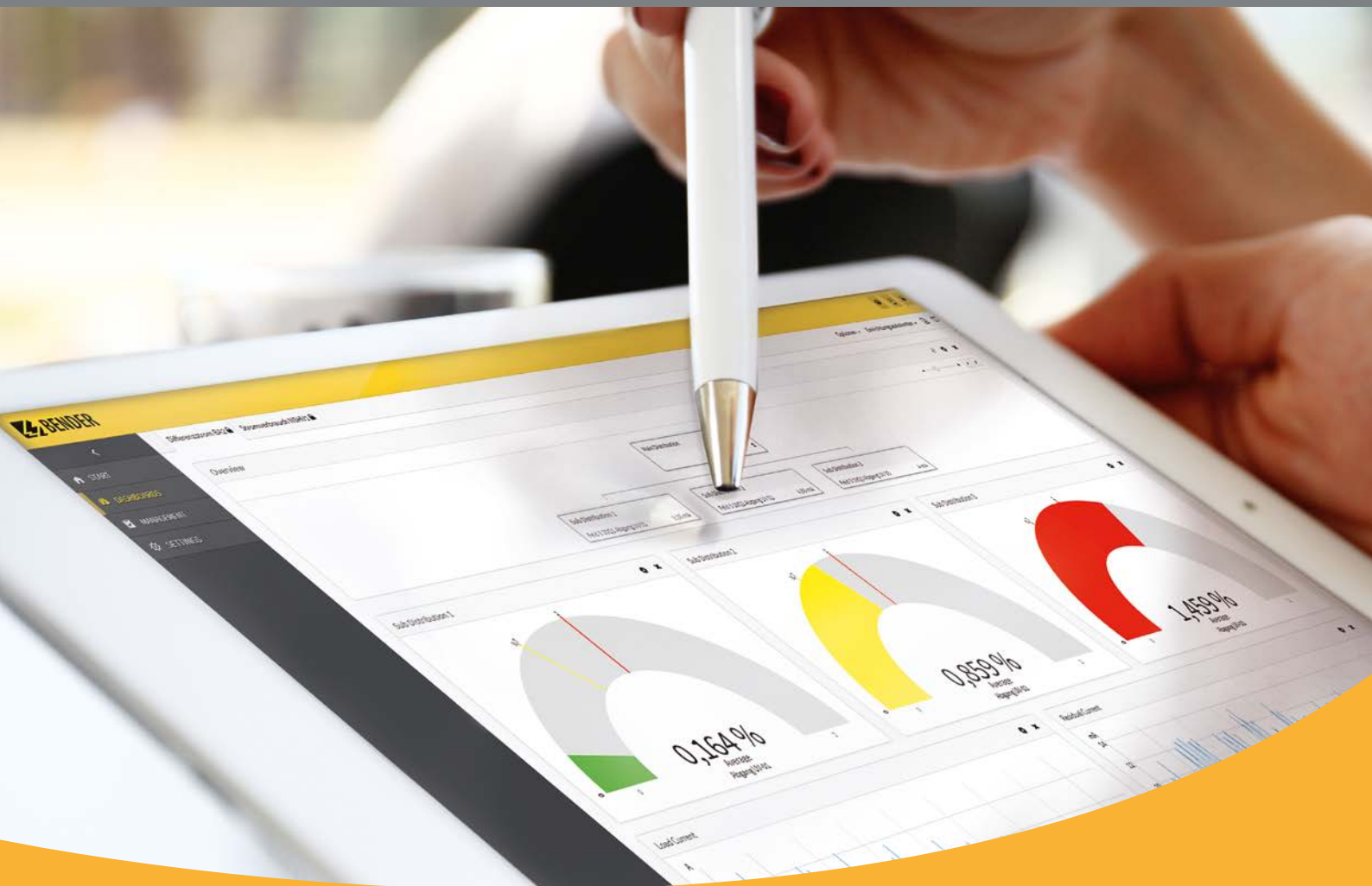


POWERSCOUT®

Recognising connections – optimising maintenance



POWERSCOUT® Features

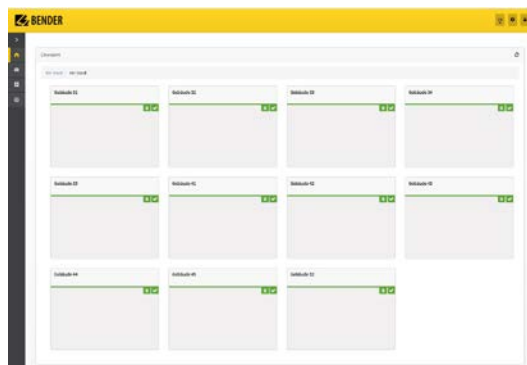
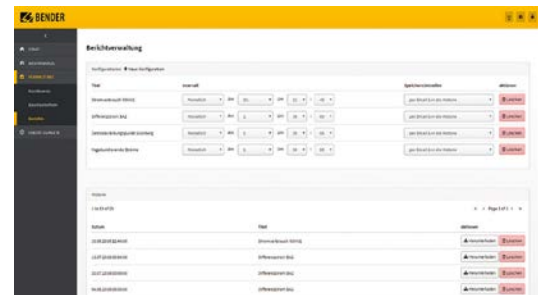
POWERSCOUT® gives you an insight into the entire data of your system at any time, since all measured values are automatically and continuously saved. POWERSCOUT® integrates the data from the measuring and monitoring devices, and generates easily comprehensible visualisations not only for Bender measuring devices but also third-party measuring devices. It records data across locations, which allows comparing several buildings or company locations.

At the same time, POWERSCOUT® supports the analysis of the device data and thereby documents the state of the electrical installation at all times. During the installation, the software can already be individually adjusted to the customer's system and monitoring requirements.

Automated reports

Reports can be generated from the dashboards. A dashboard can always be sent or saved as a report. There is also an option for managing these reports. In the report management, the publishing intervals as well as the storage in POWERSCOUT® can be set.

- Automated report generation
- Freely configurable time periods
- Storing 250 reports in a history
- Sending reports via e-mail



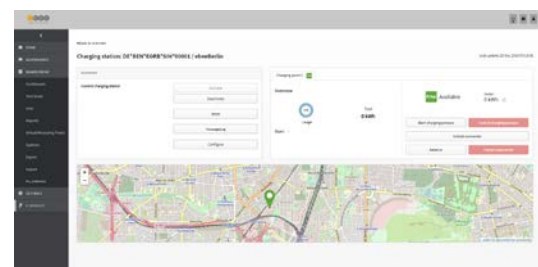
Building and system overview

The installation/system can be displayed by means of freely configurable tiles. As soon as a warning or an alarm (residual current exceeded, insulation fault, upcoming test) occurs in one of the configured parts, it automatically appears on the screen.

- Individual configuration of buildings, floors and rooms or entire plants
- Navigation to the fault source
- Link to the detailed view (dashboard) is possible
- Number of events of the last 28 days can be displayed
- Events and incidents in the system can be counted
- Identification of problematic system parts

Individual appearance

- Logo freely selectable
- Colour setting to match your corporate design (CD)
- Login page can be integrated in your homepage



Configurable dashboards

Dashboards can be used to visualise stored measured values and events. The contents can be structured using configurable widgets. Among other things, time periods and different statistical values can be set. The dashboard can be easily and individually configured using drag and drop.

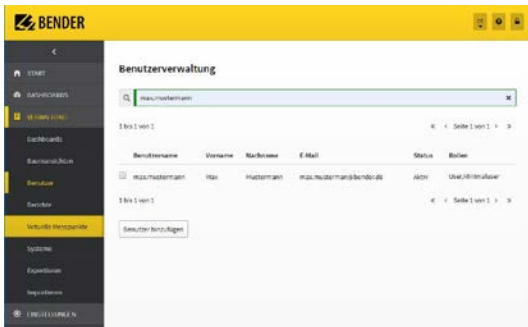
Additional settings are available in the dashboard management, e.g. publishing for other users.

- Configurable dashboards
 - Display of:
 - Charging current
 - Residual currents (DC/RMS)
 - Utilisation
 - ...
 - Comprehensive view by means of configurable widgets
 - Sharing dashboards with other users
 - Regular generation of PDF files + forwarding by e-mail
 - Long-term archiving of the data

Bender support

POWERSCOUT® continuously collects measurements and generates user-specific reports. This well-founded database allows representing real trend curves and finding the causes of malfunctions.

Bender supports you in setting up your system. Please do not hesitate to contact us.

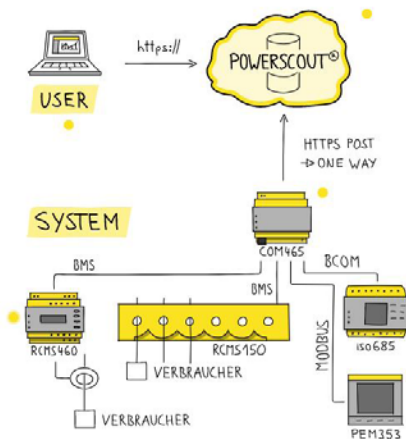
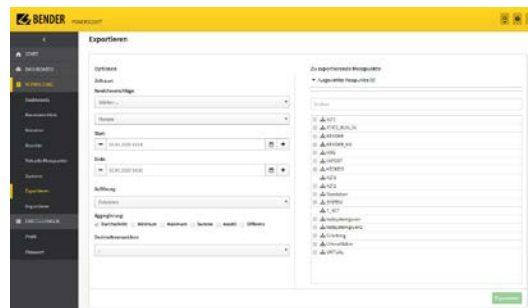


User management

- User management
- Different user rights
- Restricted views

Data import and export

- Indicate format etc.
- Temperatures
- All data etc.



Data access from anywhere

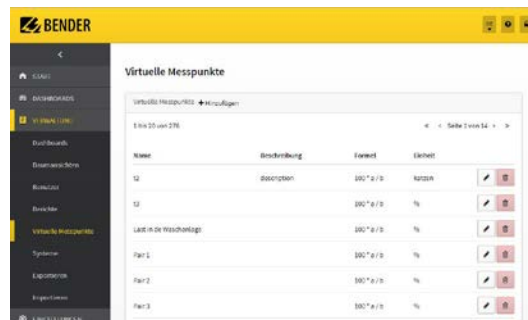
Web-based application

- You can get started immediately after receiving the login details. Your gateway (COM465, CP9xx) sends the measured values to our data centre in encrypted form.
- You will receive automatic updates (security and feature).
- We take care of the backups.

Calculation of key figures

POWERSCOUT® collects data and information across locations. This data can be compiled for fault analysis or calculation of key figures.

- Calculation of data points/measuring points
- Display of virtual measuring points on the dashboard
- Individual naming of virtual measuring points



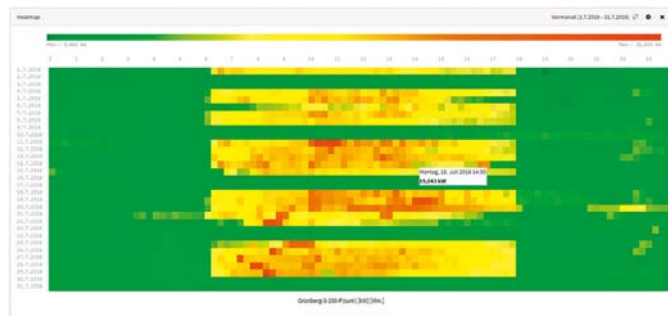
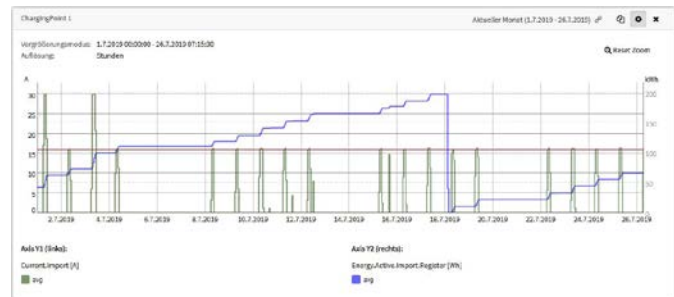
POWERSCOUT® Widgets – Configuration options

Widgets are graphical components that allow individual adjustment of the content displayed in POWERSCOUT®. The widgets can be displayed in individual sizes and positions on a dashboard.

A dashboard can show a time period. The widgets displayed on the dashboard can differ from the set dashboard time and show individual time periods.

Graph

- Linear and logarithmic representation
 - Insulation values can be displayed more clearly
- Scrolling and zooming with the mouse wheel is possible
- Display of events
- Minimum and maximum of the Y axis adjustable
- Two Y axes
- Line colour selection
- Adjustable line width
- Guides can be displayed

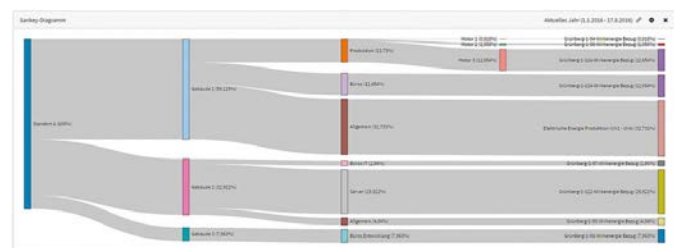


Heat map

- Display particularly striking values in an easily recognisable way
- Colour inversion to allow insulation faults to be displayed as well
- Adjustable limit values

Sankey diagram

- Graphic representation of quantity flows
- Preferably used for energy monitoring
- System view freely configurable

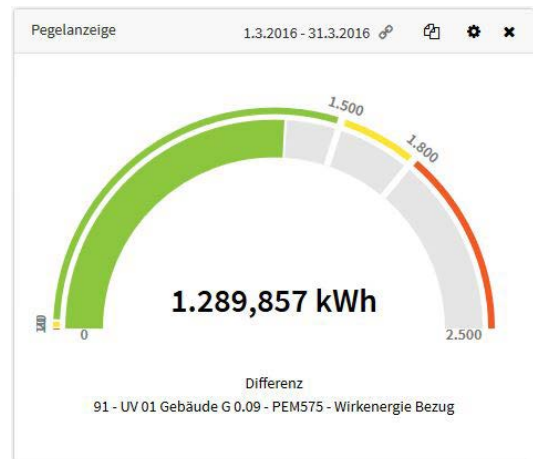


Bar graph

- Display of cumulative meter values in a bar graph
- Grouping of data in ascending order
- Aggregation by days, weeks, months, quarters and years
- Guides can be displayed

Gauge

- Lower and upper limit values flexibly adjustable
- Monitoring of measured values



Messpunktname	Beschreibung	Status
ZS.31.11.001_UNV002_ATICs_Ausfall Leitung 1 ZS	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Ausfall Leitung 2 S1	Ausfall Leitung SV	!
ZS.31.11.001_UNV002_ATICs_Isolationsfehler	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Trafo-Überlast	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Trafo-Übertemperatur	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Überstrom	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Test/Service	Ereignisse	✓
ZS.31.11.001_UNV002_ATICs_Umschalteinrichtung im Handbetrieb	Automatikbetrieb	✓
ZS.31.11.001_UNV002_ATICs_Alarm	Automatikbetrieb	✓

Alarm state

- Display of alarm states
- Fault detection at a glance
- Monitoring of the service state of your system
- Easy detection of residual currents across system parts

Measurement statistics

- Display of a measured value as statistics
- Minimum, maximum and average values can be displayed
- Colour differentiation individually adjustable
- Guides can be displayed

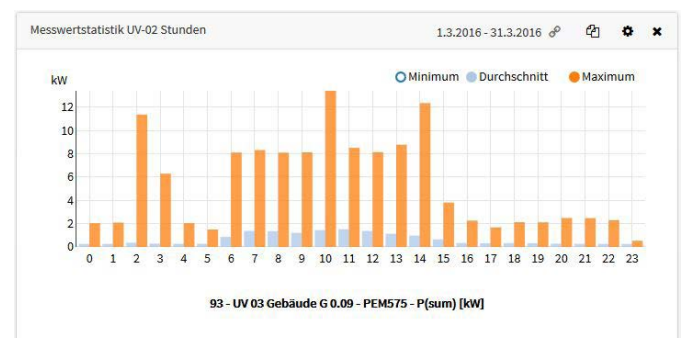


Table view

- Display of measured values in a table
- Minimum, maximum and average values can be displayed
- Complete overview of minimum, maximum and average values of several measured values

Messpunktname	Durchschnitt	Minimum	Maximum
Grünberg-1-126-Frequenz	50 Hz	0 Hz	50,107 Hz
Grünberg-1-126-I(1)	36,899 A	81,438 mA	199,807 A
Grünberg-1-126-I(2)	59,96 A	98,143 mA	335,544 A
Grünberg-1-126-I(3)	59,086 A	0 A	314,869 A
Grünberg-1-126-I(N)	66,668 mA	28,766 mA	164,241 mA
Grünberg-1-126-P (1)	8,158 kW	-6,792 kW	43,502 kW
Grünberg-1-126-P (2)	11,232 kW	-14,956 kW	72,787 kW
Grünberg-1-126-P (3)	11,627 kW	-14,065 kW	68,871 kW
Grünberg-1-126-U(1-N)	228,419 V	220,636 V	234,952 V
Grünberg-1-126-U(2-N)	228,665 V	220,833 V	236,297 V
Grünberg-1-126-U(3-N)	228,685 V	221,342 V	236,053 V

Anzahl der Ereignisse	Ereignis	Messpunkte	Typ	Status	System	Subsystem	Code
2	Differenzstrom	PAW 1 1702 Abgang V1 2	Vermutung	Beginn	Störung	I	NOM 1 PAW 12 47 A 1 0 0 0 0 (MCHS 485 0) (0)
2	Differenzstrom	PAW 1 1702 Abgang V1 2	Vermutung	Ende	Störung	I	NOM 1 PAW 12 47 A 1 0 0 0 0 (MCHS 485 0) (0)
1	Differenzstrom	PAW 1 1002 Abgang V1 3	Vermutung	Beginn	Störung	I	NOM 1 PAW 12 47 A 1 0 0 0 0 (MCHS 485 0) (0)
1	Differenzstrom	PAW 1 1002 Abgang V1 3	Vermutung	Ende	Störung	I	NOM 1 PAW 12 47 A 1 0 0 0 0 (MCHS 485 0) (0)

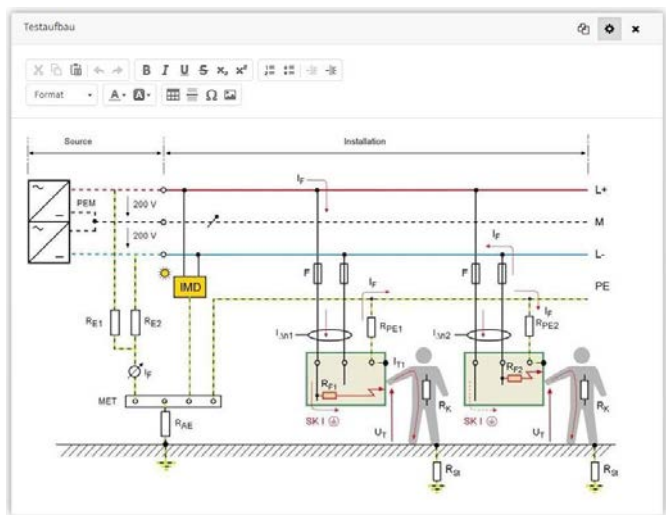
Event statistics

- Documentation of events
- State display of channels
- Start and end of events
- Tabular view
- Targeted search for events

Event protocol

- Documentation of events
- State display of channels
- Start and end of events
- Tabular view
- Targeted search for events

Datum	Ereignis	Typ	Status	Messwert	Messpunkte
30.12.2019 04:55:13	Differenzstrom	Warnung	Beginn	140 mA	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:55:13	Differenzstrom	Warnung	Beginn	160 mA	FAS 30.12.19 04:55.2 11000 1113 Leiter/Leiterschaltung 3.3 F 113
30.12.2019 04:55:26	Differenzstrom	Warnung	Ende	--	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:55:26	Differenzstrom	Warnung	Ende	--	FAS 30.12.19 04:55.2 11000 1113 Leiter/Leiterschaltung 3.3 F 113
30.12.2019 04:55:41	Differenzstrom	Warnung	Beginn	116 mA	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:55:51	Differenzstrom	Warnung	Ende	--	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:55:59	Differenzstrom	Warnung	Beginn	142 mA	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:55:59	Differenzstrom	Warnung	Beginn	104 mA	FAS 30.12.19 04:55.2 11000 1113 Leiter/Leiterschaltung 3.3 F 113
30.12.2019 04:56:05	Differenzstrom	Warnung	Ende	--	FAS 30.12.19 04:55.2 11000 104 Netzschaltung
30.12.2019 04:56:05	Differenzstrom	Warnung	Ende	--	FAS 30.12.19 04:55.2 11000 1113 Leiter/Leiterschaltung 3.3 F 113



Text editor

- Description of dashboards
- Adding custom images

Range of features

- Transmission of measured values every 15 min
- Resolution of the data as a function of the velocity of the bus system
- 16 visible dashboards
- 256 public dashboards
- Commissioning wizards
 - Residual current
 - Stray currents
 - Neutral conductor
 - Central earthing point
- Dashboard management
- Tree views management
- Report management
- Automated sending of reports
- Integration via CP700, COM465IP and COM465DP
- Integration of third-party devices
- A web-based application for all types of devices
- Languages
 - English
 - German
- User management
- Supported browsers
 - Chrome
 - Firefox
 - Internet Explorer

Commissioning wizards

The wizards support the user in generating dashboards and reports. With just a few steps, meaningful dashboards related to a specific subject of electrical safety can be generated.

Residual current

The commissioning wizard supports you in creating a dashboard that allows evaluating the level of the residual current at a glance. The ratio of residual current and load current is calculated.

Stray currents

The wizard for stray currents indicates the system parts where excessive stray currents exist.

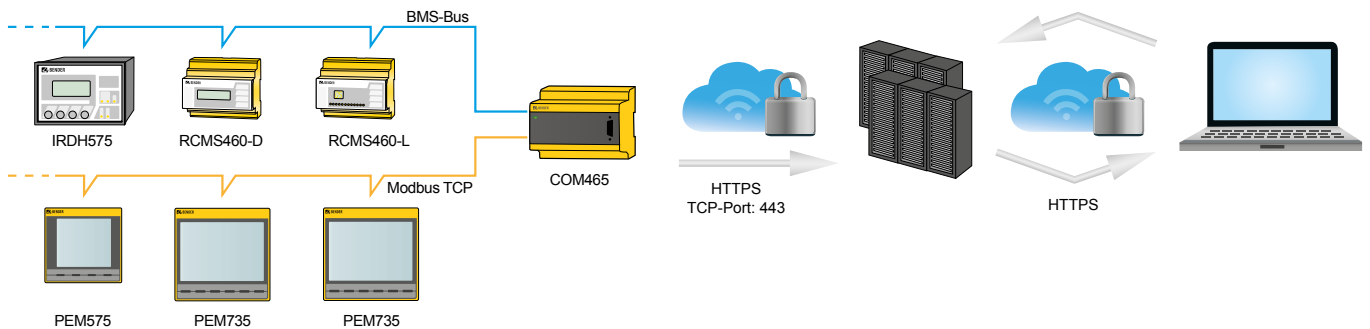
Central earthing point

The central earthing point wizard generates a meaningful visualisation for the user by querying the current at the CEP and the corresponding phase current.

Neutral conductor

The excessive load on the neutral conductor challenges many system operators. The commissioning wizard evaluates the neutral currents and indicates whether they are too high.

System architecture



Overview price model

Model	Collectors (gateways)	User	Type	Art. No.
Hosted	up to 2	10	POWERSCOUT 2	B95061500
	up to 5	20	POWERSCOUT 5	B95061501
	up to 10	40	POWERSCOUT 10	B95061502
	> 10	> 40	POWERSCOUT project	B95061503

If you choose the **Hosted** model, we will operate POWERSCOUT® for you in a German data centre.
We take care of updates and maintenance for you.



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BENDER Group