ROHDE&SCHWARZ
Make ideas real

R&S®RT-ZHD HIGH VOLTAGE DIFF. PROBE FAMILY

versus Tektronix TMDP and THDP

The R&S®RT-ZHD family outperforms the Tektronix TMDP and THDP probes with low noise and exceptional linearity, enabling precise high voltage measurements

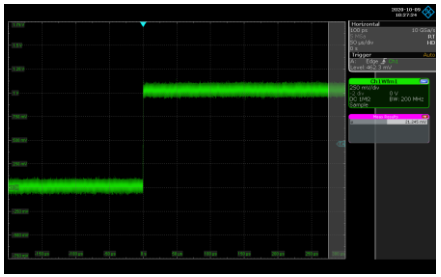
To achieve the maximum power efficiency and power densities in switched-mode power supplies, switching loss has to be minimized. This requires the use of modern, fast-switching semiconductors. The R&S®RT-ZHD high voltage differential probes offer a bandwidth of up to 200 MHz and an excellent common mode rejection ratio (CMRR) over a broad frequency range, making them ideal for measurements on fast-switching power electronics. Extraordinarily low added noise results in high-quality measurements.

Your benefit	Features
2000 V offset capability with maximum vertical sensitivity	Due to their integrated offset circuit, the R&S®RT-ZHD probes offer an offset voltage range that is independent of the vertical setting of the oscilloscope and the attenuation factor of the probe. The smallest ripple voltages can be measured on large DC link voltages without compromising sensitivity.
Excellent functions	Automatic range adjustment, overrange signaling, integrated DC voltmeter
Accurate results	Accurate, low inherent noise, high bandwidth and slew rate, high linearity, very low drift, high CMRR

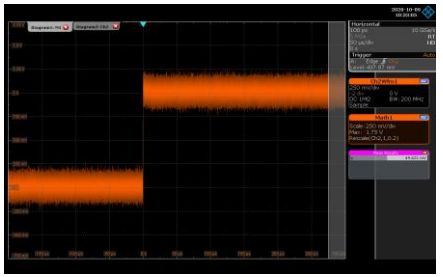
Parameter	R&S®RT-ZHD07	R&S®RT-ZHD15	R&S®RT-ZHD16	R&S®RT-ZHD60	Tektronix TMDP0200	Tektronix THDP0200	Tektronix TMDP0100
Specifications							
Input voltage	750 V	1500 V		6000 V	750 V	1500 V	6000 V
Bandwidth	200 MHz	100 MHz	200 MHz	100 MHz	200 MHz	200 MHz	100 MHz
Interface	Rohde & Schwarz probe interface				Tektronix VPI		
Input to ground	300 V CAT III	1000 V CAT III			300 V CAT III	600 V CAT II	1000 V CAT III
Attenuation	25:1 250:1	50:1 500:1		100:1 1000:1	25:1 250:1	50:1 500:1	100:1 1000:1
Noise (mV (RMS))	12 mV	20 mV	25 mV	70 mV	25 mV	50 mV	175 mV
DC accuracy	0.5 %				2 %		
Drift	very low				-		
Common mode rejection ratio (CMRR)							
DC to 60 Hz	> 80 dB (meas.)				> 80 dB (no guaranteed values)		
to 100 kHz	-				60 dB (no guaranteed values)		
to 1 MHz	60 dB (meas.)				-		
to 3.2 MHz	-				30 dB (no guaranteed values)		
to 5 MHz	55 dB (meas.)				-		
to 100 MHz	30 dB (meas.)				26 dB (no guaranteed values)		
Additional functionality							
Additional offset compensation	±1000 V	±2000 V			-		
DC voltmeter	integrated				-		
R&S®ProbeMeter measurement error	< 0.1 %			< 0.12 %	-		

For more information, visit
www.rohde-schwarz.com/product/high-voltage-probes

Noise performance



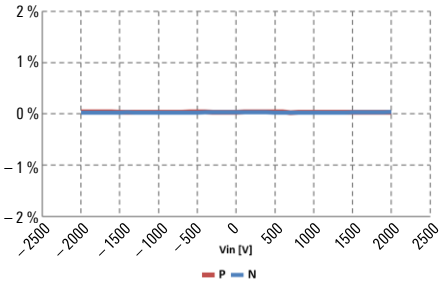
The R&S®RT-ZHD features a low-noise design. Extraordinarily low added noise results in high-quality measurements.



The Tektronix TMDP and THDP probes have twice as much noise as the R&S®RT-ZHD. Higher noise reduces the accuracy of measurements and makes it more difficult to see small details and trigger on them.

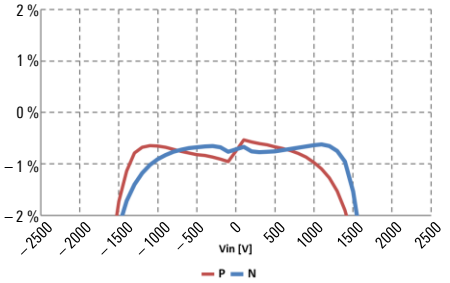
Linearity and zero error comparison

R&S®RT-ZHD07 500x linearity error



The R&S®RT-ZHD probes stand out with very high linearity and very small zero error, which ensures minimal variation in measurements and increases confidence in your results.

Tektronix THDP0200 500x linearity error

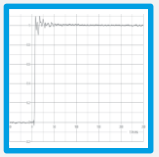


The Tektronix TMDP and THDP exhibit very high nonlinearity and high zero error. This means a very high susceptibility to errors, the degree of which increases dramatically with changes in temperature.

Advantages of the R&S®RT-ZHD over the Tektronix TMDP and THDP

High measurement accuracy

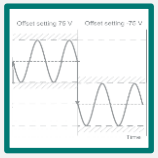
Minimal noise



Very high linearity and very small zero error

Very high temperature stability

Versatile range of applications

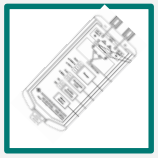


Very high DC offset range
(e.g. ±2000 V with 25 mV/div)

Precise voltage measurements
(0.1 % with R&S®ProbeMeter)

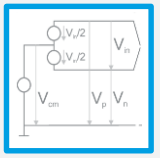
Measurements in CAT III conditions

Easy operation



Control the oscilloscope via the probe

DC common mode voltage always readable
(R&S®ProbeMeter)



Automatic divider setting and overvoltage display

Best in class

Unique feature

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