TELEDYNE TEST TOOLS
Everywhereyoulook™

T3LVD Low Voltage Probe Data Sheet

Low Voltage Differential Probe

Debug with Confidence

20 Volts, 200 MHz



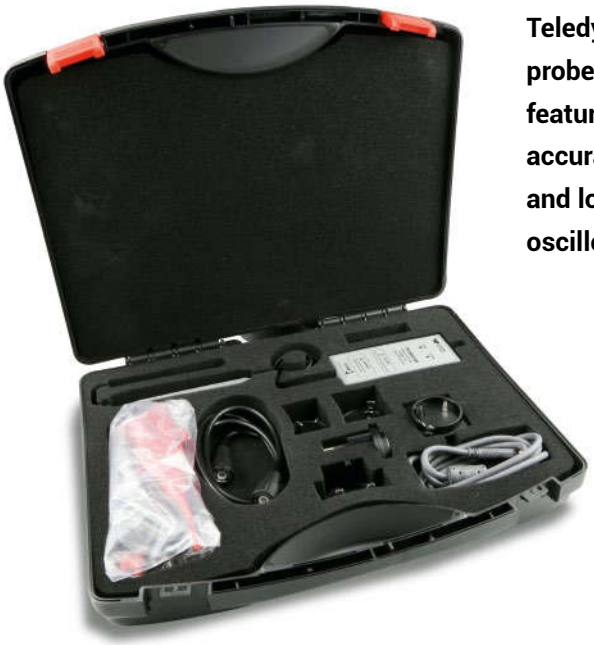
Tools for Improved Debugging

● ± 20 V Differential signal input (DC + Peak AC).	✔ Large measurement voltage range gives wide application coverage.
● ± 60 V maximum common mode voltage input.	✔ Wide common mode rejection for accurate measurements.
● Wide DC to 200 MHz bandwidth.	✔ Wide bandwidth enhances measurement capability and application coverage.
● Combined single ended and differential measurement capability.	✔ Make measurements on single ended and differential circuits without the need to change probes.
● Use with any scope with a 50 Ω or 1 MΩ input and BNC connector.	✔ Compatible with all your Oscilloscopes.
● High Common Mode Rejection Ratio of >50 dB at 10 MHz, >80 dB at 50 Hz / 60 Hz.	✔ Good CMRR figures for accurate measurements.
● Includes wall socket 5 V / 1 A power supply.	✔ All accessories included to enable immediate use.

Key Specifications

Maximum Differential Voltage	± 20 V (DC + Peak AC)
Maximum Common Mode Voltage	± 60 V
Bandwidth (-3 dB)	DC to 200 MHz
Rise Time	≤ 1.75 ns
Differential Mode Input Impedance	1 MΩ, < 3.5 pF
Connectivity	BNC cable to Oscilloscope 50 Ω or 1 MΩ input
Warranty	1 Year

T3LVD20-200: ± 20 V, 200 MHz



Teledyne Test Tools new T3LVD20-200 low voltage differential probe is a wide bandwidth active differential voltage probe, featuring 200 MHz bandwidth, ± 20 V (DC + Pk AC), fast and accurate waveform capture, measurement accuracy of 2 % and low test circuit loading. This probe can be used with any oscilloscope having a 50 Ω or 1 MΩ BNC input.

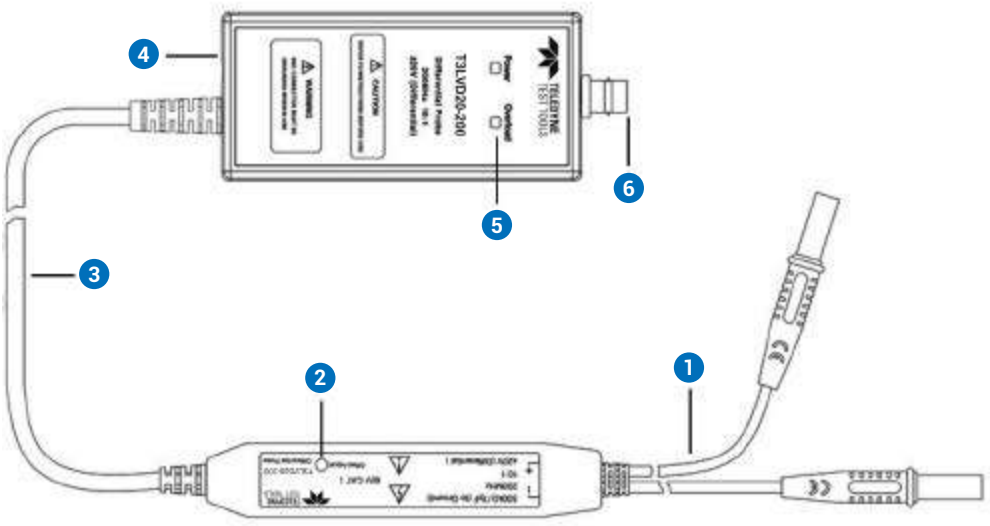
Key Features

- Accurate and easy voltage measurements.
- Wide 200 MHz bandwidth.
- Differential signal input of ± 20 V (DC + Peak AC).
- High differential input impedance of 1 MΩ / <3.5 pF.
- Maximum common mode voltage of ± 60 V.
- Combined single ended and differential measurements.
- Use with any scope with a 50 Ω or 1 MΩ input and BNC connector.
- Over-Voltage protection with dual indicators.

Applications

- Embedded low voltage power design and power component measurements.
- Low voltage consumer electronics and household appliances.
- Domestic and industrial photo-voltaic (PV) system design.
- Vehicle electronics.
- Industrial and military control electronics.
- Single ended and differential busses (CAN, CAN FD, LIN, I^2C, SPI, MIL-STD-1553B, UART, ARINC429, etc).
- Research and development.
- Universities, general electronics and education.

T3LVD20-200 PRODUCT DESCRIPTION



1 Measurement input cable

The T3LVD20-200 measurement input cables connecting to the DUT. The connection between the T3LVD20-200 input cables and the DUT will usually be made using grippers or alligator clip connectors (supplied).

2 Offset adjustment

This button allows the user to remove any common mode offset up to ± 60 V.

3 Probe head to control box connection cable

This is a fixed connection cable between the probe head and the control box, of approximately 70 cm in length.

4 Power supply connection point

The external power supply is connected via a standard USB type B port which can be powered from the supplied external USB wall plug adaptor or from an oscilloscope USB port.

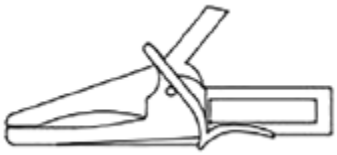
5 Overload alarm indicator

When the amplitude of the acquired waveform surpasses the probe voltage range limit the overload indicator will light and a buzzer will sound. Immediately reduce the amplitude of the input waveform.

6 BNC output connector

The probe control box BNC output connector can be connected to an oscilloscope via a standard BNC cable. The oscilloscope input impedance should be set to 50 Ω. Use a 50 Ω feedthrough adaptor for oscilloscopes that only have a 1 MΩ input impedance.

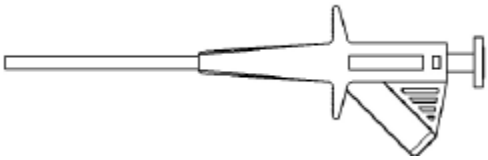
INCLUDED ACCESSORIES



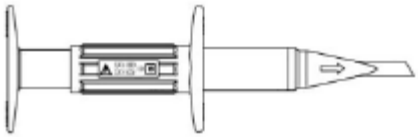
Alligator Clips



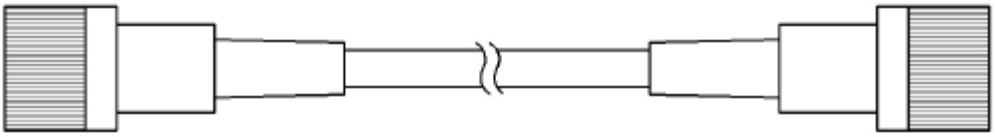
50 Ω Feedthrough Termination



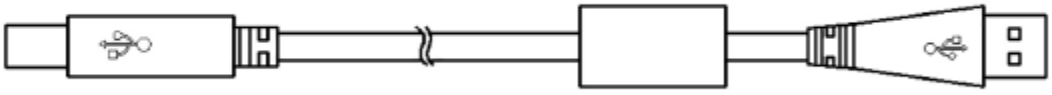
Gripper Clips



Test Hook



BNC Output Cable



USB Cable

Wall Socket USB Power Supply (no photo)

Supplied Accessories	Specification
Alligator Clips x 2	CATIII 1000 V / CATIV 600 V
Gripper Clips x 2	CATIII 1000 V
Test Hook x 2	CATIII 1000 V
BNC 50 Ω Feedthrough Termination Adapter x 1	50 Ω, 1 W
BNC Output Cable x 1	1 m, BNC – BNC Coaxial Cable
USB Cable x 1	1.5 m, Type A Male – Type B Male
Wall Socket USB Power Supply x 1	Input: 100 V – 240 V, Output: 5 V / 1 A

SPECIFICATIONS

Electrical Specifications		Probe Specification
Bandwidth (-3 dB)		200 MHz (see figure 1)
Rise Time		≤ 1.75 ns
Accuracy		± 2 %
Attenuation Ratio		10:1
DC + Peak AC (Maximum Differential Voltage)		± 20 V
Maximum Common Mode Voltage		± 60 V
Maximum Rated Input Voltage To Ground		± 60 V
Input Impedance	Single Ended To Ground	500 kΩ
	Differential	1 MΩ
Input Capacitance	Single Ended To Ground	< 7 pF
	Differential	< 3.5 pF
Probe Output Voltage Into Oscilloscope 50 Ω Input		± 2 V
Offset (Typical)		± 2 mV
Offset Adjustment Range (Typical)		± 95 mV
CMRR	50 Hz / 60 Hz	> 80 dB
	10 MHz	> 50 dB
Noise (Vrms)		6 mV
Overload Indicator Voltage Threshold		≥ 20 V
Delay Time	Probe	11 ns
	BNC Cable (1 m)	5 ns
Overload Indicator		When Overload Occurs Red Indicator Illuminates And Buzzer Sounds
Probe Load Requirement		50 Ω
Power Supply		Wall Socket USB Power Supply 5 V / 1 A

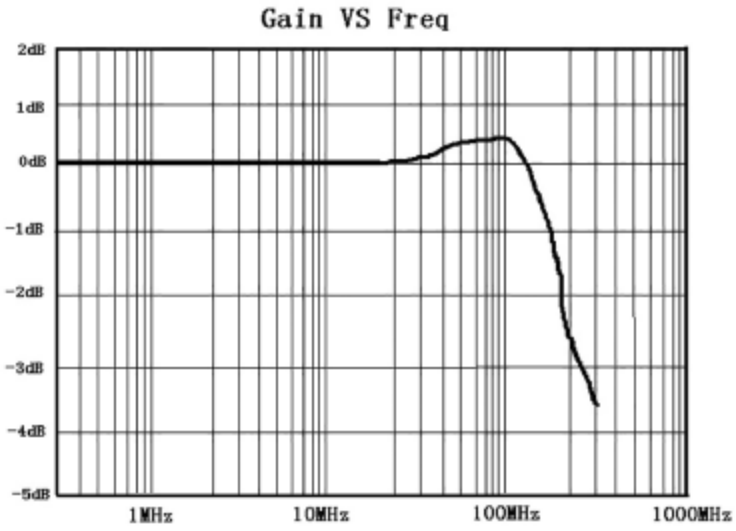


Figure 1: Frequency Response Curve

SPECIFICATIONS

Mechanical And Environmental Characteristics		Probe Characteristic
Differential Input Cable Length		15 cm
BNC Output Cable Length		1 m
Probe Weight		172 g
Probe Dimensions	Probe Head	116 mm x 22 mm x 15 mm
	Control Module	124 mm x 49 mm x 27 mm
Pollution Level		2
Operating Temperature		0 °C – 50 °C
Storage Temperature		-30 °C – 70 °C
Operating Humidity		≤ 85 % RH
Storage Humidity		≤ 90 % RH
Operating Altitude		3000 m
Storage Altitude		12000 m
Warranty		1 Year Return To Teledyne LeCroy

Ordering information

Description	± 20 V, DC to 200 MHz Differential Probe		**T3LVD20-200**
Supplied Accessories	Alligator Clips	x 2	
	Gripper Clips	x 2	
	Test Hook	x 2	
	BNC 50 Ω Feedthrough Termination Adapter	x 1	
	BNC Output Cable	x 1	
	USB Cable	x 1	
	Wall Socket USB Power Supply	x 1	
	Instruction Manual	x 1	
	Calibration Report	x 1	

ABOUT TELEDYNE TEST TOOLS

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Company Profile

Teledyne LeCroy is a leading provider of oscilloscopes, protocol analyzers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. Since our founding in 1964, we have focused on creating products that improve productivity by helping engineers resolve design issues faster and more effectively. Oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems and to validate electronic designs in order to improve time to market.

The Teledyne Test Tools brand extends the Teledyne LeCroy product portfolio with a comprehensive range of test equipment solutions. This new range of products delivers a broad range of quality test solutions that enable engineers to rapidly validate product and design and reduce time-to-market. Designers, engineers and educators rely on Teledyne Test Tools solutions to meet their most challenging needs for testing, education and electronics validation.

Location and Facilities

Headquartered in Chestnut Ridge, New York, Teledyne Test Tools and Teledyne LeCroy has sales, service and development subsidiaries in the US and throughout Europe and Asia. Teledyne Test Tools and Teledyne LeCroy products are employed across a wide variety of industries, including semiconductor, computer, consumer electronics, education, military/aerospace, automotive/industrial, and telecommunications.

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T3 stands for Teledyne Test Tools.

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