A permanent supply in any environment – today and in the future
High-performance power supply – fit for digitalisation
Let's connect.

Power supplies

Weidmüller

Make the most of high savings potential and increased efficiency

PROtop power supplies – efficient and sustainable

Production processes constantly need to be made more efficient. As well as performance, energy efficiency and sustainability are also playing an increasingly important role in cutting-edge industry. PROtop power supplies combine excellent performance data with exemplary sustainability, which has a positive impact on the productivity of the entire production facility.

- Sustained reduction in energy costs thanks to improved efficiency
- Increased system availability thanks to long service life and high MTBF values
- Extremely space-saving design types for high functional density

PROtop can achieve significant savings compared to conventional power supply units. Its increased efficiency saves an average of 50 kWh per day in a medium-sized production facility with approx. 100 PROtop power supplies working in three-shift operation. This adds up to over 15,000 kWh a year and also improves the facility's carbon footprint. The service life, which is twice as long as that of standard power supplies, also sustainably reduces the costs of repurchase and exchange.

Optimally suited to the automotive industry thanks to a reliable supply and sustainable energy savings: three-phase PROtop power supplies have an efficiency level of up to 95.3% and an MTBF value of over 1,000,000 hours.

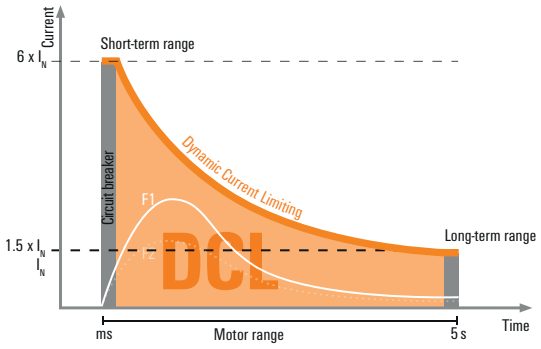
Perfect for the food industry thanks to complete data transparency: communication-capable PROtop power supplies can be easily integrated into control systems and are particularly space-saving.

Sustainable and innovative device concept

- Optimum efficiency levels (up to 95.3 %) for sustainable energy savings
- High MTBF values (> 1,000,000 h) for permanently high system availability
- Direct parallel switching without diode modules thanks to integrated ORing MOSFETs for reduced system costs

Outstanding peak load reserves

- High dynamic range thanks to unique DCL (dynamic current limiting) technology
- Continuous peak load reserves from millisecond to second range
- Ideal for reliably triggering circuit breakers or for powerful motor starts



Highly future-proof

- Complete data transparency through to the cloud
- Remote controllability for integration into machine control systems
- CANopen communication protocol; others in preparation

Compact dimensions and maximum flexibility

- Up to 40% space savings for increased functional density within the control cabinet
- Wide range of uses thanks to various operating modes
- Variable connection options thanks to plug-in terminals, with time-saving PUSH IN connection system or traditional screw system

Reliable, powerful, efficient and communication-capable

PROtop: the future-proof high-end power supply

Communication-capable components form the basis of networked production and can be used to exploit the potential of Industry 4.0. They can record product and status-oriented data, as well as machine-internal measured values and energy parameters, and store them in a cloud. Based on the evaluated data, new services can be established for the optimisation and diagnosis of production processes or for energy management. All devices should therefore be networked as quickly as possible and connected to a cloud.

Communication-capable with retrofit solution

PROtop can be retrofitted with a communication module for the requirements of tomorrow. This retrofit solution is simply connected to the PROtop power supply and allows for the transmission of process data to the higher-level control system. This networks the power supply to other components within the system. The solution is remote-controllable and is integrated into a system's condition monitoring system.

Process optimisation with condition monitoring

Condition monitoring allows for comprehensive process optimisation, such as reduced power consumption or the systematic planning of maintenance work. This considerably increases the functional reliability and efficiency of an extremely wide range of systems – in food and packaging systems with high hygiene requirements or in hard-to-access wind power installations in offshore wind parks.

The benefits of the PROtop communication module

- Simple integration of process data into the higher-level control system for improved condition monitoring
- New solutions such as voltage tracking or load cut-off thanks to remote control capability
- Simpler commissioning thanks to automatic parameterisation via machine control and minimal maintenance work

Automated and digital

Future-proof Industry 4.0 solutions from Weidmüller

Digitalisation

- Combination of automation and digitalisation in order to optimise production output
- Leading edge thanks to data-based business models such as applicationspecific Analytics solutions for the detection of anomalies and Predictive Maintenance

www.industrial-analytics.weidmueller.com

Automation

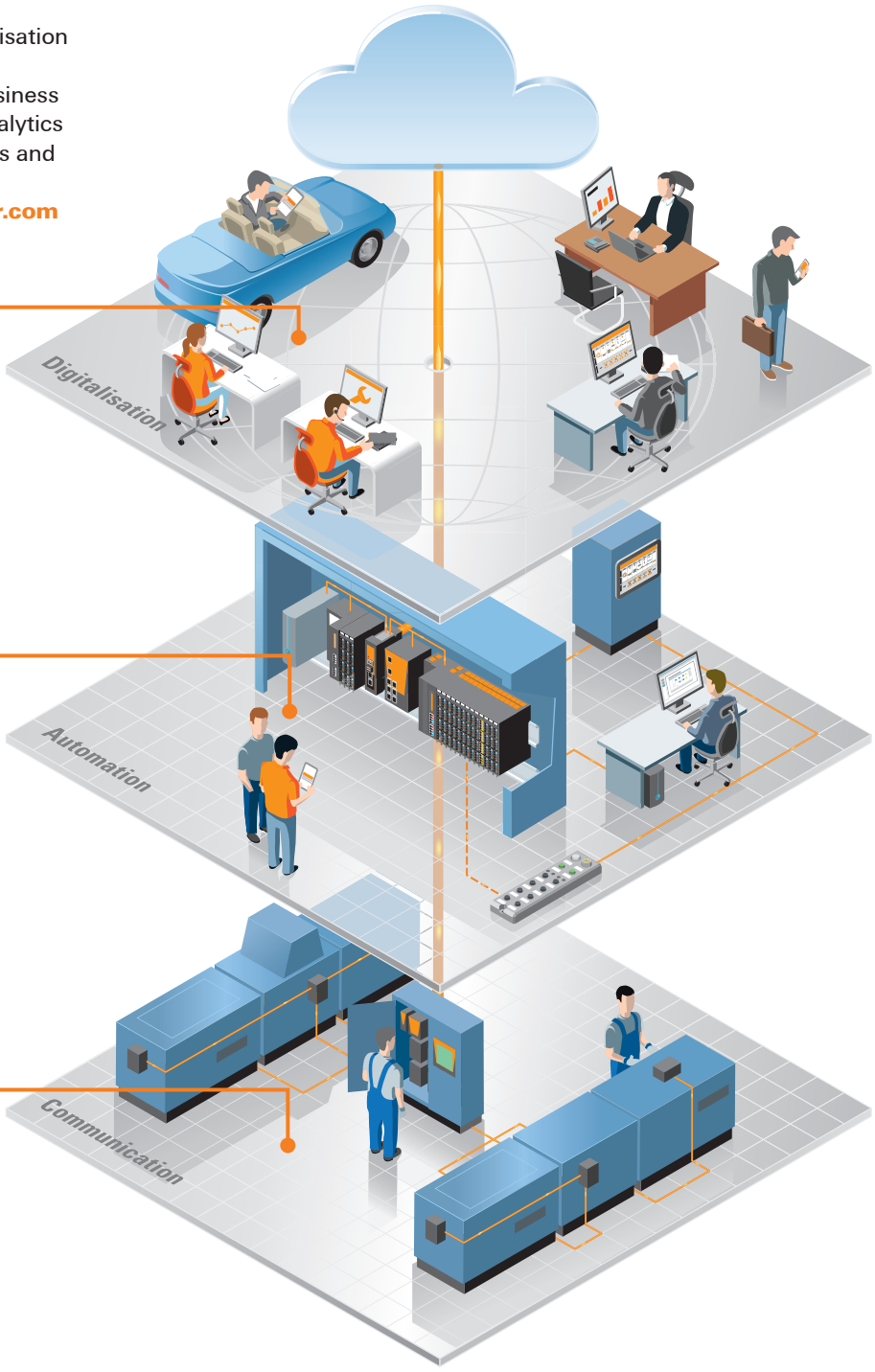
- Open, platform-independent automation toolbox u-mation
- Optimally tailored components u-control, u-create, u-remote and u-view for customised automation solutions

www.u-mation.com

Communication

- Communication-capable components such as PROtop for the quick provision of process data for intelligent networking of machines and IT systems

www.weidmueller.com/protop



Direct parallel connection option without diode modules

Integrated ORing MOSFETs increase efficiency

ORing MOSFETs

Innovative elements such as the integrated ORing MOSFETs set new standards in the field of power supply units. These elements reduce system costs and increase system availability.

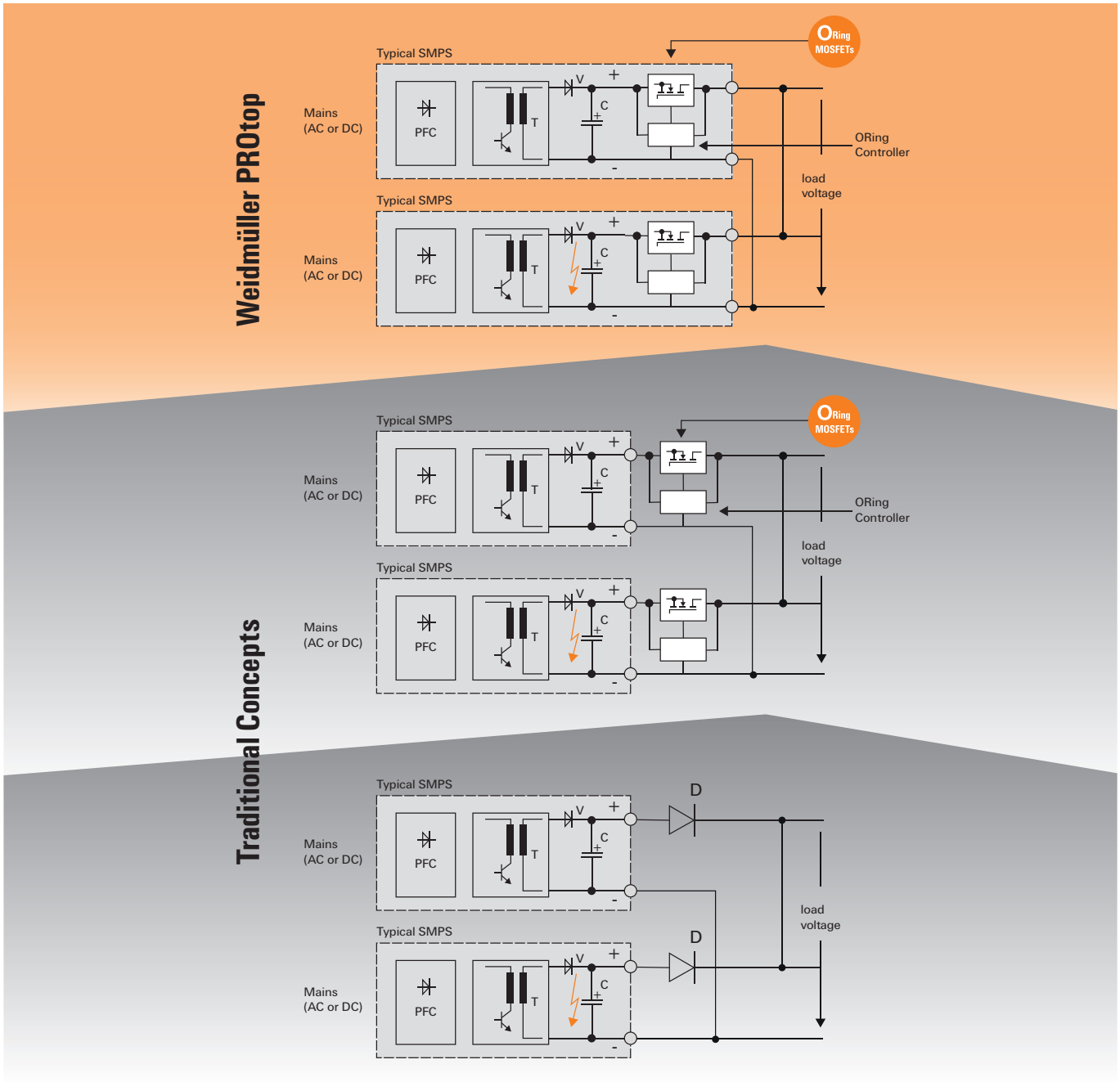
Conventional redundancy concepts require additional redundancy or diode modules with high space requirements and large power losses. Newer systems with MOSFET transistors reduce power loss to approx. 10% but still take up a lot of space in the control cabinet.

The integrated ORing MOSFETs in PROtop provide high power with minimal dimensions and do not require any additional assembly or wiring work. This reduces system costs and saves space in the control cabinet. The parallel operation option makes current sharing easier and guarantees maximum long-term stability.

The benefits of integrated ORing MOSFETs

- Accelerated build-up of a redundant power supply
- No additional redundancy or diode modules
- Reduced space requirements
- Lower system costs
- Increased system availability

PROtop guarantees maximum supply reliability for continuous operation systems in particular. This is achieved thanks to the reliable redundant power supply, the long-term stability as a result of the parallel connection option with ORing MOSFETs and the corrosion-proof protective coating on the PCBs.



Simpler build-up, improved performance: systems with traditional diode and redundancy modules compared to PROtop power supply systems with future-proof ORing technology.

Topic	With ORing technology	Traditional concepts
Long-term stability	very good to excellent	medium to good
Adjustment e.g. @24 V DC	no (thanks to parallel operating mode)	yes, fine adjustment due to cable resistances
Number of components	2 x PSU (power supply units)	2 x PSU + redundancy module
Wiring	optimised	additional cables for power and signals
Space requirement	optimised	20–40% more
Power loss	reduced to a minimum	significantly higher
System costs	optimised	higher
N+1 redundancy / more than 2 PSU	yes	no

The ORing technology in the PROtop power supplies improves performance and reduces system costs.

Outstanding peak load reserves thanks to DCL technology

PROtop meets the highest demands

DCL

High-end power supplies need to perform efficiently and reliably even in challenging industrial environments. This requires high power reserves, a long service life and optimal protection against surge voltage, vibration and extreme temperatures.

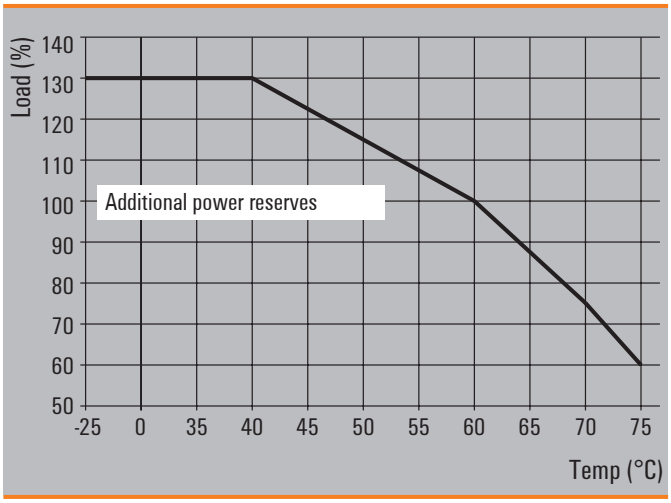
PROtop power supplies have a particularly robust network input level and are not sensitive to mechanical influences. This guarantees reliable operation even in challenging conditions such as those in wind power installations.

Thanks to the future-oriented DCL (dynamic current limiting) technology, high pulse reserves are available at all times. The resulting dynamic range can be used for the reliable triggering of circuit breakers or for powerful motor starts. At a motor's starting torque, for example, approx. 300% power reserve will be available for approx. 100 ms, and 150% for approx. 5 s.

The benefits of DCL technology

- Reliable triggering of circuit breakers
- Dynamic and powerful motor starts
- Additional power reserves

Derating curve



Economical and reliable supply even in extreme conditions: single-phase PROtop versions with innovative DCL technology for permanently reliable operation – even at –40 °C

Single-phase PROtop power supplies in standard design

- For connection to AC or DC systems: 85–277 V AC / 90–410 V DC
- 12 / 24 / 48 V versions in performance classes 72W to 960W
- Time-saving PUSH IN connection system

Three-phase PROtop power supplies in standard design

- For connection to AC or DC systems: 3x320–575 V AC / 450–800 V DC
- 24 V and 48 V versions in performance classes 120 W to 960 W
- Optimum efficiency levels (up to 95.3%) for sustainable energy savings

Single-phase PROtop power supplies with PCB protective coating

- Extended operating temperature range of -40 to +70°C for use under extreme conditions
- PCB protective coating for increased corrosion protection in harsh environments
- 480 W and 960 W versions with DC output plug for easier "hot swapping"

Accessories for PROtop power supplies

- Attachable CANopen communication module
- CAN adaptor cable (RJ45 to SUB-D) for connection to master assemblies
- Mounting bracket for direct assembly