1. Introduction

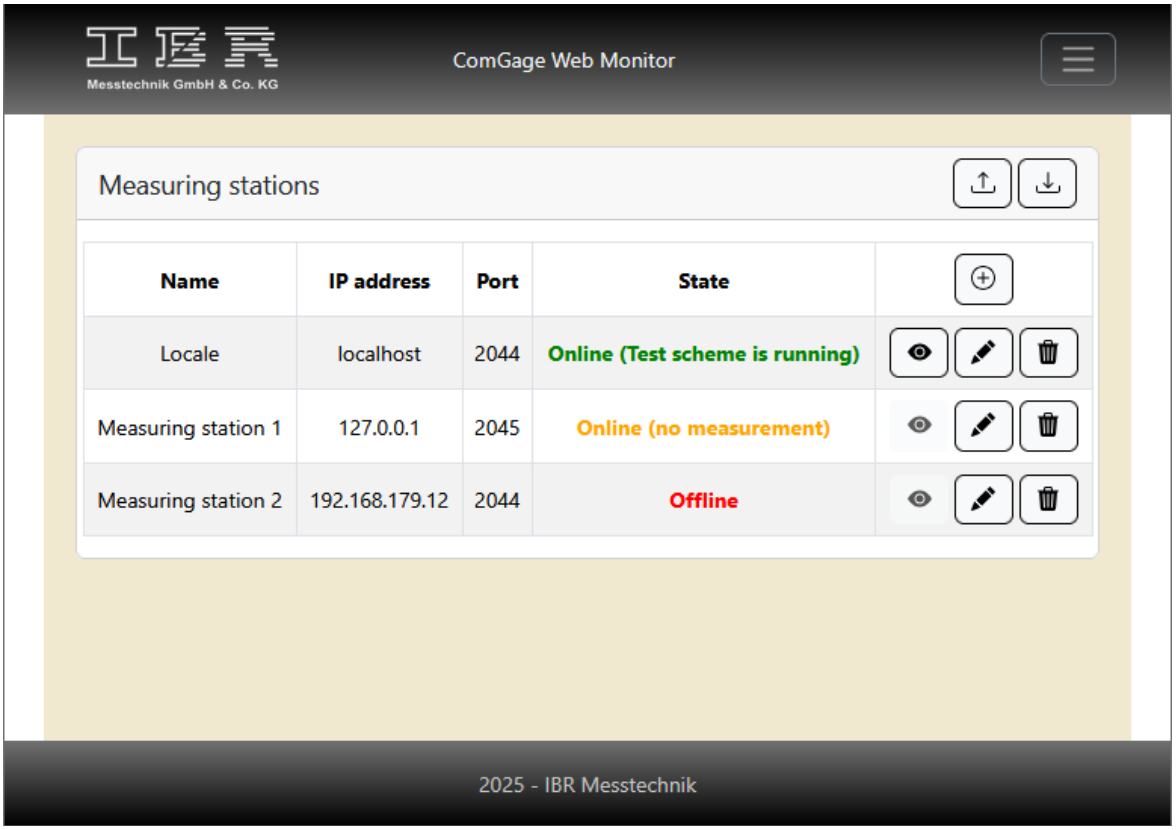
The web application “ComGage Web Monitor” allows the monitoring and controlling of ComGage measuring stations on different computers via the IP network. The measuring stations are defined via a host name or an IP address.
The assignment of different TCP ports even allows the “ComGage Web Monitor” to control several ComGage installations on one PC.

The following information is available in the software “ComGage Web Monitor” :

- Status of the individual measuring stations
- Information regarding the currently running test scheme / test order per measuring station :
  - Characteristic data
  - Saved measuring values
  - Statistical data based on all saved measuring values
  - Current characteristic values and their tolerance state

Additionally, the “ComGage Web Monitor” allows to modify characteristic data (e.g. tolerance limits) and to set registers to any value in running test schemes / test orders.
To restrict the access to these functions, the application provides a user management.

The application can be executed locally on a PC or it can be installed centrally on a server, so that all participants registered in the network (e.g. also tablet PCs and smartphones, independent of the operating system) can access the application and run it in the browser.

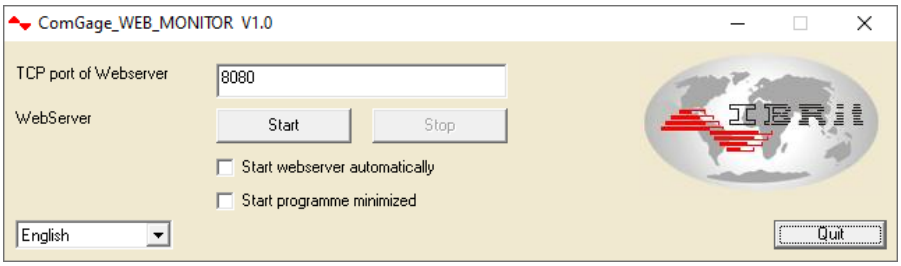


Important note : On the measuring stations which shall be accessed, there has to be installed a ComGage Professional version V5.20 or higher and the license IBR_MON has to be activated on the corresponding dongle.
Only then, the software “ComGage Web Monitor” can establish a connection.

2. Installation

Configuration of the webserver

The software “ComGage Web Monitor” can be installed locally on a PC or a server as executable application as well as on an existing PHP server (see Appendix A).
After a local installation on a PC / server, the “ComGage_WEB_Monitor.exe” can be started. The following window is opened, in which the required webserver can be started :



The following settings are available for the configuration :

- TCP port of Webserver : TCP port that shall be used for the webserver.
- Start webserver automatically : The webserver is started automatically after the file “ComGage_WEB_Monitor.exe” is executed.
- Start programme minimized : The window above is no longer opened after the software is started. It can only be opened via the traybar.
- Language selection : The display language can be selected.

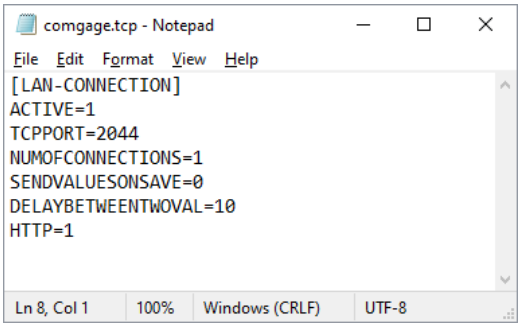
After all settings have been made, the webserver can be started via the button **Start**.
While the webserver is running, it can be stopped via the button **Stop**.
The button **Quit** stops the webserver and closes the software.

Now, the “ComGage Web Monitor” can be opened in the browser via “http://localhost:{selected TCP port}” (e.g. “http://localhost:8080“).

Preparation of ComGage on the measuring stations

In order to access a measuring station via the web application, the file “comgage.tcp” in the programme directory of the ComGage software of the particular measuring station has to be adjusted in such a way that ComGage can send its data to the software “ComGage Web Monitor”.

To do this, open the file “comgage.tcp” with any text editor and change the content as follows :



Save and close the file afterwards. This modification makes it possible that ComGage can be addressed by “ComGage Web Monitor” software. This setting is required on all computers where ComGage shall be accessed by the software “ComGage Web Monitor”.

Important :

- The software ComGage can only be accessed by one “ComGage Web Monitor” software at a time. Because of this, it is important to set the line “NUMOFCONNECTIONS” to “1”. Otherwise, the measurement could be affected.
- If several ComGage instances on one PC shall be addressed, each of the instances has to use a different TCP port.

3. Main menu

In the upper area of the window, a button is available to open the main menu :



For a user who is not logged in, the following menu items are available :



The user can log in, register, access the help and additional information or change the used language. After the login, the menu items “Login” and “Register” are no longer available. Instead, the logged in user and the button “Logout” are now displayed :

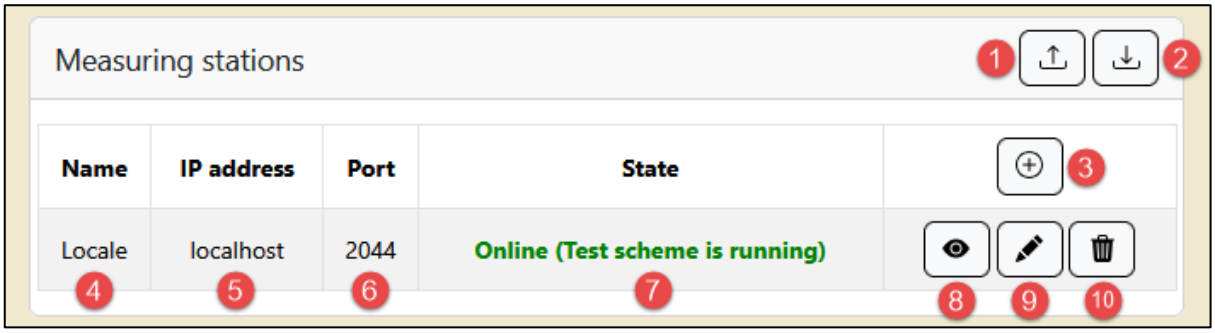


The menu item “User Management” is only available if a user with the role “Admin” is logged in.
To log in another user, the currently logged in user has to be logged out first.
Different roles (and in this way different rights) can be assigned to the users (see chapter 5 → User management).

4. Structure and operation of ComGage Web Monitor

On the main page, all stored measuring stations are listed in a table. Each measuring station has a freely definable designation, a specific IP address and a corresponding TCP port.

As soon as the web application is started, the current status is continuously requested from all measuring stations and displayed in the table. In the detailed view of a measuring station, its data is requested and updated on the screen once per second. Should the measuring station no longer respond or should its status change, the software “ComGage Web Monitor” returns to the main page.



1. Upload a “cgmonitor” file. Adopts the measuring stations from the selected file and adds them to the already existing measuring stations in the database.
2. Download the currently stored measuring stations as “cgmonitor” file. This function can be used to export the stored measuring stations.
3. Add a new measuring station.
4. Description of the measuring station.
5. Host name / IP address of the measuring station.
6. TCP port of the measuring station.
7. Current status of the measuring station :

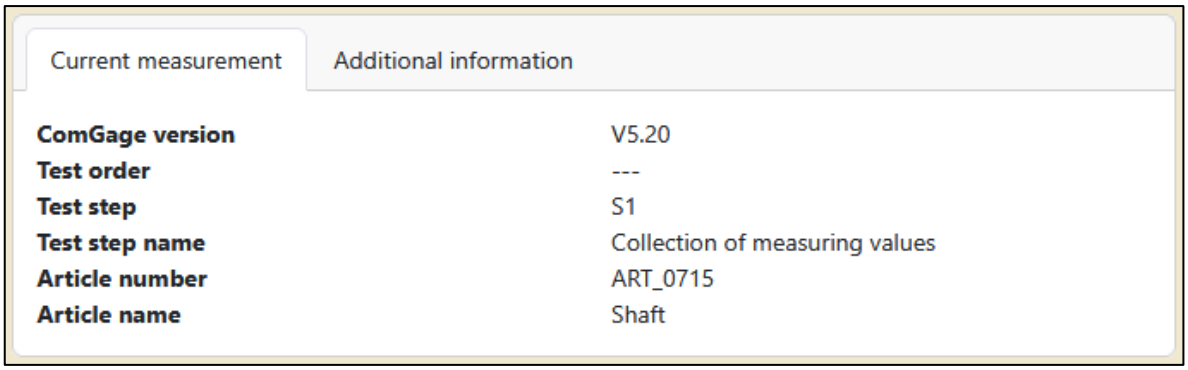
Status	Description
---	No status received, yet. The status query for this station is still pending.
Offline	ComGage does not respond on this station. Either the “comgage.tcp” is not configured correctly, or ComGage is not running, or the station is not connected to the network.
Online (no measurement)	ComGage is running on this station, but there is currently no measurement.
Online (HTTP not activated)	ComGage is running on this station, but the HTTP commands are not activated (see chapter 2).
Online (‘IBR_MON‘ license not activated)	ComGage is running on this station, but no access is possible, because the license IBR_MON is missing on the measuring station.
Online (Test scheme is running)	A test scheme is currently running on this station.
Online (Test order is running)	A test order is currently running on this station.

8. Open detailed view of this measuring station.
9. Modify the parameters for this measuring station.
10. Delete this measuring station.

Note : The buttons number 1 / 2 / 3 / 9 / 10 are only available after the login of a user with the role “Admin” or “Configuration” (see chapter 5 → User management).
Without this login, only the button number 8 to open the detailed view of a measuring station is available.

In the detailed view of a measuring station, all information about the currently running test scheme / test order is displayed, including the contained characteristics.

The upper part of the window shows information about the “Current measurement” and some “Additional Information” :



Current measurement :

1. ComGage version that is used on this measuring station.
2. Name of the running test order. Shows “---” if a test scheme is running.
3. Current test step number of the running test scheme / test order.
4. Name of the current test step.
5. Article number of the running test scheme / test order.
6. Article name of the running test scheme / test order.

Additional Information :

1. Selected name for this measuring station.
2. The host name or IP address of this measuring station.
3. The TCP port of this measuring station.

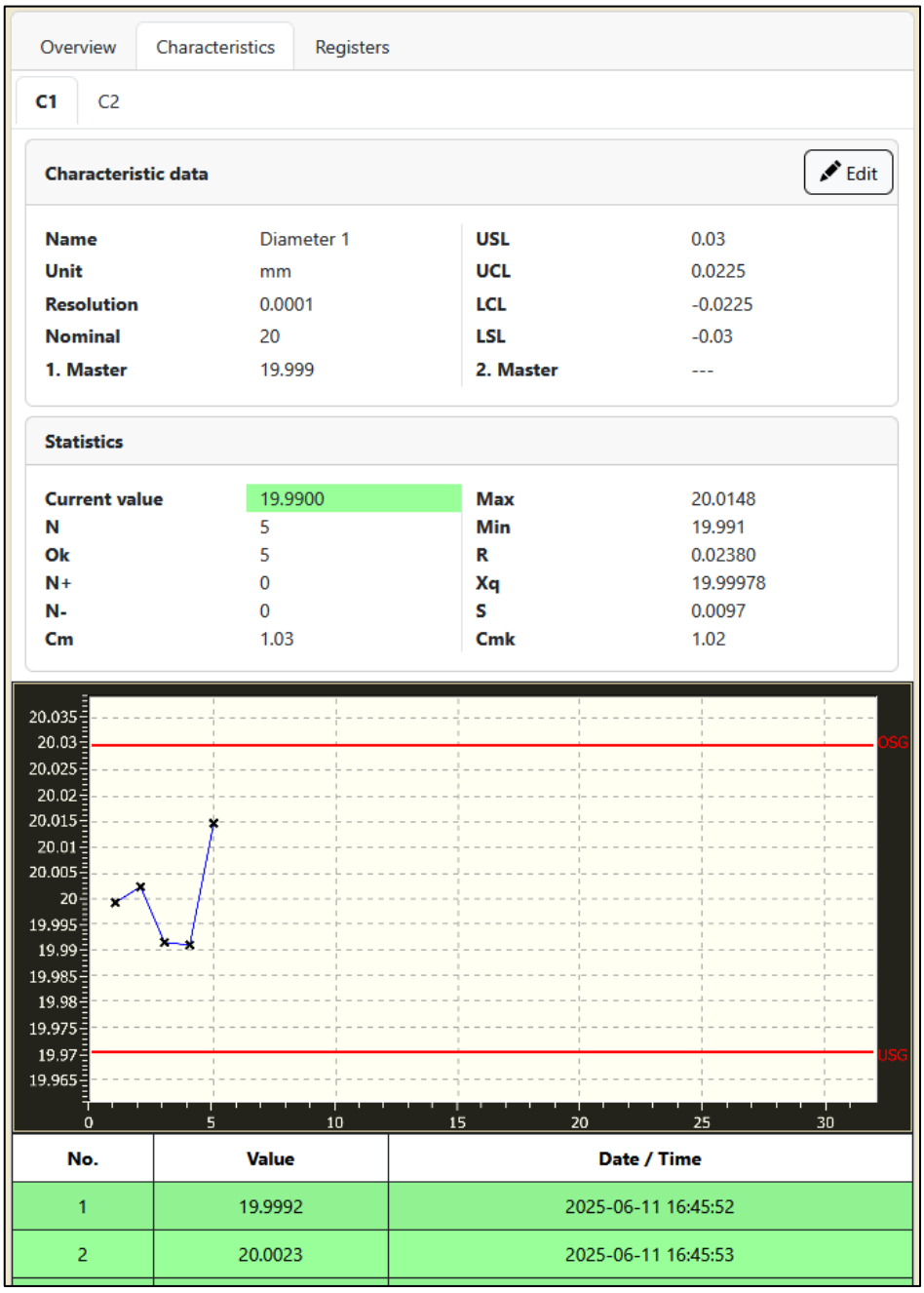
The characteristic overview in the lower part of the window shows the following information for each characteristic :

Information	Description
Name	Name of the characteristic.
Unit	Unit that is used for displaying the measuring values.
Resolution	Resolution that is used for displaying the measuring values.
Nominal	Nominal size of the characteristic.
USL	Upper specification limit, relative to the nominal size. Defines the maximum allowed deviation above the nominal size. If no USL is activated, “---” is displayed.
UCL	Upper controlling limit, relative to the nominal size. Defines the deviation above the nominal size where additional actions are required, if it is exceeded by the measuring value. If no UCL is activated, “---” is displayed.
LCL	Lower controlling limit, relative to the nominal size. Defines the deviation below the nominal size where additional actions are required, if it is exceeded by the measuring value. If no LCL is activated, “---” is displayed.
LSL	Lower specification limit, relative to the nominal size. Defines the maximum allowed deviation below the nominal size. If no LSL is activated, “---” is displayed.
1. Master	First master of the characteristic, used for the calibration. If no master is activated, “---” is displayed.
2. Master	Second master of the characteristic, used for the 2-master calibration. If no master is activated, “---” is displayed.
Current value	Current measuring value of the characteristic. The background colour shows the tolerance state of the displayed measuring value (red / yellow / green).

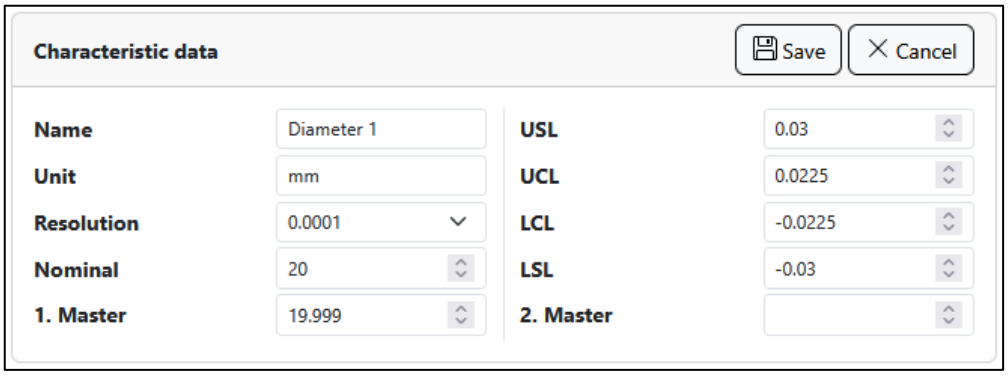
Continued on next page

Information	Description
N	Number of all saved measuring values.
Ok	Number of saved measuring values inside the specification limits.
N+	Number of saved measuring values exceeding the upper specification limit.
N-	Number of saved measuring values falling below the lower specification limit.

Under the tab “Characteristics”, a detailed view is available for each characteristic.
The buttons **C1**, **C2**, … can be used to select the characteristic. The detailed view includes characteristic data, statistical data, a run chart of the last up to 31 measuring values and a table with these measuring values, incl. date and time of each measurement. The background colours of the individual lines show the tolerance states of the corresponding measuring values (red / yellow / green).



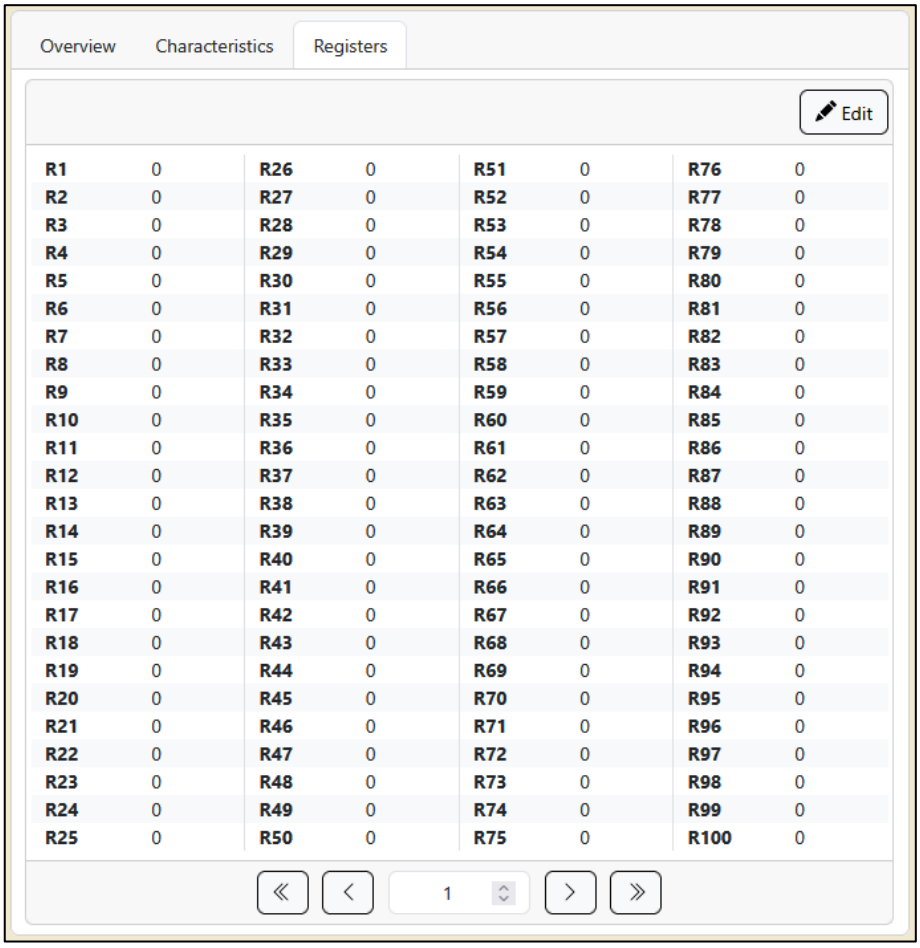
If a user with the assigned role “Admin” or “Configuration” is logged in, the button **Edit** is available in the area “Characteristic data”.
This button allows to modify the data of the selected characteristic in the running test scheme / test order. In this way, it is for example possible to change the tolerance limits or master values :



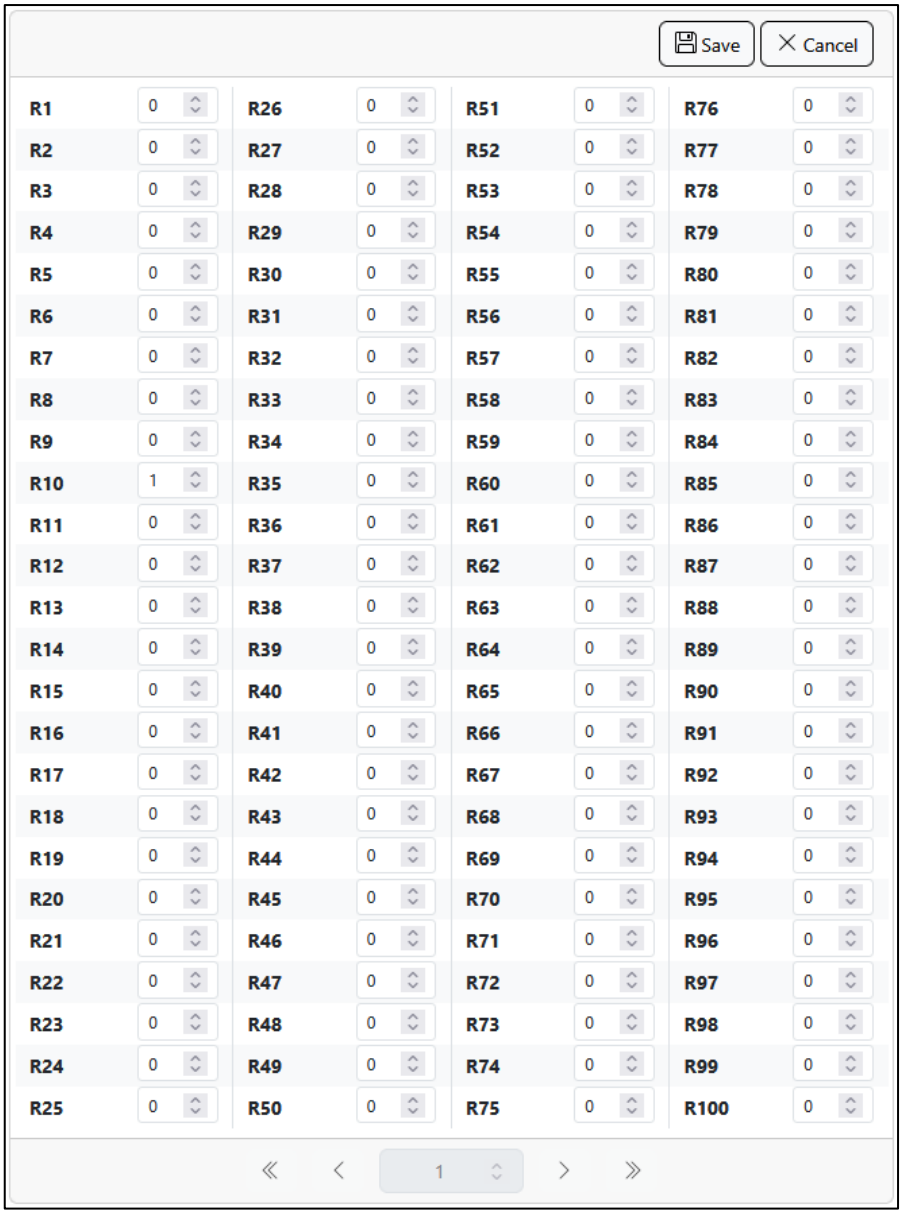
The button **Save** adopts the changes and ends the editing of the characteristic data.
The button **Cancel** ends the editing of the characteristic data without adopting the changes.

Notes :
- For *Name* and *Unit*, only ASCII characters can be used.
- Adopted changes are instantly updated in the test scheme / test order.
  Changes regarding the measuring values are instantly visible.
  But changed characteristic names and units are only displayed correctly after the next display window (= test step) has been loaded in ComGage.

In the tab “Registers”, the current values of all registers can be displayed. Several pages are available, of which each shows 100 registers :



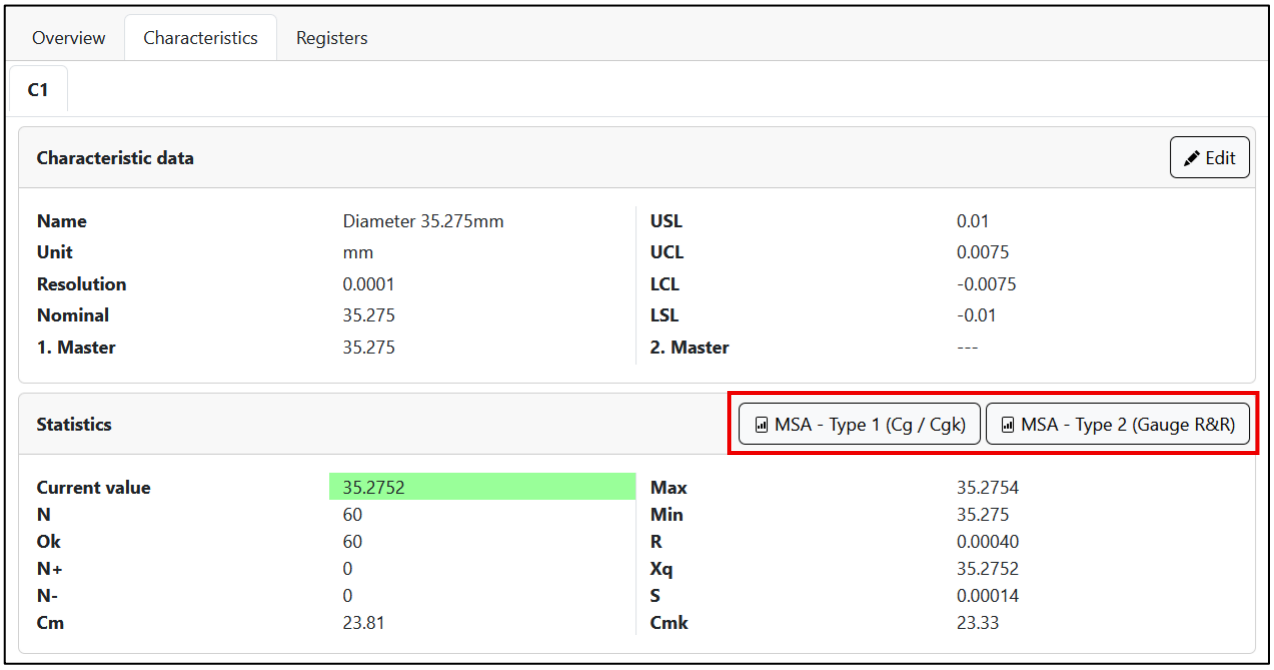
If a user with the assigned role “Admin” or “Configuration” is logged in, the button **Edit** is available.
This button allows to modify the current values of each register in the running test scheme / test order.
In this way, it is for example possible to set control registers, if this is necessary :



The button **Save** adopts the changes and ends the editing of the register values.
The button **Cancel** ends the editing of the register values without adopting the changes.
Adopted changes are instantly updated in the test scheme / test order.

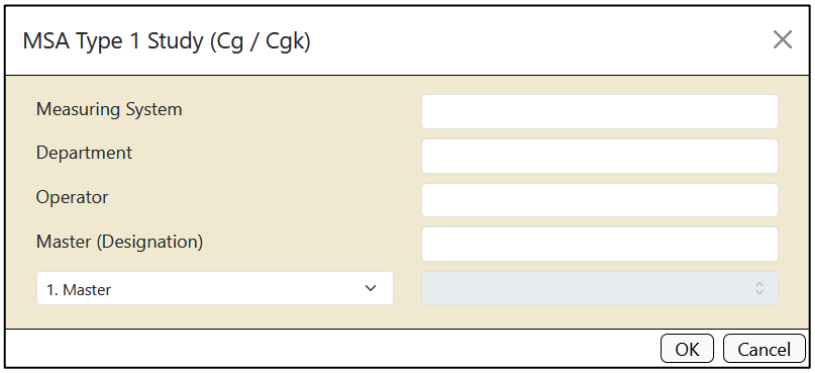
5. Gauge capability studies

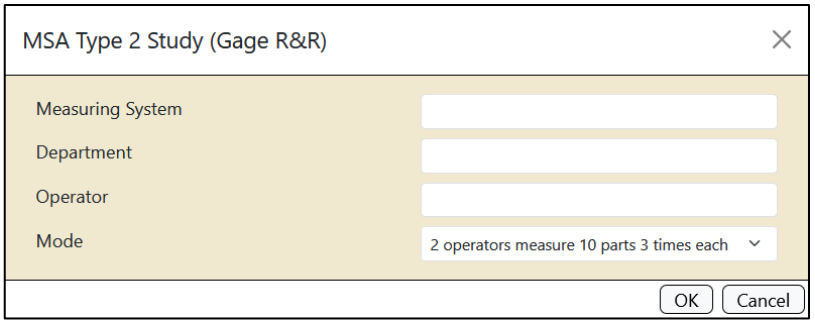
ComGage Web Monitor also provides the required functionality for gauge capability studies type 1 and type 2.
In the characteristics window, the buttons *MSA - Type 1 (Cg / Cgk)* and *MSA - Type 2 (Gauge R&R)* can be used to access this functionality :



ComGage Web Monitor uses the last 50 saved measuring values of the selected characteristic for a study type 1 and the last 60 saved measuring values for a study type 2.
The buttons are only activated if enough saved measuring values are available.

After the button has been clicked, a window is opened where additional information for the protocol can be entered :



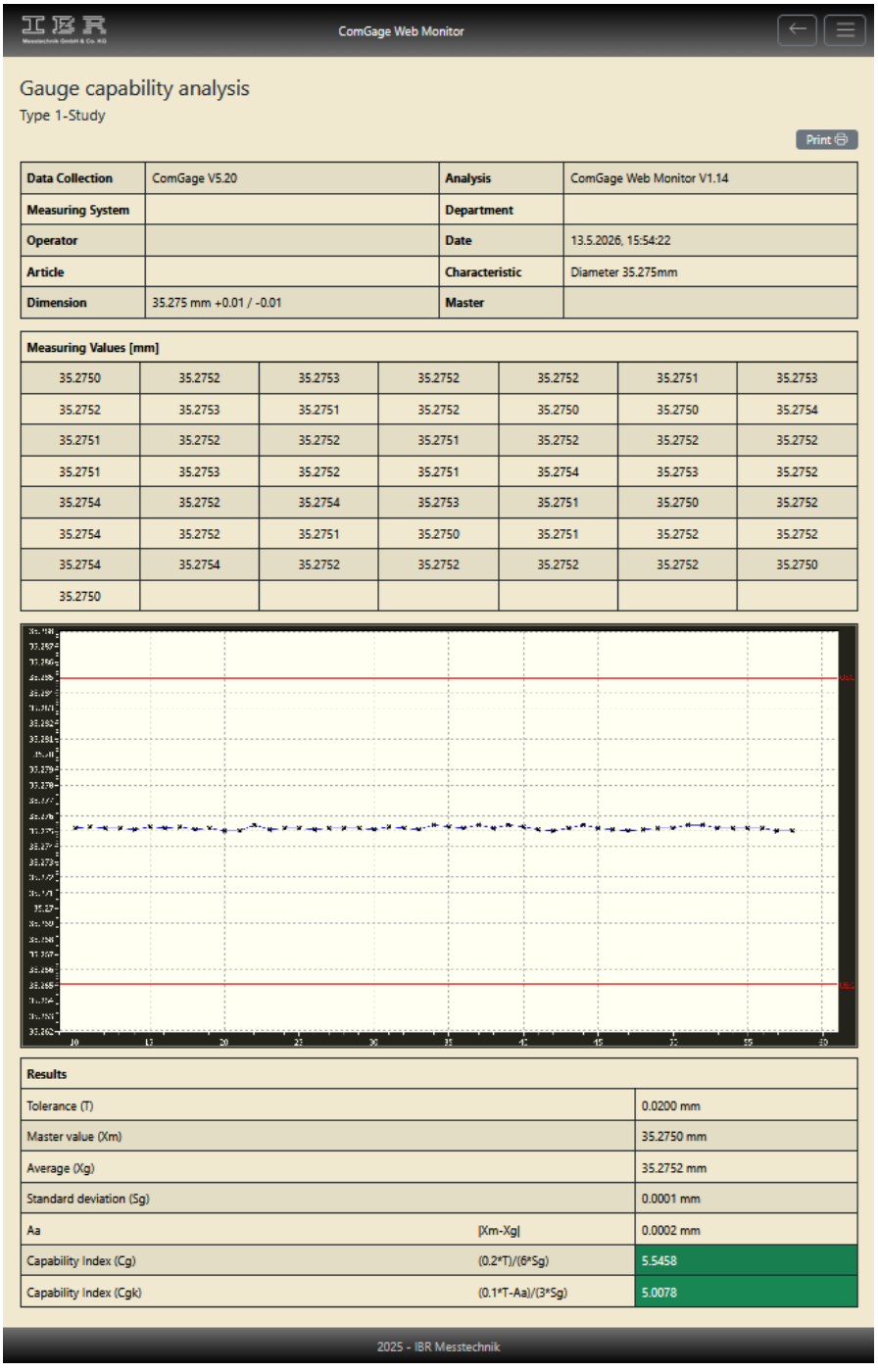


Measuring System, *Department* and *Operator* can be entered for type 1 and type 2.

The Window for type 1 also allows to enter a designation of the master which is measured. It can also be selected if the 1st master or the 2nd master of the characteristic is used for the measurement, or if another master is used for the measurement (selection of " --> "), in which case another master value can be entered.

The window for type 2 allows to select a mode, instead.
Available modes are : - 2 operators measure 10 parts 3 times each
(operator 1 → 10 parts / operator 2 → 10 parts / operator 1 → 10 parts / …)
- 3 operators measure 10 parts 2 times each
(operator 1 → 10 parts / operator 2 → 10 parts / operator 3 → 10 parts / …)

After confirming the entered data by clicking the OK button, the results of the study type 1 or type 2 are displayed. Here an example for a study type 1 :



This result window shows general information, including what has been entered in the previous window, in the upper area. Below, the measuring values are shown in a table and a run chart.
The lower area shows the results of the study.

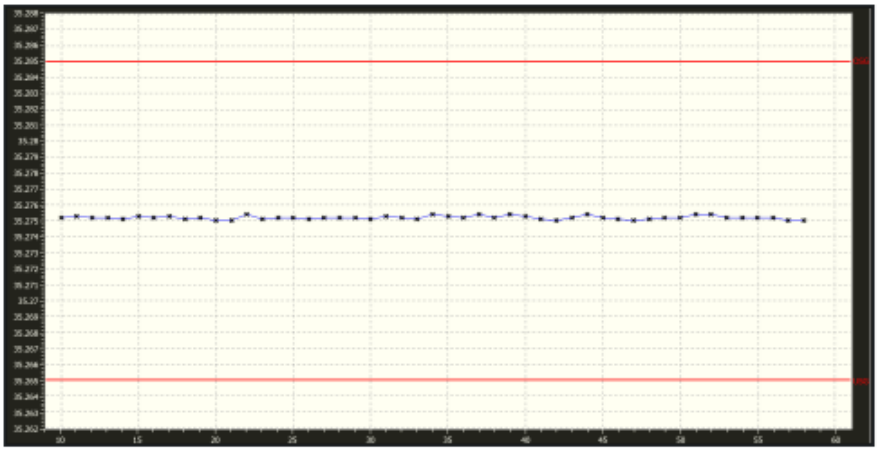
The button *Print* in the upper right allows to print the results or save them as a PDF file. Here again an example for a study type 1 :

Gauge capability analysis

Type 1-Study

Data Collect...	ComGage V5.20	**Analysis**	ComGage Web Monitor V1.14
Measuring ...		**Department**	
Operator		**Date**	13.5.2026, 15:54:22
Article		**Characteristic**	Diameter 35.275mm
Dimension	35.275 mm +0.01 / -0.01	**Master**	

Measuring Values [mm]						
35.2750	35.2752	35.2753	35.2752	35.2752	35.2751	35.2753
35.2752	35.2753	35.2751	35.2752	35.2750	35.2750	35.2754
35.2751	35.2752	35.2752	35.2751	35.2752	35.2752	35.2752
35.2751	35.2753	35.2752	35.2751	35.2754	35.2753	35.2752
35.2754	35.2752	35.2754	35.2753	35.2751	35.2750	35.2752
35.2754	35.2752	35.2751	35.2750	35.2751	35.2752	35.2752
35.2754	35.2754	35.2752	35.2752	35.2752	35.2752	35.2750
35.2750						



Results		
Tolerance (T)		0.0200 mm
Master value (Xm)		35.2750 mm
Average (Xg)		35.2752 mm
Standard deviation (Sg)		0.0001 mm
Aa	|Xm-Xg|	0.0002 mm
Capability Index (Cg)	(0.2*T)/(6*Sg)	5.5458
Capability Index (Cgk)	(0.1*T-Aa)/(3*Sg)	5.0078

Sign _____

And here an example for a study type 2 :

Gauge capability analysis

Type 2-Study

Data Collec...	ComGage V5.20	**Analysis**	ComGage Web Monitor V1.20
Measuring ...		**Department**	
Operator		**Date**	12.10.2026, 10:42:41
Article		**Characteristic**	Diameter 35.275mm
Dimension	35.275 mm +0.01 / -0.01	**Mode**	2 operators measure 10 parts 3 tim...

	Operator 1 [mm]			**Operator 2 [mm]**		
Part 1	35.2752	35.2750	35.2752	35.2748	35.2750	35.2748
Part 2	35.2750	35.2751	35.2750	35.2748	35.2750	35.2752
Part 3	35.2750	35.2748	35.2749	35.2751	35.2750	35.2750
Part 4	35.2749	35.2750	35.2751	35.2748	35.2751	35.2750
Part 5	35.2749	35.2750	35.2748	35.2749	35.2748	35.2748
Part 6	35.2752	35.2750	35.2750	35.2749	35.2748	35.2752
Part 7	35.2752	35.2748	35.2750	35.2751	35.2752	35.2750
Part 8	35.2750	35.2750	35.2750	35.2751	35.2749	35.2749
Part 9	35.2750	35.2750	35.2751	35.2750	35.2748	35.2752
Part 10	35.2749	35.2752	35.2751	35.2751	35.2751	35.2750
Rq	0.0002			0.0002		
Xq	35.2750			35.2750		

Results		
Tolerance (T)		0.0200 mm
Rqq	(Rq1 + Rq2) / 2	0.0002 mm
Xdiff	Xq max - Xq min	0.0000 mm
Repeatability (EV)	3.04 x Rqq	0.0007 mm
%Repeatability (%EV)	EV x 100 / T	3.27%
Reproducability (AV)	3.65 x Xdiff	0.0001 mm
%Reproducability (%AV)	AV x 100 / T	0.61%
Measuring System (R&R)	$sqr(EV^2 + AV^2)$	0.0007 mm
%Measuring System (%R&R)	R&R x 100 / T	3.32%

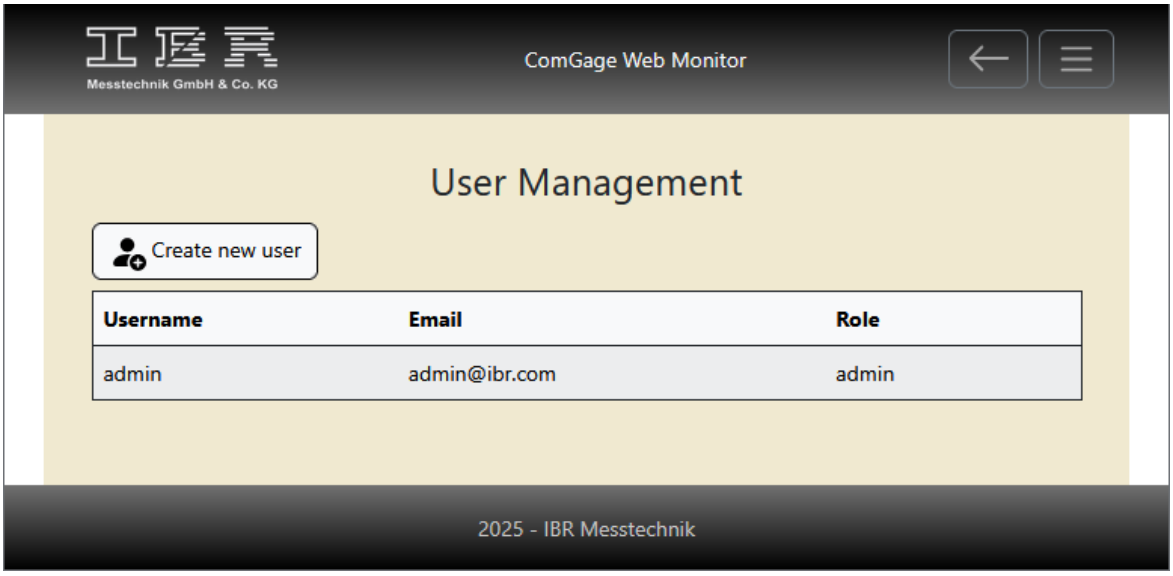
Sign _____

6. User management

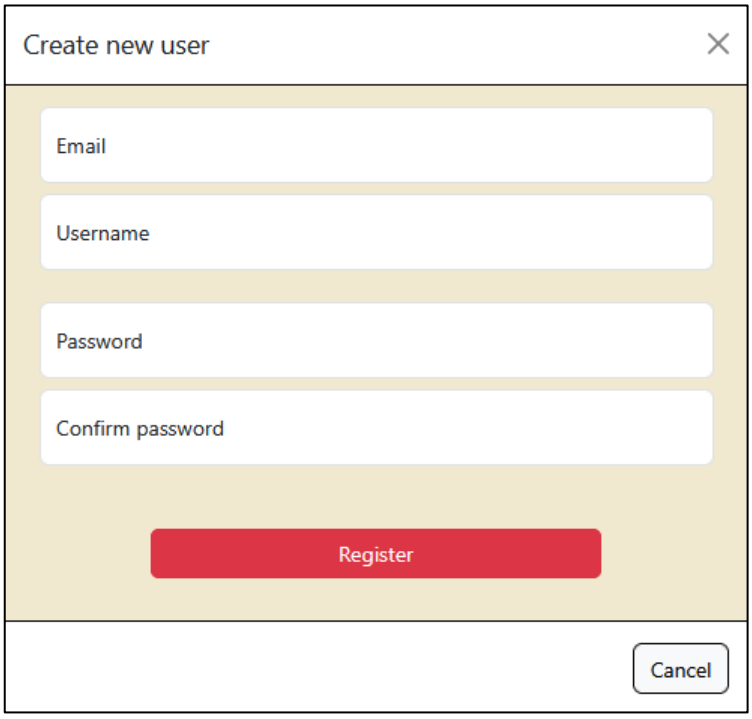
After the installation, one standard user exists in the software :

Username : **admin**
Password : **admin**

This user has the right to create additional users, assign roles and also to delete no longer needed users.
After clicking “User Management” in the main menu (see chapter 3), the following window is opened :



The button **Create new user** can be used to register a new user :



All fields in this window have to be filled in.

The email address and the username can both be used for only one user.
If the email address or the username are already used for an existing user, the new user is not created.

There are no special requirements for the password.

After all fields have been filled in correctly, the new user can be created via the button **Register**.
The button **Cancel** closes the window without creating a new user.

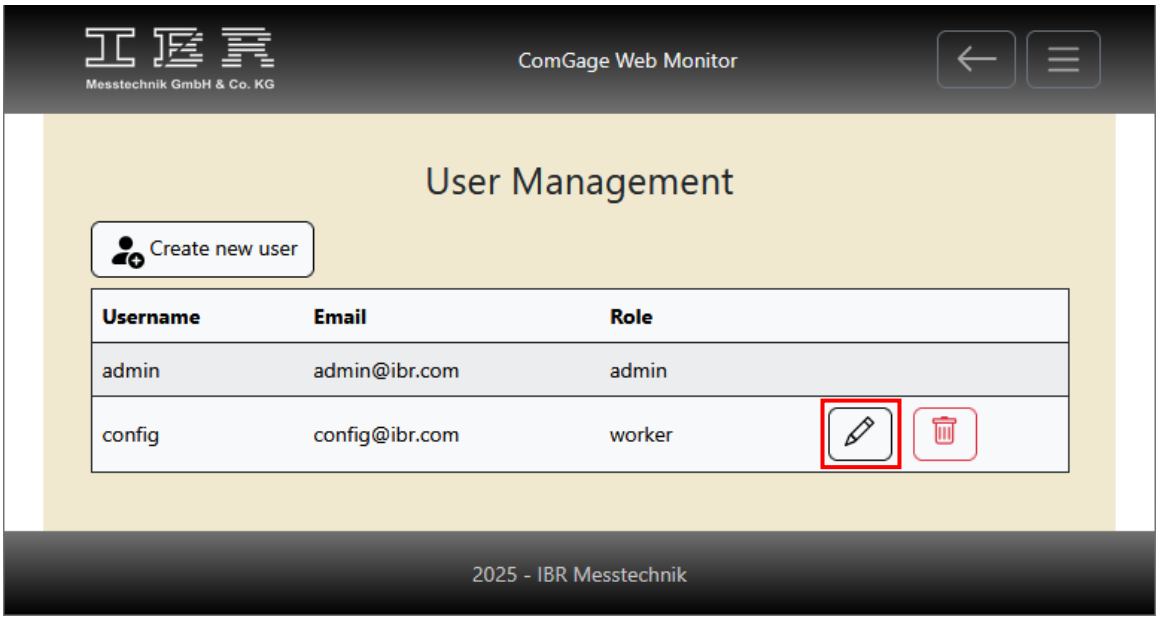
There are three roles that can be assigned to a user :

Worker
This role only allows the monitoring of existing measuring stations. All available information regarding these measuring stations can be accessed.

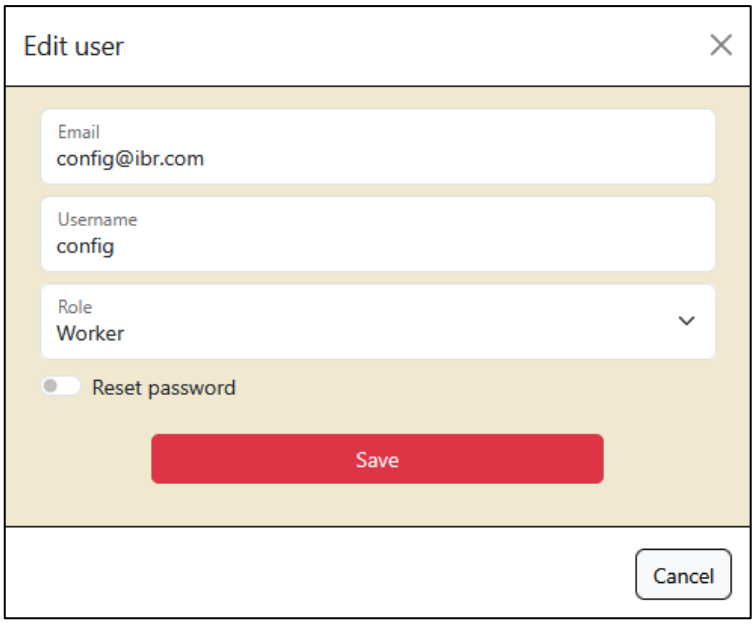
Configuration
This role additionally allows to create, edit and delete measuring stations, as well as to save the existing measuring stations in a file or load them from a file.
It also enables the user to modify characteristic data and register values in running test schemes and test orders (see chapter 4).

Admin
This role additionally allows to use the user management for creating, editing and deleting users.

Each newly created user automatically receives the role “Worker”. To assign a different role, the user has to be opened for editing again :



Here, it is possible to edit the email address, username, role and password of the user :



Note :
The logged in user cannot edit his own settings.

If the standard user (admin) has to be changed, it is necessary to create a new user with the role “Admin” first. After a login as the new admin user, the old admin user can be edited or deleted.

Appendix A

Using an own webserver

The web application “ComGage Web Monitor” (without the installer and without the pre-configured PHP server) can be downloaded via the following link :

https://www.ibr.com/download/ComGage_Web_Monitor_Package.zip

The following points have to be observed if “ComGage Web Monitor” shall be installed on an existing webserver :

- The following directory has to be set as root directory in the webserver :

  “ComGage_Web_Monitor/public/”

  The “index.php” in this directory is used as access point for the web application. Additionally, the webserver needs writing and access rights for the following project path :

  “ComGage_Web_Monitor/writable/”

- At least PHP V8.5.12 has to be installed on the webserver.
- The following PHP extensions have to be activated :
  - curl
  - intl
  - mbstring
  - mysqli
  - openssl
  - pdo_sqlite
  - sqlite3
- The correct “SourceGuardian loader” has to be added to the PHP extensions and has to be activated. If SourceGuardian is not installed, a short information and instructions are displayed when the application is started, which looks approx. like this :

