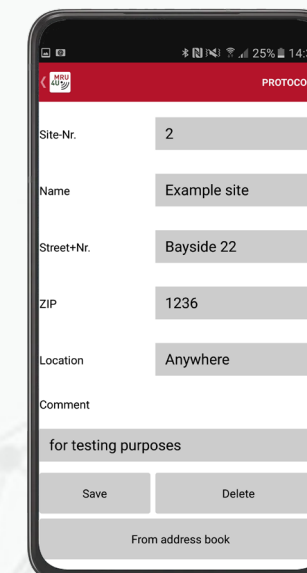
Pre defined fuel types



Measurements shown as table or graph



Add pictures, comments or sites to measurement data



Easy site administration

MRU4win

The MRU4win PC software for Windows

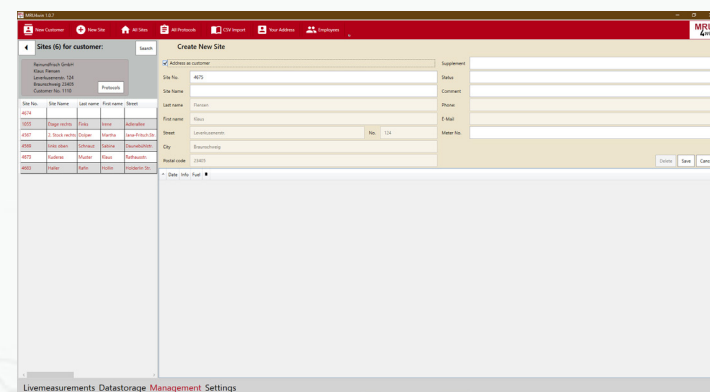
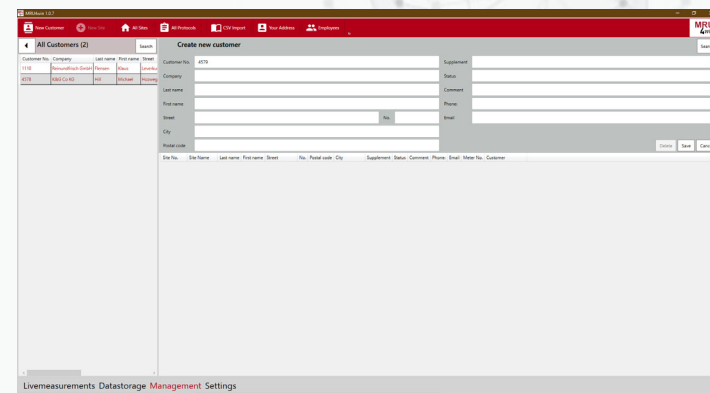
- Simultaneous live-tracking of measurements of several devices
- Manage customer and facility data as well as corresponding measuring data
- Create, print and export measurement protocols
- Numerous adjustments possible for a variety of applications

Compatible with:

AMPRO 1000
AMPRO 2000
OPTIMA7 Biogas
OPTIMA 7 NDIR
NOVAcompact
NOVAplus
DM 9600 & DM 9600 CHP
VARIOLuxx, MGAprime
SWG 100/200/300

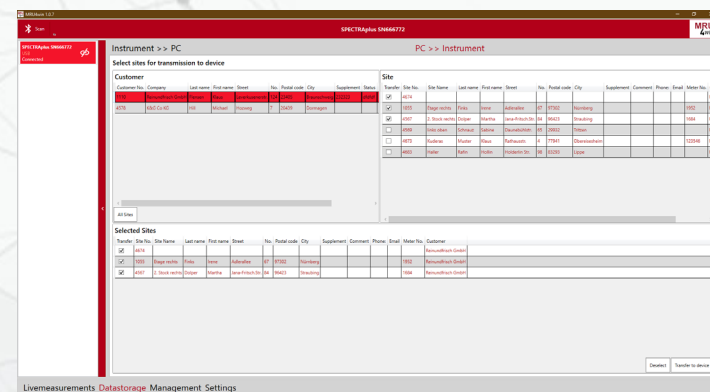
Create new customer data sets

Create as many customer data sets as you like and assign one or more sites if necessary



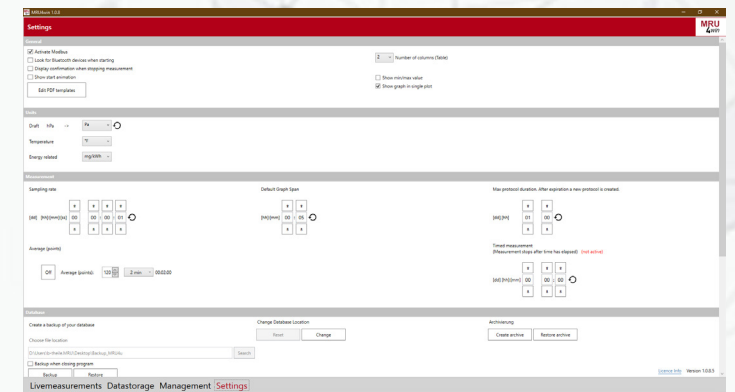
Create new sites

Create any number of site data sets and assign them to customers if necessary



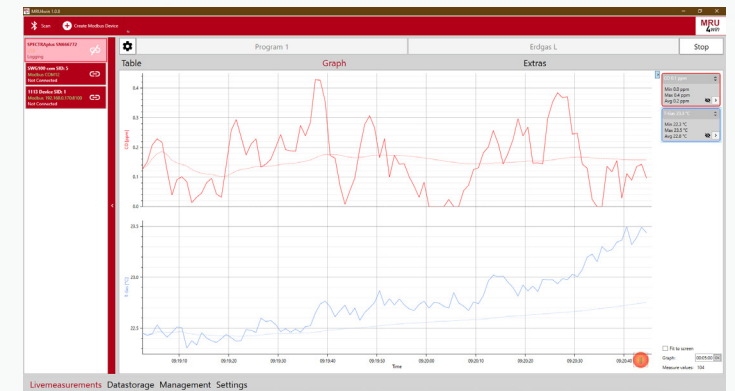
Wide range of settings for flexible use

- Table layout
- Graphic layout
- Unit definition
- Sampling rate
- Averaging
- Protocol length



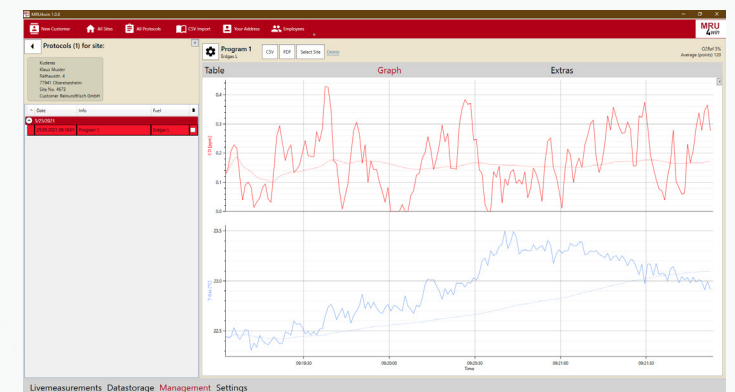
Monitor live measurements of several connected units

- Draw and display currently measured values
- As a graph or table
- Auto log function active in the background
- Data also available offline



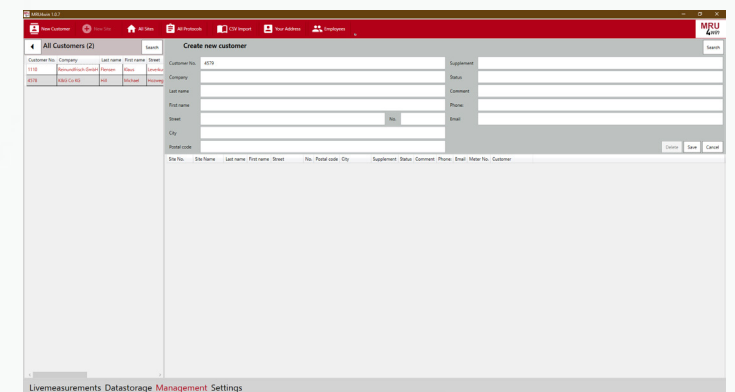
Create, print and export measurement protocols

- Protocols save measurement data, customers and sites
- Export protocols optionally as pdf, csv, xls or xml
- Import of data from the measuring device



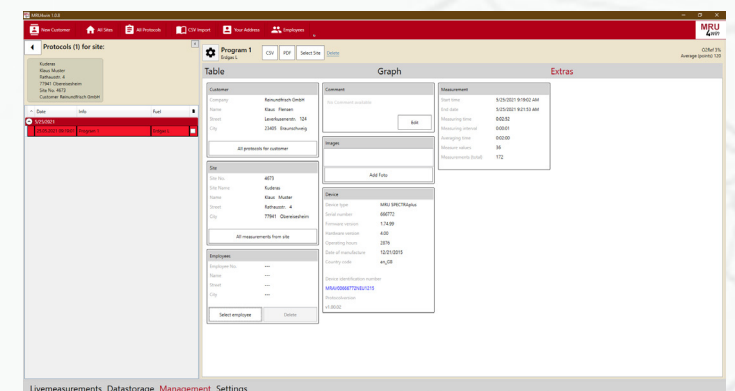
Manage customer and site data and assign measurement data

- Manage unlimited number of sites
- Assign several sites to one customer
- Assign stored values to a site



Create PDF protocol file

- Individual definition of protocol content (customer, graphic, comment, etc.)
- Use of predefined protocol templates



EMISSIONS PRO

The MRU EMISSION PRO software for Windows

The MRU EmissionPro software installed on your laptop, in combination with the MRU NOVA plus gas analyzer, is an easy to use and intuitive tool that makes frequent engine / turbine / boiler monitoring a simple task. The software is a computerized version of the most common EPA and state protocols i.e. CTM-030, CTM-034, ASTM D6522. Completed tests can be viewed in PDF and Excel format.

Compatible with:
NOVAplus

Equipment

Calibration

Test

Drift-Check

No Reports available

Equipment

Calibration

Test

Drift-Check

No Reports available

Equipment

Calibration

Test

Drift-Check

No Reports available

Equipment

Calibration

Test

Drift-Check

No Reports available

Equipment

Calibration

Test

Drift-Check

Reports available

Guided - easy to use - intuitive menu structure

Equipment

Test Site:
Equipment:
Test Parameters:
Technician Info:
Report Parameters:

NPT
Texa
CAT
Engl

15 Sec Sample Rate
0:01:00 Ramp-up Time
0:01:00 Measurement Time
Carlos Rodriguez
EMI Testers
5000 Cornwall Ave
Emission Limit Pa
Tech. Company Lo
Site Company Log
Equipment Param
Pre/Post Test Res
Test Parameters (I
Air Permit Number
Mass Emission C
Pre-Test Calibratio
Post-Test Drift Che
Ramp-Up Data
Purge Data

Back

Save

Cancel

Site

Equipment Info

Fuel Info

Mass Emission Calcs

Permit Info

Post-Test Correction

Test Parameter

Report Parameter

SITE

NPT Texas

EQUIPMENT

CAT Engine 1

Equipment Name:
Equipment Type:
Unit Number:
Service:

CAT Engine 1
Engine with fuel meter 0-500hp
123456
Quarterly test

Engine Model:
RPM:
Site-Rated HP:
Actual HP @ Test:
Ignition Timing:

CAT 3516
1500
499
450
22 BTDC

Stack Flow:
Stack Temp:
Intake Manifold Pressure:
Intake Manifold Temp:

0.0
0.0
Left: 0.0
Right: 0.0
Left: 0.0
Right: 0.0

A/F Controller Make:
A/F Controller Model:
Catalytic Conv. Make:
Catalytic Conv. Model:
Fuel Specific Gravity:

Controltech
XT 2400
Catalytech
PRO 1500
0.8017 sg

Entering equipment info

- Fuel info
- Mass Emissions Calculation
- Permit Info
- Post-Test Corrections
- Test Parameters
- Report Parameters

Calibration

Equipment

Calibration

Test

Drift-Check

No Reports available

Table

Device Info

Live

O2

NO

CO

NO2

Apply Fresh Air

Apply NO Gas

Apply CO Gas

Apply NO2 Gas

21.0 %

0 ppm

0 ppm

0 ppm

O2 Cal Response

NO Zero Response

CO Zero Response

NO2 Zero Response

O2 Zero Response

NO Cal Response

CO Response to NO Gas

NO2 Response to NO Gas

NO Response to CO Gas

CO Cal Response

NO2 Response to CO Gas

NO Response to NO2 Gas

CO Response to NO2 Gas

NO2 Cal Response

21 %

79 ppm

512 ppm

53 ppm

Calibrate O2 Sensor

Calibrate NO Sensor

Calibrate CO Sensor

Calibrate NO2 Sensor

Zero Error Limit
Cal Error Limit
Span Error Limit

± 0.2
 ± 0.2
 ± 0.2

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Calibration
Calibration is performed a measurement is performed

Test

Equipment

Calibration

Test

Drift-Check

No Reports available

Table

Graph

Device Info

O2

%

CO

ppm

NO

ppm

NO2

ppm

NOx

1.1

10

95

1

96

RampUp
Measurement
Purge

00:00:00
00:00:00
00:01:04

Next

3 Test Cycles left

Reset Measurement

Remaining Time 00:09:58

Measurement
per pre defined parameters and time will be performed

Drift-Check

Equipment

Calibration

Test

Drift-Check

No Reports available

Table

Device Info

Live

O2

NO

CO

NO2

Apply Fresh Air

Apply NO Gas

Apply CO Gas

Apply NO2 Gas

20.6 %

1 ppm

0 ppm

53 ppm

O2 Span Response

NO Zero Response

CO Zero Response

NO2 Zero Response

O2 Zero Response

NO Span Response

CO Response to NO Gas

NO2 Response to NO Gas

NO Response to CO Gas

CO Span Response

NO2 Response to CO Gas

NO Response to NO2 Gas

CO Response to NO2 Gas

NO2 Span Response

21 %

79 ppm

512 ppm

53 ppm

Zero Error Limit
Cal Error Limit
Span Error Limit

± 0.2
 ± 0.2
 ± 0.2

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Zero Error Limit
Cal Error Limit
Span Error Limit

± 5
 ± 5
 ± 5

% Span
% Span
% Span

Drift-Check
After one or numerous mea-
surements a drift check will be
performed, once completed,
the reports will be available

Reports available

Reports
can be created as PDF
or as Excel file



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