

# Transparent energy flows

The easy retrofit solution: Clear overview of network activities with the communication-capable SENTRON 3NA COM LV HRC fuse link

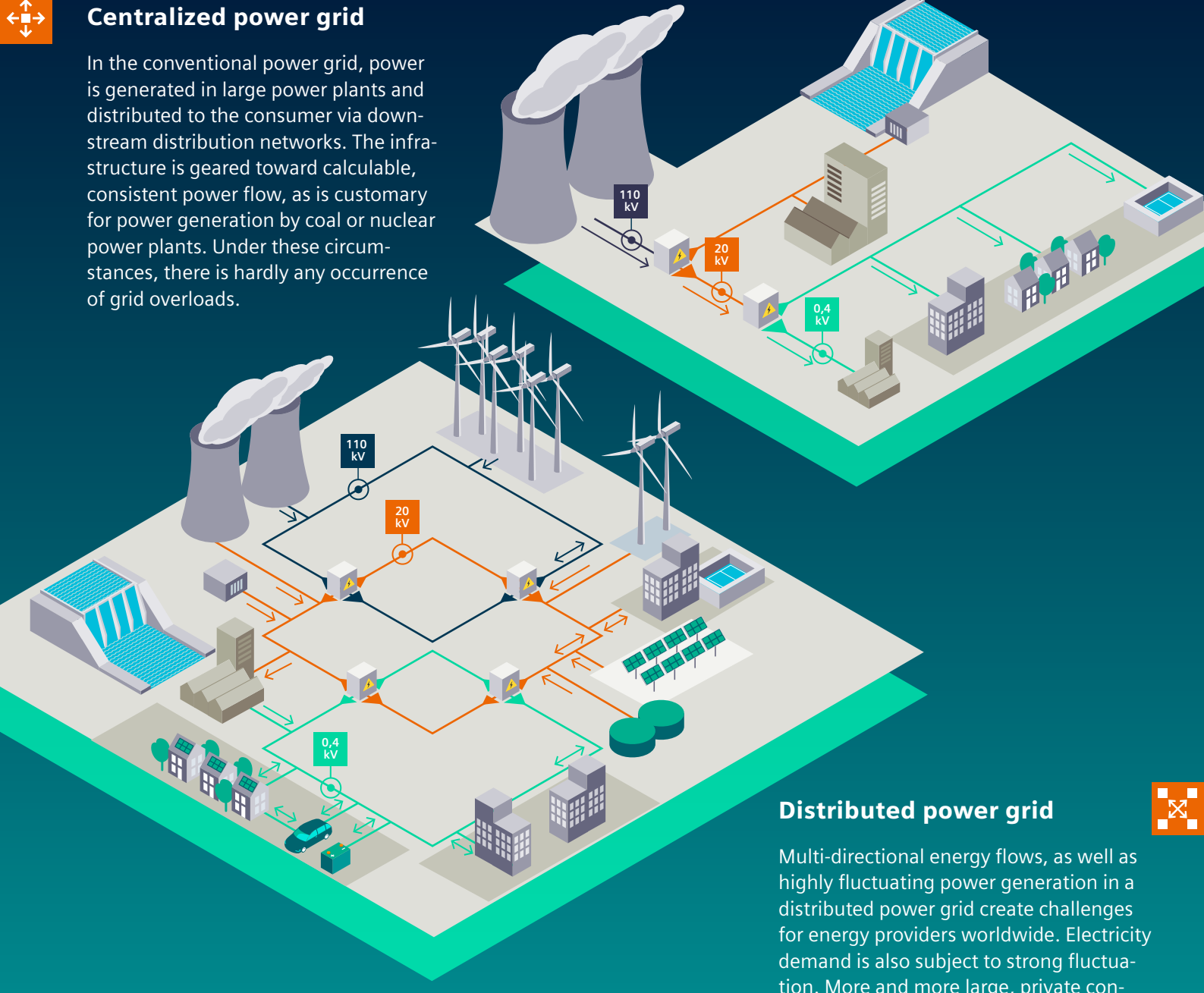


## Power landscape in times of change

The power landscape is currently undergoing a transformation from a centralized to a distributed system. Renewable energies are gaining in importance, and more and more consumers are becoming "prosumers", who generate their own electricity by means of photovoltaic systems. To ensure demand-based coordination of generation and consumption, it is necessary for the power grid to become "more intelligent".

### Centralized power grid

In the conventional power grid, power is generated in large power plants and distributed to the consumer via downstream distribution networks. The infrastructure is geared toward calculable, consistent power flow, as is customary for power generation by coal or nuclear power plants. Under these circumstances, there is hardly any occurrence of grid overloads.

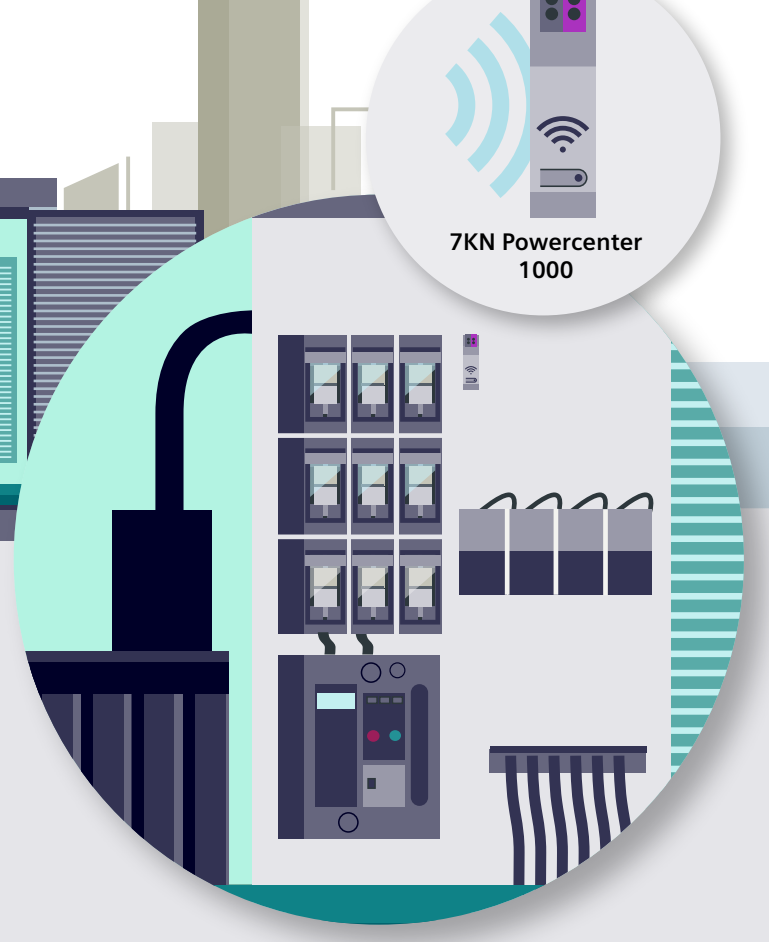


### Distributed power grid

Multi-directional power flows, as well as highly fluctuating power generation in a distributed power grid create challenges for energy providers worldwide. Electricity demand is also subject to strong fluctuation. More and more large, private consumers, as well as e-car charging stations, for example, make it more difficult to estimate the demand.

## Transparency for the local grid transformer station

As transformer stations are frequently not networked, overloads that are detected too late lead to mains failures and consequential damage. The detection and pinpointing of power interruptions take a lot of time. The communication-capable 3NA COM fuse opens up a straightforward way to integrate local grid transformers as central junctions in digital systems and bring transparency into network activities. Power utilities can use the fuse in critical places in local grid transformer stations in order to monitor the downstream grid. Power outages are remedied significantly more quickly and repair costs are lowered.



## Easy retrofit

The communication-capable 3NA COM fuse has the same dimensions as conventional LV HRC fuse systems. For the retrofit, it can be easily used in existing fuse bases and safety switching devices of existing 400 V power distribution systems. Thanks to wireless communication, it involves no additional wiring effort for data

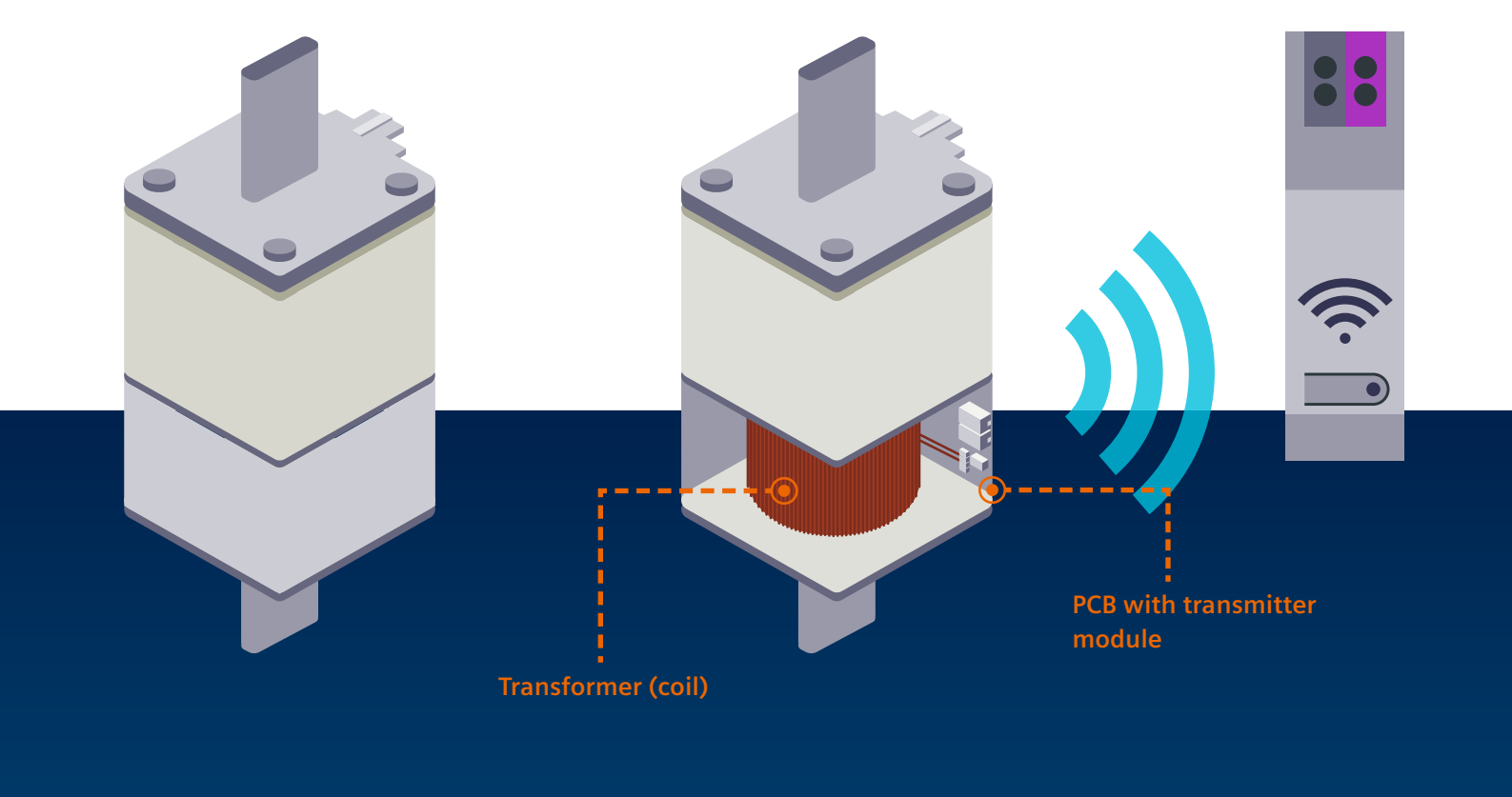
transfer. All that is necessary is for the SENTRON 7KN Powercenter 1000 data transceiver to be integrated as a central interface into the power distribution board. Connecting the 7KN Powercenter 1000 and fuse is very simple per app.



## Sustainable and robust design

The communication-capable 3NA COM consists of a fuse component and an electronic module. The fuse component, like conventional LV HRC fuse systems, trips in case of short circuit and overload. The electronic module contains an integrated current transformer, which measures current. The data is processed on an adjacent printed circuit board and sent wirelessly to the 7KN Powercenter 1000 via a

ZigBee transmitter. Both components are easily plugged together, so that after tripping, only the fuse needs to be changed, whereas the electronic module can be reused. That keeps a lid on costs and contributes to sustainable handling of electronic components.



## Powerful interface for digitalization

In combination with the 7KN Powercenter 1000, the communication-capable 3NA COM fuse connects the low-voltage power distribution seamlessly with higher-level digital systems. The 7KN Powercenter 1000 processes the data of up to 24 fuses. Straightforward commissioning and parameterization are ensured via the SENTRON powerconfig mobile app, using a smart phone or tablet. The measured values can be visualized in a local monitoring system such as the SENTRON powermanager in the Intranet or Internet. Alternatively, they are transmitted via MODBUS TCP to automation and remote control devices of the SICAM A8000 series and can thus be integrated into SCADA systems or cloud-based applications.

