E-mobility ready. Save energy
while leveraging the full functionality
of charging equipment.

**With load and charging management
from TQ-Automation.**

MONITOR.
ANALYSE.
OPTIMISE.

Save energy and money
while leveraging the full functionality of charging equipment

Electricity is expensive. It is also a precious resource. So it is important to know your energy consumption at all times. For commercial and industrial applications it is especially useful to be able to avoid unnecessary consumption, peak loads and energy traps with automation that allows you to log energy usage and optimise consumption. The DM100 system from TQ-Automation is perfect for this task.

E-mobility is coming. And we are ready for it.

The social significance of E-mobility is fast increasing and creating new challenges every day. So infrastructure for charging electric cars is no longer a topic limited to urban areas or car parks. No, it is becoming an essential facility for employers, public authorities and private homes alike.

TQ-Automation is committed to this technology and has a comprehensive range of product solutions that take account of these trends and challenges. With the DM100, TQ-Automation provides the answer to many E-mobility questions through decentralized automation and intelligent integration of electricity charging stations into the energy management systems of buildings and production locations.

The challenges of E-mobility.

- Avoiding high energy costs caused by peak loads
- Dynamic electricity prices
- Increasing need for energy due to E-mobility
- Setting up and extending the charging capacity for electric vehicles where the necessary power input is unavailable
- Compliance with VDE-AR N 4100 "Active power control" to obtain approval to install charging stations
- Automation to allow the use of existing cable cross-sections
- Charging priority control (no grouping)

The perfect solution starts with high quality components

The Energy Manager makes your consumption transparent and easy to document. The modular system can be precisely tailored to your needs and requirements. It can also be extended at a later date.

Up to 96 measuring points can be connected to each Energy Manager, making this TQ-Automation solution unbeatable in terms of cost-efficiency.

The Energy Manager is ...

- Your first step towards lowering your power consumption
- Simple to install and easy to integrate
- A cost-effective and high quality solution
- Accurate and easy to analyse
- Future-proof with an extendable modular structure
- The perfect basis for an energy management system

Quick to install with central analysis

Easy installation and a central, clear analysis with attractive visualisation – we focus especially on these two aspects.

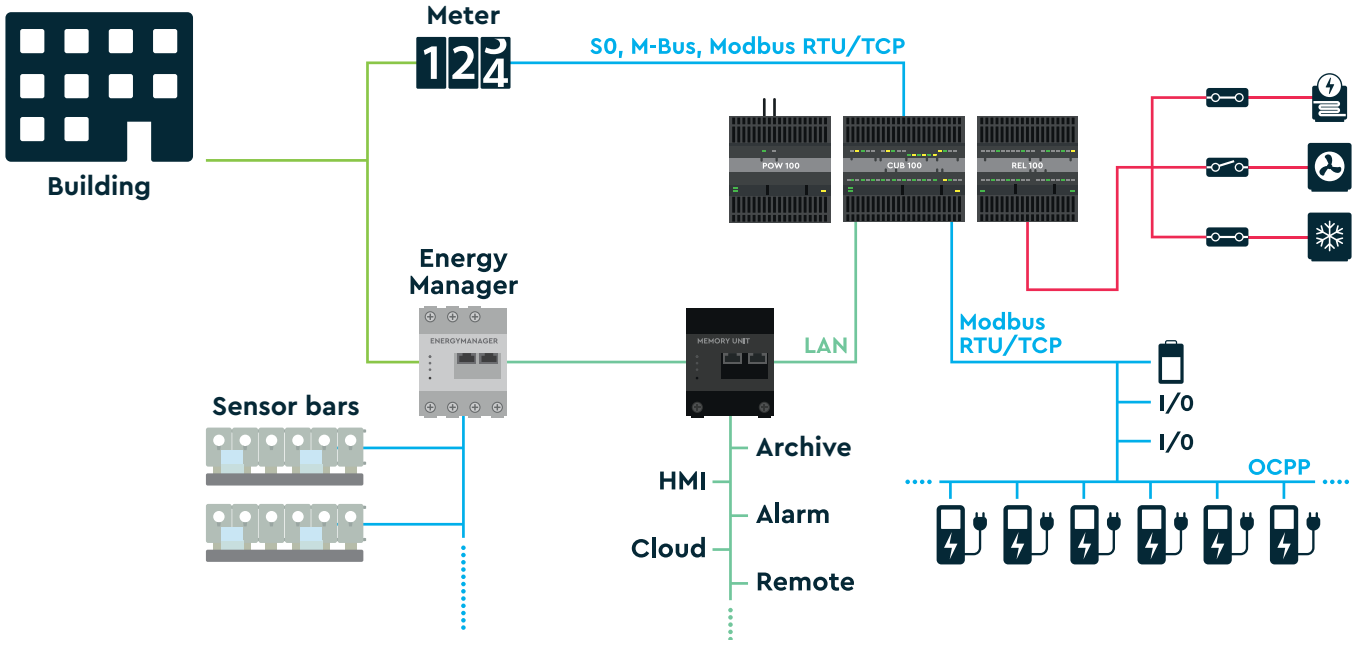
- The patented Energy Manager is installed directly in the sub-distribution boards
- Simple and compact installation on the existing DIN rails
- External current transformers can be easily connected if required
- Direct connection to the unit up to 63 A (higher nominal currents will need current transformers)
- Integrated communication module and high-capacity memory
- Data transfer via LAN, WiFi or RS485 interface using Modbus TCP and RTU
- Central software for visualisation and archiving
- Automatic cost centre reporting
- No additional communication devices needed

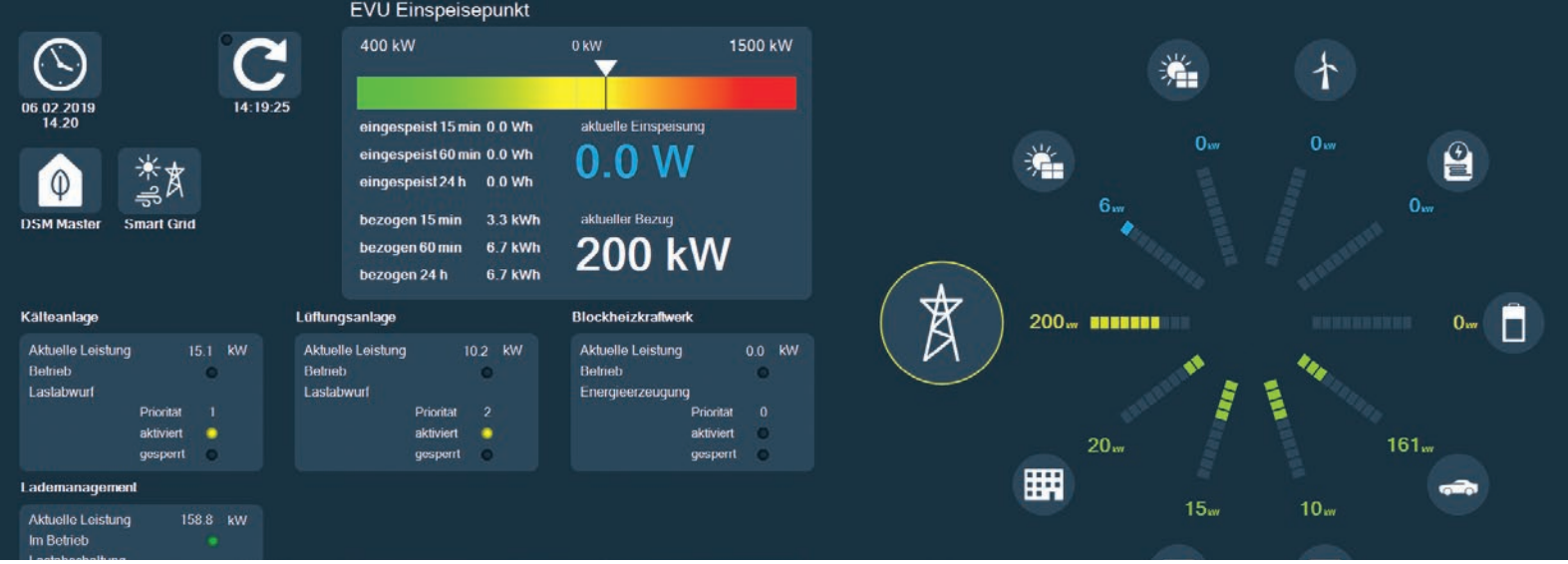
Essential automation.
The DM100 system.

Today's commercial and industrial buildings are faced with a number of challenges with respect to E-mobility and the increasing demand for energy associated with it. Intelligent automation is essential in order to avoid unnecessary peak loads or even complete blackout.

With the DM100, TQ-Automation offers an innovative approach with a range of entirely new options for integrating charging infrastructure. One example is the unique combination of a dynamic load controller with intelligent electricity cost optimisation feature, including blackout and overload protection.

- Protection of the grid connection point against overload (blackout protection)
- Variable activation of the consumption points to avoid peak loads (peak load shaving)
- Documentation of the power consumption and data displayed on decentralised units or via the cloud
- Dynamic use of power generation equipment to increase internal consumption
- Integration into energy management and building automation systems
- Static and dynamic use of variable electricity pricing to allow integration into the smart grid and reduce energy costs
- Compatibility with almost all established charging station manufacturers





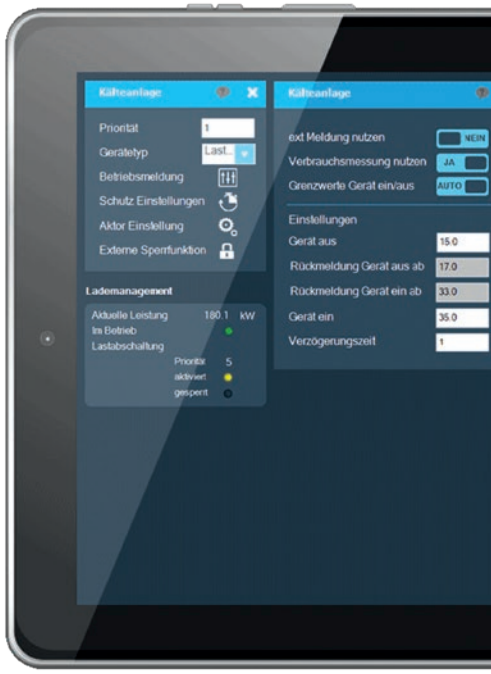
Intuitive visualisation
and easy set-up.

TQ-Automation components have been combined to create an intelligent load management system that is easy to install in a decentralised location and is perfect for use in control cabinets.

Set-up and programming are carried out at the integrated HMI. A master monitors the supply capacity and power input, and shuts off consumption points or starts up electricity generators as required.

The sequence for shutting off the individual consumption points or adding supplementary generators can be programmed individually, as can the minimum shut-off times and any restrictions, such as times when specific units cannot be shut down. The switch-off levels are adjusted dynamically within the metering period according to the preset time delays (see Fig. 2). For example, when the metering period starts, the delay is 120 seconds. This is gradually decreased during the metering period until it is just ten seconds.

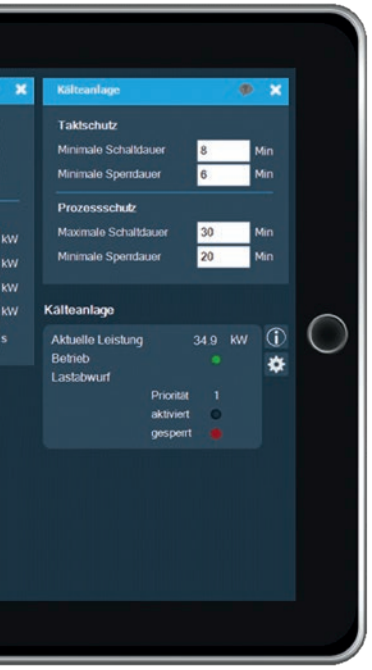
If the current power consumption exceeds the (building's) power input, the switch-off sequence (shut-off level) is extended at 10-second intervals, for example, until the power consumption is back within the range of the (building's) power input. The switch-off sequence is reset at freely selectable intervals.



- Electricity consumption points are shut off according to the set shut-off sequence
- Electricity generators are started up according to the set shut-off sequence (CHP unit, (emergency) generator, switchover to PV, storage battery)
- Specific features of the consumption point are taken into account
  - To protect the connected device
  - To guarantee a minimal service
  - To prevent shut-off during main usage periods, if necessary

The DM100 functions at a glance

- Unique combination of load management and charging management (scalable)
- Records and monitors power consumption
- Peak load shaving cuts energy costs
- Can be integrated into the building automation system
- Superordinate visualisation included as standard



Customer benefits

- Form factor: wiring costs are minimised by installation in the central distribution box or a decentralised fused distribution panel
- Scalability: from the data logging (individual circuit breakers!) and energy management (visualisation) through to the intelligent load management
- Long-term ROI: further loads can be added at any time
- Quality: manufactured to IPC 610 class 3 (highest quality standard) for industrial electronics
- Compatible with almost all charging station manufacturers

Get in touch

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