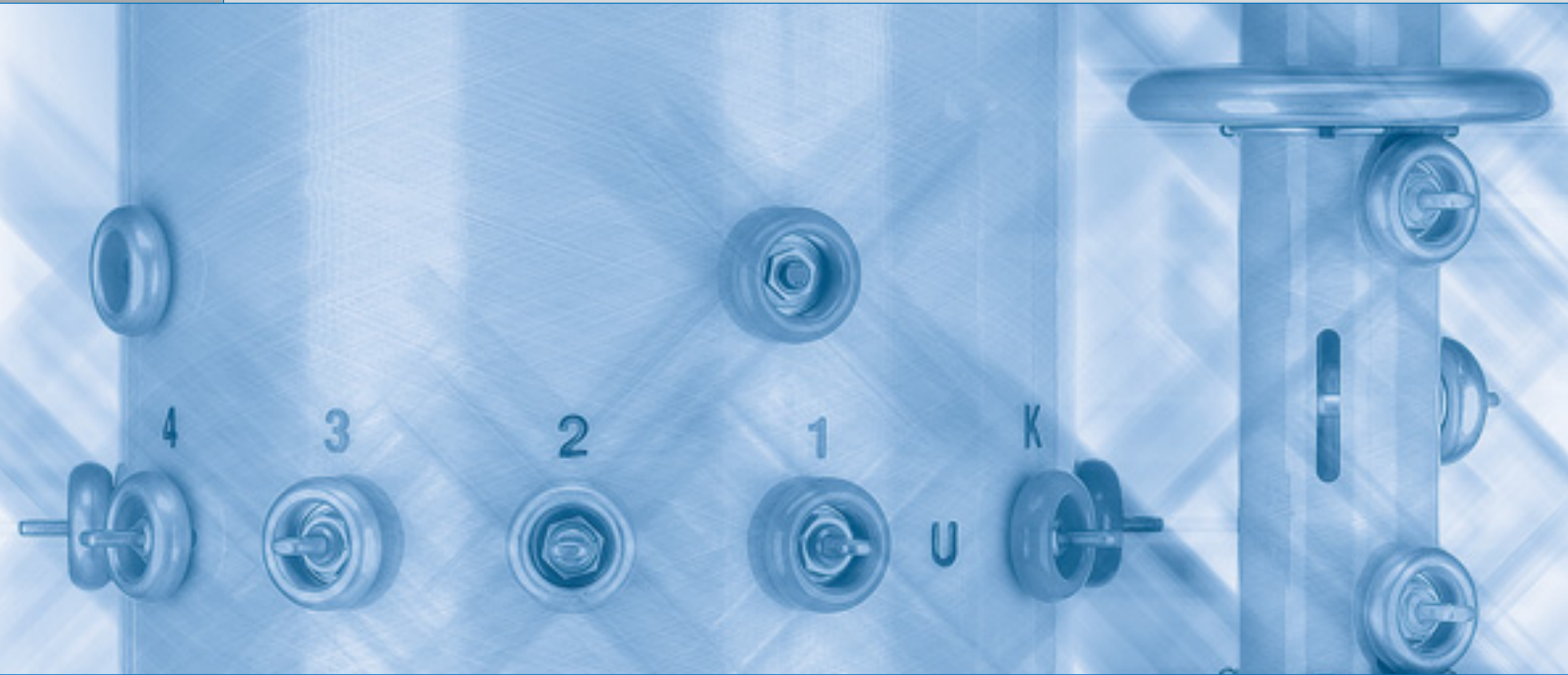


# VACUTAP® VV

On-Load Tap-Changer  
for Regulating Transformers

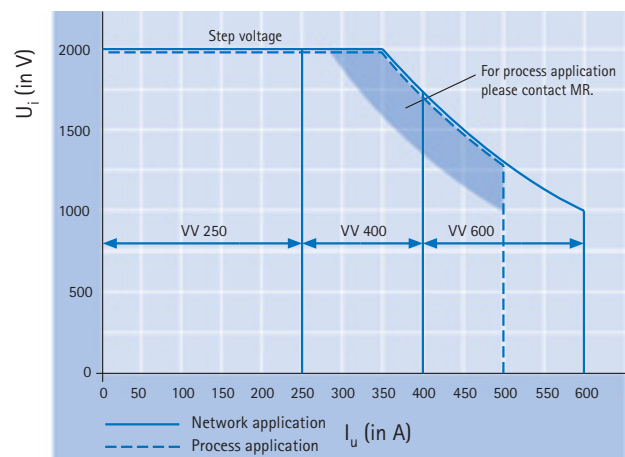
[www.reinhausen.com](http://www.reinhausen.com)





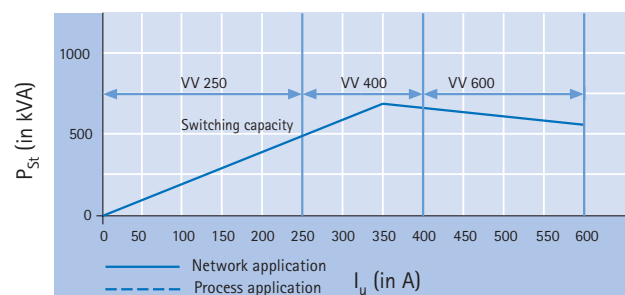
### VACUTAP® VV – An Investment which Pays for Itself

- Maintenance-free up to 300,000 operations
  - no time based maintenance
  - maintenance-free for more or less all network applications
  - dramatically reduction of life-cycle-costs
  - increased transformer availability
- No oil carbonisation
- No oil-filter plant
- No contact change
- No arcing in the insulating oil
- Extended lifespan of the insulating oil



### Our Experience – Your Safety

Absolutely reliable up-to-date technology is what MR customers can expect. Back in the eighties we began the development of the vacuum switching technology. Our comprehensive know-how from more than 120,000 on-load tap-changers sold made us the pioneers in this innovative technology. The result is the VACUTAP® range of on-load tap-changers, high-tech products with MR's proven quality. This quality is ensured by the vacuum-interrupters, which have been developed according to our strict guidelines and which have been tried and tested in operation for many years.





## Technical Specifications of VACUTAP® VV

On-load tap-changer	VV III 250 Y	VV III 250 D	VV III 400 Y	VV III 400 D	VV III 600 Y	VV III 600 D	VV I 401 <sup>3)</sup>	VV I 401 <sup>3)</sup>					
Number of poles and application	3 neutral point	3 at any position on the winding	3 neutral point	3 at any position on the winding	3 neutral point	3 at any position on the winding	1 at any position on the winding						
Max. rated through-current $I_{um}$ (in A)	250		400		600		400						
Rated withstand current (in kA)	4		5		6		5						
Rated duration of short-circuits (in s)	3		3		3		3						
Rated peak withstand current (in kA)	10		12.5		15		12.5						
Max. rated step voltage $U_i$ (in V)	2000		2000 ... 1700 <sup>1)</sup>		2000 ... 1000 <sup>1)</sup>		2000 ... 1700 <sup>1)</sup>						
Switching capacity (in kVA)	See $P_{St}-I_U$ -Diagram												
Rated frequency	50 ... 60 Hz												
Number of operating positions	without change-over selector: max. of 12, with change-over selector: max. of 23						with change-over selector: max. of 23						
Rated insulation level													
Highest voltage for equipment $U_m$ (in kV) <sup>2)</sup>	40	76	40	76	145 <sup>4)</sup>	40	76	40	76	145 <sup>4)</sup>	76	145 <sup>4)</sup>	
Rated lightning impulse withstand voltage (in kV, 1.2/50)	200	350	200	350	650	200	350	200	350	650	200	350	650
AC withstand voltage (in kV, 50 Hz, 1 min)	70	140	70	140	275	70	140	70	140	275	70	140	275
Rated withstand voltages of the inner insulation	See table 3 in the Technical Data of the VV (TD 203).												
Oil compartment	Sealed up to 0.3 bar continuous differential pressure (0.6 bar test pressure), head and cover of the on-load tap-changer are vacuum-proof.												
Temperature range	The VACUTAP® VV on-load tap-changer can be operated within the rated load range with oil temperatures of - 25 °C to + 105 °C.												

1) See also  $U_i-I_U$ -Diagram

2) In acc. w. VDE 0111, part 1: r. m. s. value of the phase-phase voltage for which a piece of equipment is rated for its insulation

3) 600 A design on request

4) A maximum operating voltage of 132 kV + 15% = 151.8 kV is permitted when the test voltages of the 145 kV class are not exceeded.

## Installation lengths

3-pole VV III				1-pole VV I	
Y 40 kV 250, 400, 600 A h = 1628 mm	D 40 kV 250, 400, 600 A h = 1628 mm	Y 76 kV 250, 400, 600 A h = 1810 mm	D 76 kV 250, 400, 600 A h = 1810 mm	D 145 kV 250, 400, 600 A h = 2224 mm	
					76 kV 400 A h = 816 mm
					145 kV 400 A h = 978 mm

