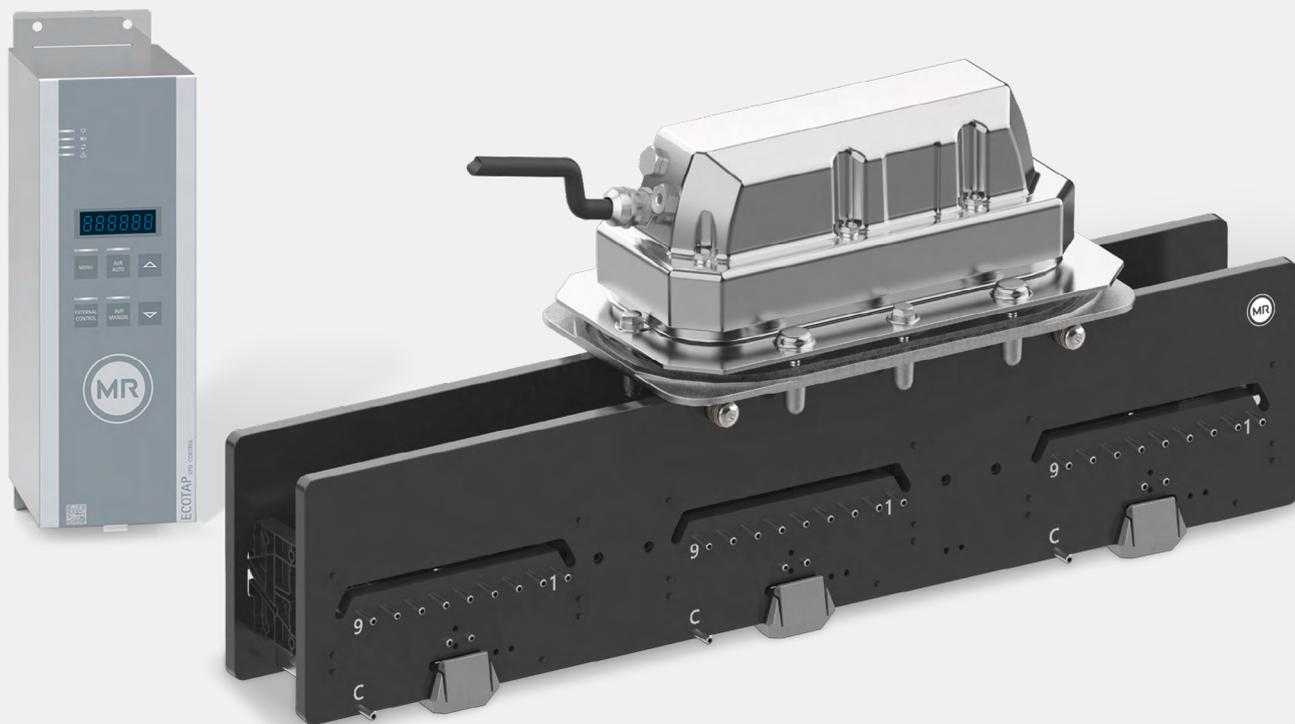




## ECOTAP® VPD®

# Making voltage regulation the standard in distribution transformers

reinhausen.com



# On-load performance combined with off-circuit simplicity

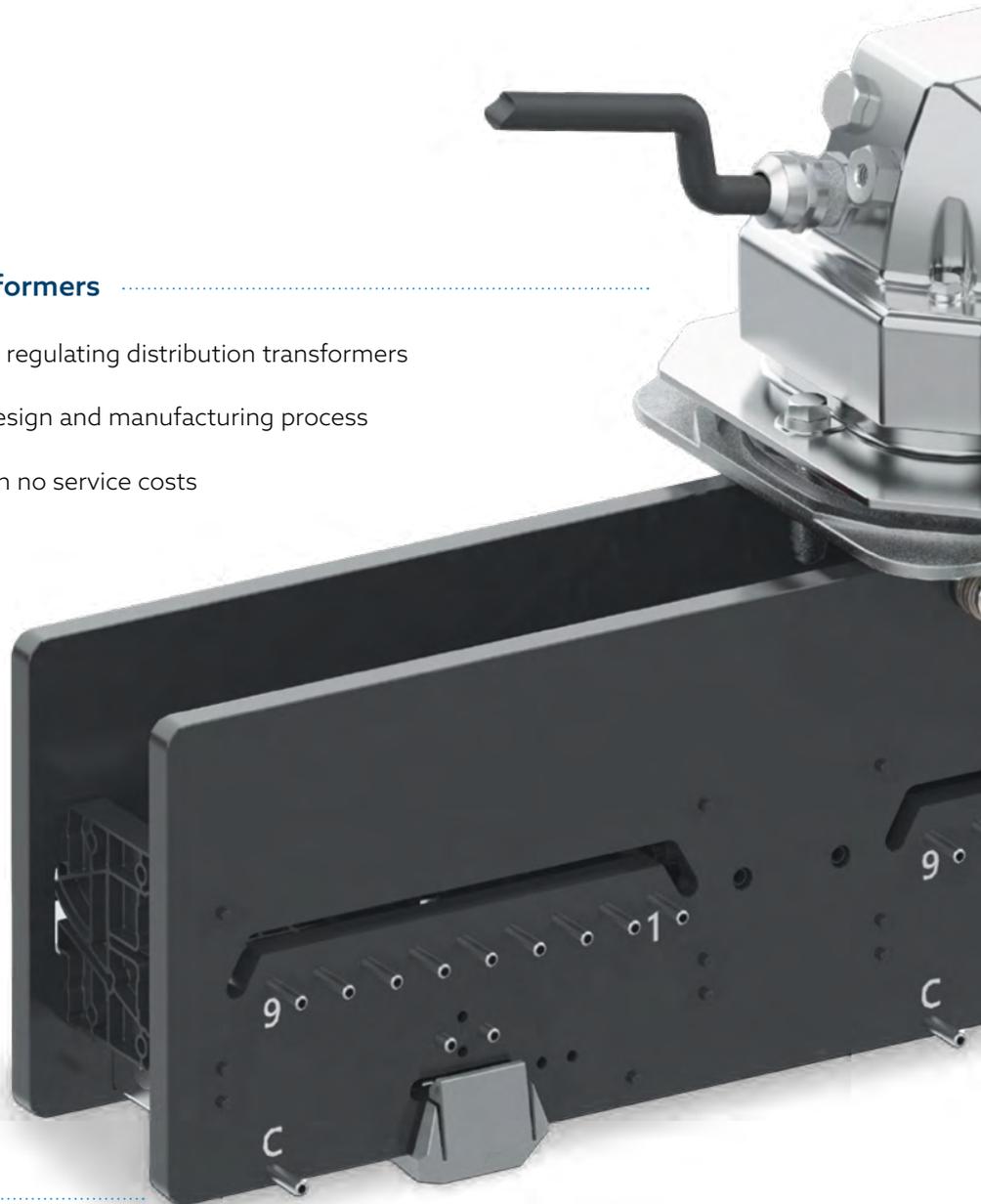
What if an on-load tap-changer were as easy to work with as a de-energized tap-changer? The new ECOTAP® VPD® is a big leap towards that goal.

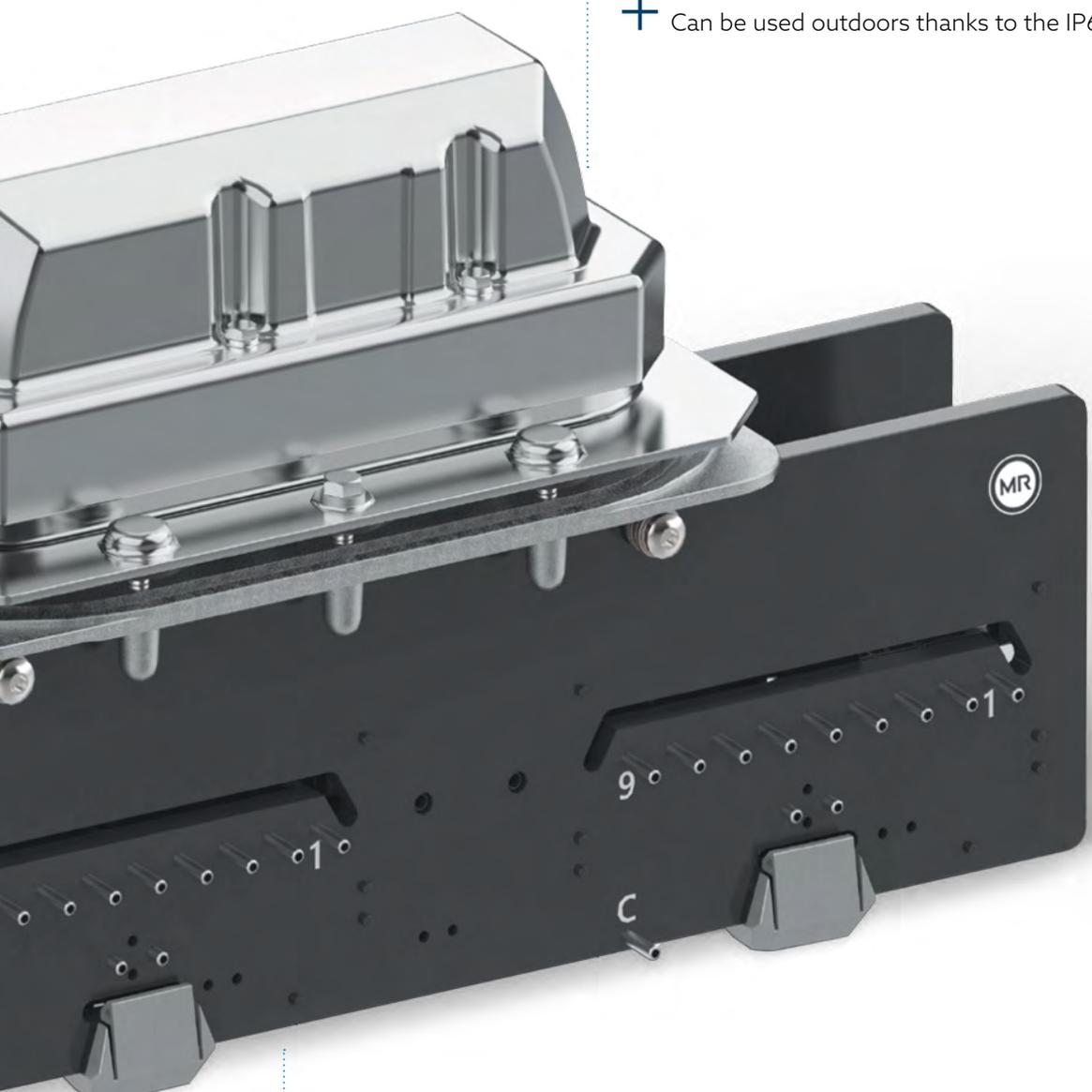
## Tailor made for distribution transformers

- + Most economic solution for voltage regulating distribution transformers
- + Easy integration into transformer design and manufacturing process
- + Maximum operational reliability with no service costs over the transformer lifetime

## Switching unit

- + Maximum reliability and maintenance free for lifetime due to superior vacuum-switching technology
- + High-speed resistor-type tap-changer principle avoids additional losses
- + Lifetime of the on-load tap-changer identical to the transformer





### Direct drive

- + 20 tap-change operations per minute enable quick responses to changing grid situations
- + Comprehensive safety functions and an electrical energy accumulator ensure that once tap-change operations are started they are reliably completed even if all power is lost
- + Can be used outdoors thanks to the IP66 degree of protection

### Selector

- + Well-known tube-design contacts for quick connection
- + 9 operating positions enable a wide regulating range
- + Eco friendly: can be operated with selected synthetical and natural ester fluids such as ENVIRONTEMP FR3 or MIDEL® eN

# ECOTAP® VPD®

## Control and voltage regulation

Compact, robust and user friendly



### Compact and robust

- Only 10 cm wide and 35 cm tall
- Wide temperature range of -25 °C to +70 °C
- High electrical interference level of up to 4 kV
- Degree of protection IP30
- Designed for a long lifetime

### User friendly

- Auto mode with single-phase regulation algorithm
- Manual mode with raise/lower operation
- Complete parameterization on the controller possible, no laptop needed
- Comprehensive indication of status in the display

### MODBUS RTU communication

- Status of control unit
- Control parameterization of control unit
- Reading of measured values
- Command for tap-change operation

## Variants for different regulation strategies

### + CONTROL

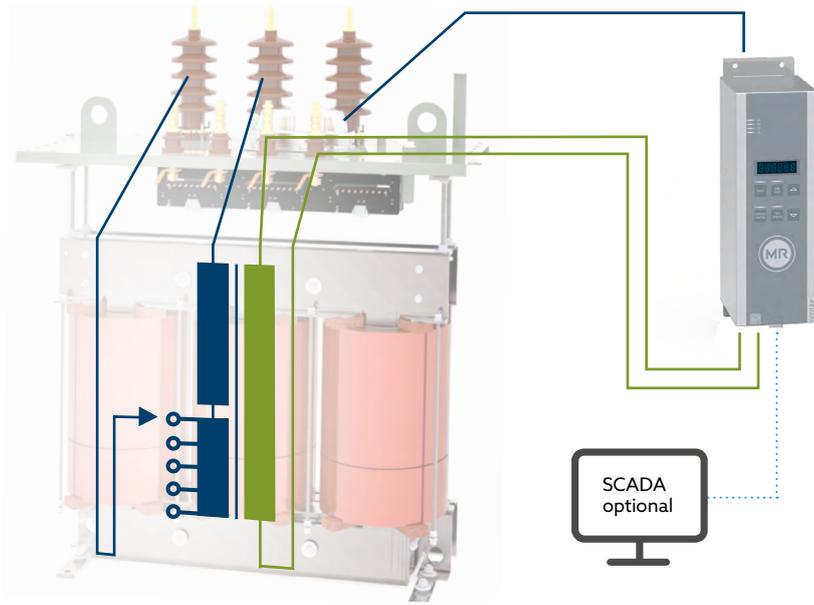
Reliable regulation algorithm based on single-phase busbar voltage measurement

### + CONTROL DS

#### All functions of the CONTROL unit, plus

- Active power-dependent adjustment of the voltage setpoint (Dynamic Setpoint control, via additional single-phase current measurement)
- Measured value memory for 10-minute average values of current, voltage, phase angle, active and apparent power with sign
- Permanent storage of minimum and maximum values

## Operational principle of a voltage regulating distribution transformer



## Reliable regulation algorithm based on the busbar voltage measured in one phase

Parameters like desired voltage, bandwidth or delay time can be flexibly set



## Technical data

On-load tap-changer	ECOTAP® VPD® III 30D-24
Number of phases	3
Application	At any point in the winding
Max. rated through current	30 A
Max. rated step voltage	550 V
Max. number of operating positions	9
Highest voltage for equipment	24 kV
Max. number of tap-change operations	500,000



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# Your advantages at a glance



## **Maximum economic efficiency for the entire transformer**

- Cost-optimized design for minimum cost and effort during design and manufacture of the transformer
- No need for servicing of the on-load tap-changer or motor drive unit during the entire transformer lifetime; the electronic control can be replaced easily if necessary



## **Perfect fit into transformer manufacturers' processes**

- Easy integration into all common transformer designs
- Minimum variants allow optimized order processing and logistics
- Well-known tube-design contacts for quick connection



## **Best fit into processes of distribution network operators**

- Standard solution for the entire distribution network
- Standardized interface throughout the entire ECOTAP® VPD® family avoids extra training for operators
- Simple commissioning and operation



## **Maximum operational reliability**

- Autonomous operation
- Robust design for high reliability
- Maintenance-free vacuum technology



## **Environmentally friendly**

- Compliant with the requirements of the EU Ecodesign Directive 2021
- Can be operated with natural esters as insulating liquid

→ [More information](#)

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