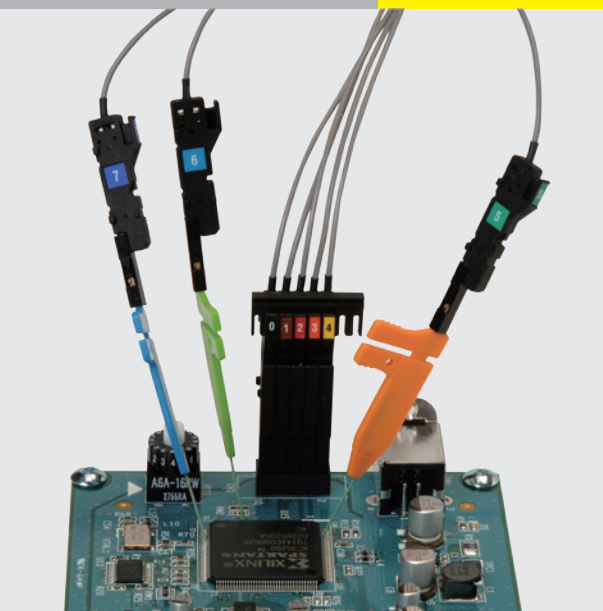


# Precision waveform measurement essentials

Probes and accessories for Oscilloscopes and ScopeCorders



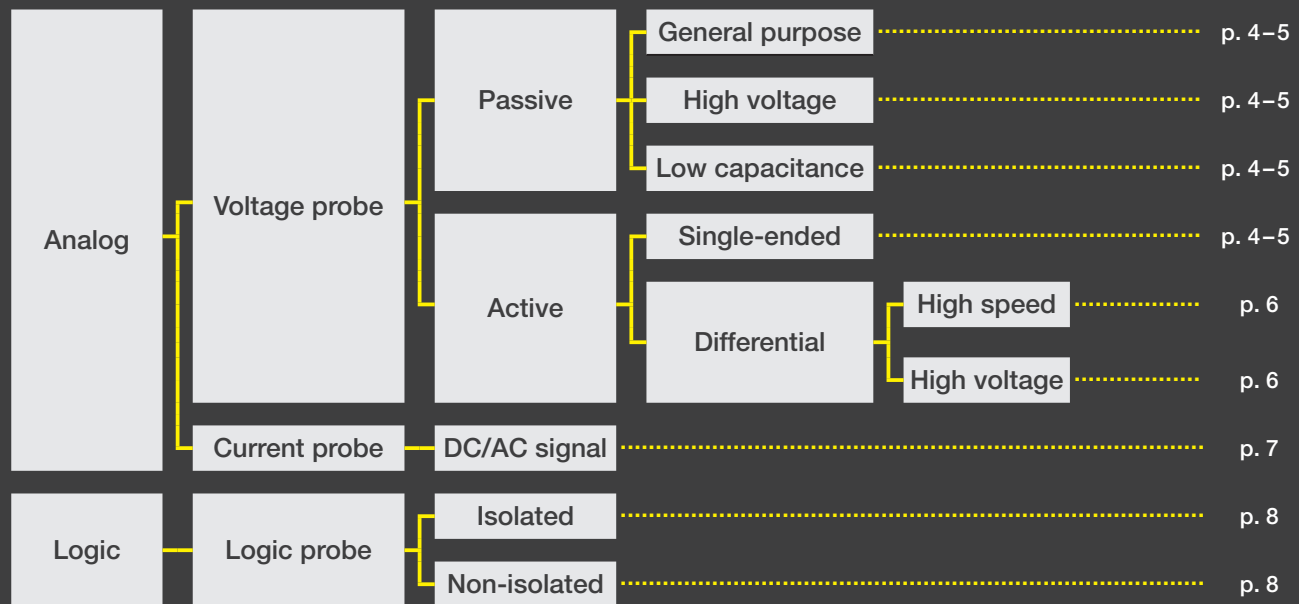
# Valid waveform measurement results.

An oscilloscope or ScopeCorder is only half the waveform measurement solution. The probe, its interaction with the measuring instrument and how it is connected to the circuit under test, can dramatically affect the quality and validity of the results.

Yokogawa helps engineers develop important skills by providing a wide range of accessories, which address today's diverse measurement needs, such as probes which can be used in more extreme temperature environments and voltage and current probes for specific uses.

## ■ Probes

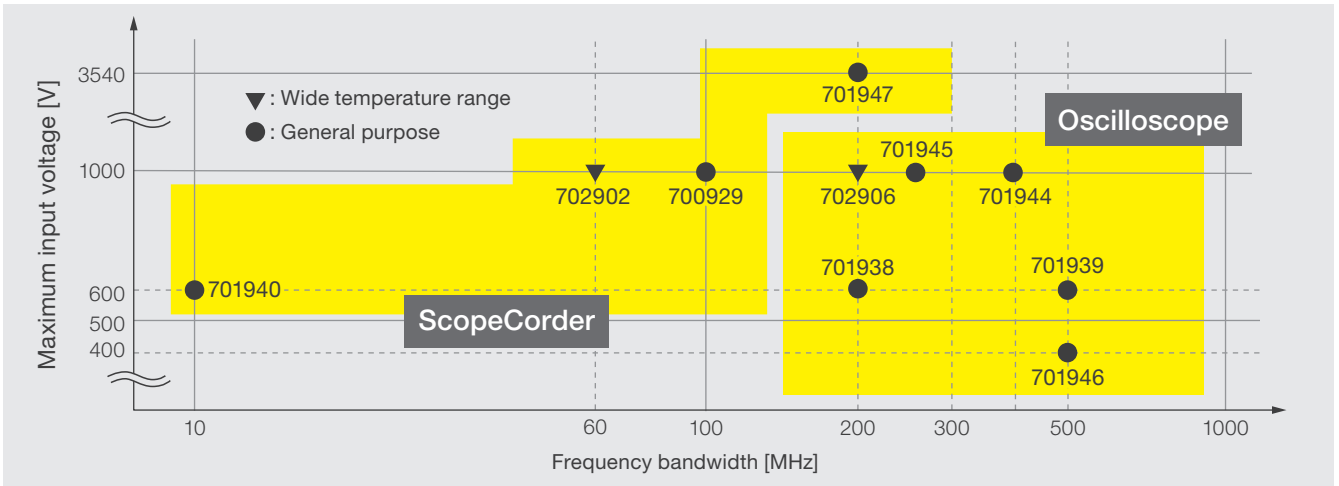
Yokogawa supports a broad range of measurement applications with probes for general purpose use, active probes for high-speed waveform observation, high-voltage differential types for probing floating power electronics signals, a range to measure currents precisely from 1 mA to 500 A and probes for other specialized uses.



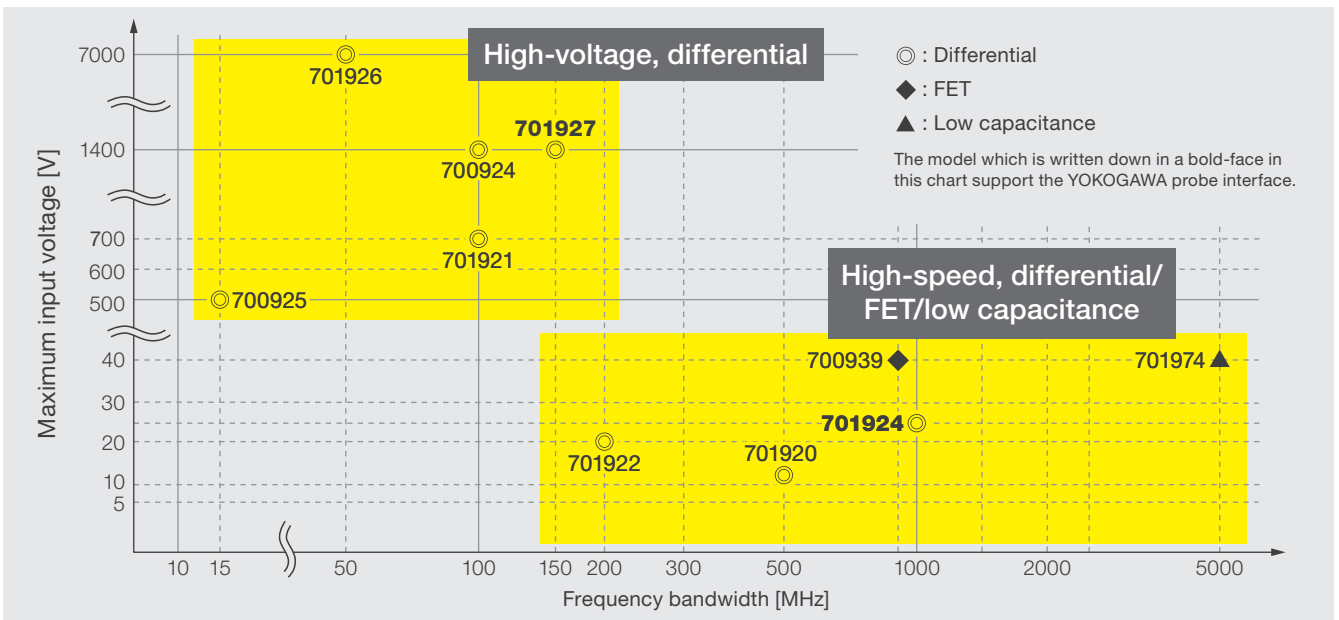
## ■ Others

High-voltage Measurement Accessories	p. 9
Cables/Adapters, ScopeCorder accessories, Others	p. 10
Software	p. 11

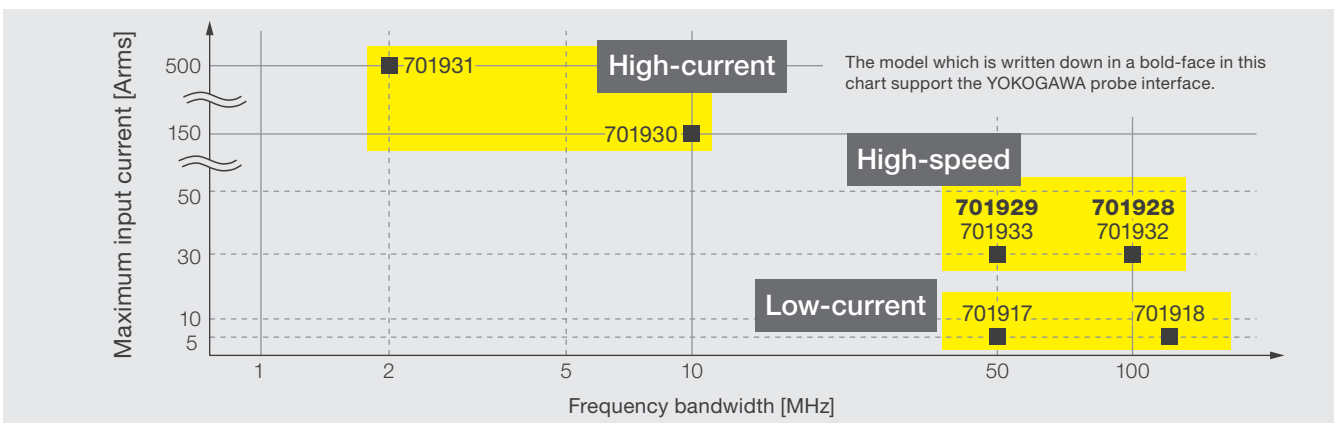
### Passive probe chart



### Differential, FET and low capacitance probe chart



### Current probe chart







# Voltage probes

## Passive/FET/Low capacitance

A passive probe is the most basic yet versatile probe. By proper use of the provided attachments, a passive probe can be used not only for everyday measurement but also for much higher speed signals. Yokogawa also provides probes for extreme use such as very high-voltage, wide temperature ranges, and ultra-high-speed signal measurement.

4

### For oscilloscope

<p><b>701938/39</b> 200 MHz/500 MHz passive probe</p>  <p>10:1 passive probes for DLM2000/4000, DL6000, and DLM6000 series. Included as standard accessories.</p>	<p><b>701946</b> Miniature passive probe</p>  <p>10:1 miniature passive probe for DLM2000/4000, DL6000, and DLM6000 series. Included are the set of accessories useful for probing ICs and high-density PCBs.</p>	<p><b>701943</b> 500 MHz passive probe</p>  <p>10:1 passive probe for DL9000/9500/9700 and SB5000 series.</p>	<p><b>702906</b> 10:1 passive probe (Wide operating temperature range)</p>  <p>10:1 passive probe with a wider operating temperature range (–40 to 85 °C) and longer total length than normal passive probes. Suitable for temperature cycling tests.</p>
<p><b>701944/45</b> 100:1 high voltage probe</p>  <p>100:1 passive probe for high voltage measurement up to 1000 Vrms.</p>	<p><b>700939</b> FET probe</p>  <p>The input resistance is higher than other types of active probe. A probe power supply is required.</p>	<p><b>701974</b> 5 GHz low capacitance probe</p>  <p>Probe with low input capacitance and low input resistance. Maximum input voltage is 20 Vrms or 40 V ACpeak.</p>	

The specified frequency bandwidth of a passive probe is the system bandwidth (–3 dB) when used with the related oscilloscope. The specified bandwidths of FET and active probes are for the probe only. The maximum input voltage is limited by the frequency of the measurement signal.

### Passive probe selection guide (Oscilloscopes)

Model (Name)	Frequency bandwidth <sup>*1</sup>	Maximum input voltage <sup>*3</sup>	Attenuation ratio	Input resistance <sup>*2</sup> /capacitance <sup>*4</sup>	Total length	Notes
701938	200 MHz	600 V (DC + ACpeak)	10:1	10 MΩ/approx. 13.5 pF	1.5 m	600 V (DC + ACpeak) CAT II, For DLM2000 (200 MHz models)
701939	500 MHz	600 V (DC + ACpeak)	10:1	10 MΩ/approx. 10.5 pF	1.3 m	600 V (DC + ACpeak) CAT II, For DLM2000 (350/500 MHz models) For DLM4000, DL6000, DLM6000 series
701946	500 MHz	400 Vrms	10:1	10 MΩ/approx. 9.5 pF	1.2 m	Miniature passive probe, 1250 Vpeak CAT I; 300 Vrms CAT II For DLM2000/4000, DL6000, DLM6000 series
701943 (PB500)	500 MHz	600 V (DC + ACpeak)	10:1	10 MΩ/approx. 12.5 pF	1.5 m	600 V (DC + ACpeak) CAT II, For DL9000/9500/9500, SB5000 series
702906	200 MHz	1000 V (DC + ACpeak)	10:1	10 MΩ/approx. 16 pF	2.5 m	1000 V (DC + ACpeak) CAT II, Wide operating temperature (–40 to +85°C) For DLM2000/4000 series
701944	400 MHz	1000 Vrms	100:1	50 MΩ/approx. 7.5 pF	1.2 m	1000 Vrms CAT II; 4000 Vpeak CAT I
701945	250 MHz	1000 Vrms	100:1	50 MΩ/approx. 7.5 pF	3 m	1000 Vrms CAT II; 4000 Vpeak CAT I

\*1: DC to –3 dB point, the system bandwidth always depends on the instrument used \*2: In combination with corresponding oscilloscopes \*3: Depending on the frequency of the measurement signal \*4: Defined from the probe tip




### FET probes, low capacitance probes selection guide (Oscilloscopes)

Model (Name)	Frequency bandwidth <sup>*1, *2</sup>	Maximum input voltage <sup>*3</sup>	Maximum nondestructive voltage <sup>*3</sup>	Attenuation ratio	Input resistance <sup>*2</sup> /capacitance <sup>*4</sup>	Total length	Recommended instruments	Power supply
700939	900 MHz	±10 V (DC + ACpeak)	±40 V (DC + ACpeak)	10:1	2.5 MΩ/approx. 1.8 pF	1.5 m	All YOKOGAWA's oscilloscopes	Probe power supply
701974 (PBL5000)	5 GHz	20 Vrms	40 VACpeak	10:1, 20:1	450 Ω/approx. 0.25 pF 950 Ω/approx. 0.4 pF	1.1 m	DL6000/9000 (The instrument of 50 Ω input impedance)	Not required

\*1: DC to –3 dB point \*2: Defined by a probe only \*3: Depending on the frequency of the measurement signal \*4: Defined from the probe tip

## 5 For ScopeCorder (With isolated BNC inputs)

For safety, metals part of the probe body and the BNC connector are insulated except the probe tip.

<p><b>702902</b> 10:1 passive probe (Wide operating temperature range)</p>  <p>10:1 passive probe for isolated input modules of the ScopeCorder series having a wider operating temperature range (-40 to 85 °C) and total length of 2.5 m. Suitable for temperature cycling tests.</p>	<p><b>700929</b> 10:1 probe (Safety probe—for use with isolated input modules)</p>  <p>10:1 passive probe for an isolated input module of the ScopeCorder series. The frequency bandwidth is 100 MHz.</p>	<p><b>701947</b> 100:1 probe (Safety probe—for use with isolated input modules)</p>  <p>100:1 passive probe for an isolated input module of the ScopeCorder series. The frequency bandwidth is 200 MHz.</p>
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\*The frequency bandwidth is DC to -3 dB point. The system bandwidth always depends on the instrument used. The maximum input voltage is limited by the frequency of the measurement signal.

### Passive probe selection guide (ScopeCorders: Isolated input module)

Model (Name)	Frequency bandwidth <sup>*1</sup>	Maximum input voltage <sup>*3</sup>	Attenuation ratio	Input resistance <sup>*2</sup> /capacitance <sup>*4</sup>	Total length	Notes
702902	60 MHz	1000 V (DC + ACpeak)	10:1	10 MΩ/approx. 17 pF	2.5 m	1000 V (DC + ACpeak) CAT II Wide operating temperature (-40 to +85°C)
700929	100 MHz	1000 V (DC + ACpeak)	10:1	10 MΩ/approx. 18 pF	1.5 m	1000 V (DC + ACpeak) CAT II, 600 Vrms, CAT III
701947	200 MHz	3540 V (DC + ACpeak)	100:1	100 MΩ/approx. 7 pF	1.5 m	3540 V (DC + ACpeak) CAT I, 1000 V (DC + ACpeak) CAT II

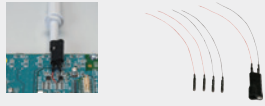







\*1: DC to -3 dB point, the system bandwidth always depends on the instrument used \*2: In combination with corresponding input modules \*3: Depending on the frequency of the measurement signal \*4: Defined from the probe tip.

### Passive probe selection guide (ScopeCorders: Non-isolated input module)

Model (Name)	Frequency bandwidth <sup>*1</sup>	Maximum input voltage <sup>*3</sup>	Attenuation ratio	Input resistance <sup>*2</sup> /capacitance <sup>*4</sup>	Total length	Notes
701940	10 MHz	600V (DC + ACpeak)	1:1, 10:1	10 MΩ/approx. 22 pF (@10:1)	1.5 m	

\*1: DC to -3 dB point, the system bandwidth always depends on the instrument used \*2: In combination with corresponding input modules \*3: Depending on the frequency of the measurement signal \*4: Defined from the probe tip.

## Other accessories for the probe






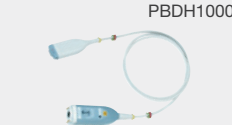



<p><b>366946*</b> Solder-in adapter</p>  <p>For 701938, 701939, 701943 (PB500) and 700939 Standard accessories include: Adapter, red wire (3), black wire (3)</p>	<p><b>701948</b> Plug on clip</p>  <p>Connected to the 700929, 701947 Maximum input voltage: 1000 V (DC + ACpeak) Length: 0.26 m/0.3 m/0.4 m</p>	<p><b>B9852CR*</b> Mini clip converter</p>  <p>A clip set designed for 700988, 700960 and 701940.</p>	<p><b>700971*</b> Mini clip converter</p>  <p>A clip set designed for 701938, 701939, 701943 (PB500) and 700939</p>
<p><b>700972*</b> BNC adapter</p>  <p>For 701938, 701939, 701943 (PB500) and 700939.</p>	<p><b>366945*</b> Printed circuit board adapter</p>  <p>For 701938, 701939, 701943 (PB500) and 700939. Quantity of 1 unit: 10</p>	<p><b>B8099NL</b> 4 mm conversion adapter</p>  <p>Conversion adapters for 702902 and 702906 probes. Used for connecting to the high voltage measurement terminal adapters. (Pincher tip end)</p>	<p><b>B8099NM</b> 4 mm conversion adapter</p>  <p>Conversion adapters for 702902 and 702906 probes. Used for connecting to the high voltage measurement terminal adapters. (Ground lead end)</p>

\*Unsafe for voltage measurements above 42 V.

# Voltage probes

## Differential probes

For measuring floating and high-speed differential signals in combination with single-ended input oscilloscopes.

<p><b>701926</b> Maximum <math>\pm 7000</math> V/50 MHz</p>  <p>High voltage 7 kV (peak) differential probe. The attenuation ratio is switchable between 100:1 and 1000:1.</p>	<p><b>700924</b> Maximum <math>\pm 1400</math> V/100 MHz</p> <p>A power cable sold separately</p>  <p>High speed and high voltage differential probe for floating measurements. The attenuation ratio is switchable between 100:1 and 1000:1.</p>	<p><b>701927</b> Maximum <math>\pm 1400</math> V/150 MHz</p> <p>PBDH0150</p>  <p>High voltage high bandwidth differential probe with the YOKOGAWA probe interface. The attenuation ratio is switchable between 50:1 and 500:1 which is recognized by the probe interface which also provides power. 100 MHz bandwidth is still maintained when using the 1 m probe tip extension cables.</p>	<p><b>701921</b> Maximum <math>\pm 700</math> V/100 MHz</p>  <p>High speed differential probe for medium voltages. The attenuation ratio is switchable between 10:1 and 100:1.</p>	<p><b>700925</b> Maximum <math>\pm 500</math> V/15 MHz</p> <p>A power cable sold separately</p>  <p>Lower frequency differential probe for medium voltages. The attenuation ratio is switchable between 10:1 and 100:1.</p>
<p><b>701924</b> Maximum <math>\pm 25</math> V/1 GHz</p> <p>PBDH1000</p>  <p>A 1 GHz high bandwidth differential probe with the YOKOGAWA probe interface which recognizes the probe type and provides power. With 1.1 pF capacitance, it is ideal for measurements on vehicle bus signals such as CAN, CAN FD and FlexRay.</p>	<p><b>701922</b> Maximum <math>\pm 20</math> V/200 MHz</p>  <p>Medium speed differential probe suitable for day-to-day testing on low voltage differential buses. The attenuation ratio is 10:1 and a YOKOGAWA instrument with probe power or an external supply is required.</p>	<p><b>701920</b> Maximum <math>\pm 12</math> V/500 MHz</p>  <p>Higher speed differential probe suitable for day-to-day testing on low voltage differential buses. The attenuation ratio is 10:1 and a YOKOGAWA instrument with probe power or an external supply is required.</p>	<p><b>B9852MJ</b> Power cable</p>  <p>Cable to provide power to the 700924, 700925, 701921 and 701926 probes from the probe power terminal on a YOKOGAWA instruments (/Px option) or the 701934 probe power supply.</p>	

### Differential probe selection guide










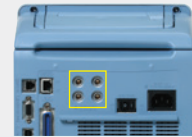
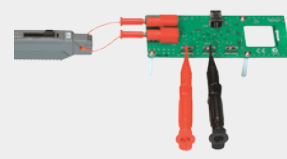
Model (Name)	Frequency bandwidth <sup>*1, *2</sup>	Attenuation ratio	Maximum allowed differential voltage	Maximum input voltage	Power supply
700924	100 MHz	100:1, 1000:1	100:1 $\pm 350$ V (DC + ACpeak) 1000:1 $\pm 1400$ V (DC + ACpeak)	$\pm 1400$ V (DC + ACpeak) CAT III	AA batteries or B9852MJ power cable (B9852MJ is sold separately)
700925	15 MHz	10:1, 100:1	10:1 $\pm 50$ V (DC + ACpeak) 100:1 $\pm 500$ V (DC + ACpeak)	$\pm 500$ V (DC + ACpeak) CAT III	AA batteries or B9852MJ power cable (B9852MJ is sold separately)
701920	500 MHz	10:1	$\pm 12$ V (DC + ACpeak)	$\pm 30$ V (DC + ACpeak)	Probe power supply
701921	100 MHz	10:1, 100:1	10:1 $\pm 70$ V (DC + ACpeak) 100:1 $\pm 700$ V (DC + ACpeak)	$\pm 700$ V (DC + ACpeak) CAT III	AA batteries or B9852MJ power cable (B9852MJ is attached)
701922	200 MHz	10:1	$\pm 20$ V (DC + ACpeak)	$\pm 60$ V (DC + ACpeak) CAT I	Probe power supply
701924 (PBDH1000)	1 GHz	50:1	$\pm 25$ V (DC + ACpeak)	$\pm 35$ V (DC + ACpeak)	YOKOGAWA probe I/F
701926	50 MHz	100:1, 1000:1	100:1 5000 Vrms and 700 Vpeak 1000:1 5000 Vrms and 7000 Vpeak	5000 Vrms and 7000 Vpeak CAT I	AA batteries or B9852MJ power cable (B9852MJ is attached)
701927 (PBDH0150)	150 MHz	50:1, 500:1	50:1 $\pm 140$ V (DC + ACpeak) 500:1 $\pm 1400$ V (DC + ACpeak)	$\pm 1400$ V (DC + ACpeak) CAT II	YOKOGAWA probe I/F

\*1: DC to -3 dB point \*2: Defined by a probe only

(Note) This product has not been designed or manufactured for applications in which high reliability is required over a long time period. This probe is not water or dust resistant. Do not use the probe in areas with a lot of dust or where water may be spilled. The maximum input voltage depends on the input signal frequency.

# Current probes

## 7 For measuring high and low currents

<p><b>701931</b> DC to 2 MHz, 500 A</p>  <p>For measuring the high current of a power device, a motor or inverter drive without breaking the circuit.</p>	<p><b>701930</b> DC to 10 MHz, 150 A</p>  <p>A higher bandwidth probe for measuring the high current of a power device, a motor or inverter drive without breaking the circuit.</p>	<p><b>701933</b> DC to 50 MHz, 30 A</p>  <p>For measuring higher speed current waveforms without breaking the circuit.</p>	<p><b>701932</b> DC to 100 MHz, 30 A</p>  <p>Similar to the 701933 with higher bandwidth.</p>											
<p><b>701928</b> DC to 100 MHz, 30 A</p>  <p>PBC100</p> <p>Similar to the 701932 with the YOKOGAWA probe interface. This probe is automatically recognized by a DLM series oscilloscope which also provides power.</p>	<p><b>701929</b> DC to 50 MHz, 30 A</p>  <p>PBC050</p> <p>Similar to the 701933 with the YOKOGAWA probe interface. This probe is automatically recognized by a DLM series oscilloscope which also provides power.</p>	<p><b>701917</b> DC to 50 MHz, 5 A</p>  <p>A low noise probe for low current measurement for such things as LED drive circuits or small motors.</p>	<p><b>701918</b> DC to 120 MHz, 5 A</p>  <p>A higher frequency version of the 701917</p>											
<p><b>701934*</b> Probe power supply</p>  <p>A power supply for current probes, FET probes, and differential probes. Provides power for up to four probes, including large current probes.</p> <table border="1"> <tr> <td>Number of power supply connectors</td> <td>4</td> </tr> <tr> <td>Output voltage</td> <td>±12 V ±0.5 V</td> </tr> <tr> <td>Rated output current</td> <td>+12 V: 2.5 A, -12 V: 2.5 A (the total value of four outputs)</td> </tr> <tr> <td>Rated supply voltage</td> <td>AC100 to 240 V (50/60 Hz)</td> </tr> <tr> <td>External dimensions</td> <td>Approx. 80(W) × 119(H) × 200(D)mm</td> </tr> <tr> <td>Weight</td> <td>Approx. 1.2 kg</td> </tr> </table>	Number of power supply connectors	4	Output voltage	±12 V ±0.5 V	Rated output current	+12 V: 2.5 A, -12 V: 2.5 A (the total value of four outputs)	Rated supply voltage	AC100 to 240 V (50/60 Hz)	External dimensions	Approx. 80(W) × 119(H) × 200(D)mm	Weight	Approx. 1.2 kg	<p><b>/Px option*</b> Probe power option</p>  <p>Built-in probe power terminals on the main unit can be used to power current probes, FET probes, and differential probes (/P2, /P4 and /P8 option).</p>	<p><b>701936</b> Deskew correction signal source</p>  <p>To enable the skew between voltage and current inputs to be adjusted</p>
Number of power supply connectors	4													
Output voltage	±12 V ±0.5 V													
Rated output current	+12 V: 2.5 A, -12 V: 2.5 A (the total value of four outputs)													
Rated supply voltage	AC100 to 240 V (50/60 Hz)													
External dimensions	Approx. 80(W) × 119(H) × 200(D)mm													
Weight	Approx. 1.2 kg													

\*Probes with the YOKOGAWA probe I/F such as the 701927, 701928 and 701929 do not require a /Px option and 701934 since power is supplied from the front panel.

### Current probes selection guide<sup>6</sup>

Model (Name)	Frequency bandwidth <sup>1</sup>	Maximum continuous input range <sup>2</sup>	Maximum peak current value <sup>2</sup>	Amplitude accuracy <sup>3</sup>	Total length	Noise <sup>4</sup>	Power supply <sup>5</sup>
701917	50 MHz	5 Arms	7.5 Apeak	3%	1.5 m	75 μArms or less	Probe power supply
701918	120 MHz	5 Arms	7.5 Apeak	3%	1.5 m	75 μArms or less	Probe power supply
701928 (PBC100)	100 MHz	30 Arms	50 Apeak	1%	1.5 m	2.5 mArms or less	YOKOGAWA probe I/F
701929 (PBC050)	50 MHz	30 Arms	50 Apeak	1%	1.5 m	2.5 mArms or less	YOKOGAWA probe I/F
701930	10 MHz	150 Arms	300 Apeak	1%	2 m	25 mArms or less	Probe power supply
701931	2 MHz	500 Arms	700 Apeak	1%	2 m	25 mArms or less	Probe power supply
701932	100 MHz	30 Arms	50 Apeak	1%	1.5 m	2.5 mArms or less	Probe power supply
701933	50 MHz	30 Arms	50 Apeak	1%	1.5 m	2.5 mArms or less	Probe power supply

<sup>1</sup>: DC to -3 dB point, defined by a probe only

<sup>2</sup>: Depending on the input signal frequency. See the following website for details: [https://tmi.yokogawa.com/solutions/products/oscilloscopes/current-probes/#Details\\_Frequency-Derating](https://tmi.yokogawa.com/solutions/products/oscilloscopes/current-probes/#Details_Frequency-Derating)

<sup>3</sup>: The condition is under the maximum continuous input and DC or 45 to 66 Hz. The amplitude accuracy of a brand-new 701917/701918 is typically 1%.

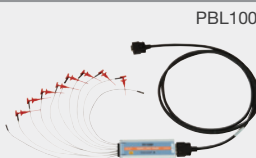
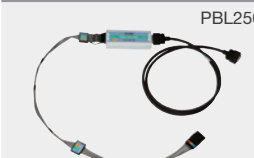
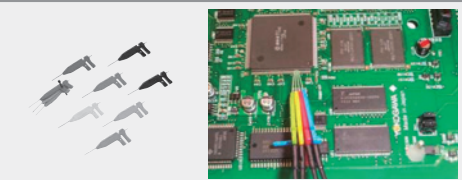
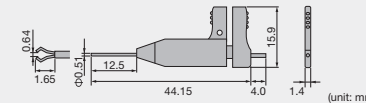

<sup>4</sup>: When used together with a measuring instrument with 20 MHz bandwidth. (30 MHz for the 701917/701918).

<sup>5</sup>: The number of probes is limited when using a DL probe power terminal. See the following website for details: [https://www.yokogawa.com.jp/ftp/dist/ks/eusers/lca/current\\_probe\\_EN\\_01.pdf](https://www.yokogawa.com.jp/ftp/dist/ks/eusers/lca/current_probe_EN_01.pdf)

<sup>6</sup>: Output ratios: 701917/701918 = 1 V/A, 701928/701929/701932/701933 = 0.1 V/A, 701930/701931 = 0.01 V/A

# Logic probes and accessories

## For oscilloscopes




<p><b>701988</b> For DLM2000/4000 series</p> <p>PBL100</p>  <p>Maximum toggle frequency: 100 MHz Input impedance (typical value): 1 MΩ/10 pF</p>	<p><b>701989</b> For DLM2000/4000 series</p> <p>PBL250</p>  <p>Maximum toggle frequency: 250 MHz Input impedance (typical value): 100 kΩ/3 pF</p>	<p><b>B9852ES</b> IC clip</p>  <p>By attaching to the tips of logic probe (701988 or 701989) or mini-clips (B9852CR), the IC clips can be used to clip contiguous 0.5 mm pitch terminals. A total of 10 clips are included.</p>  <p>(unit: mm)</p>	<p><b>701909</b> Logic probe accessory kit</p>  <p>Logic probe accessory kit for use with 701989.</p>
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### Logic probe selection guide (for oscilloscopes)\*1

Model (Name)	Inputs	Input voltage range	Input impedance	Maximum input voltage	Threshold level	Note
701988 (PBL100)	8	±40 V	1 MΩ/10 pF (Typ.)	±42 V (DC + ACpeak) or 29 Vrms <sup>2</sup>	±40 V at 0.05 V resolution <sup>1</sup>	Maximum toggle frequency is 100MHz.
701989 (PBL250)	8	±6 V mainly on a setting threshold level	100 kΩ/3 pF (Typ.)	±40 V (DC + ACpeak) or 28 Vrms <sup>2</sup>	±6 V at 0.05 V resolution <sup>1</sup>	Maximum toggle frequency is 250MHz. Related accessory: 701909

\*1: When it is used with DLM2000/4000 series

## For ScopeCorders

<p><b>700986</b> High speed logic probe (TTL)</p>  <p>8 bit non-isolated inputs. Two measurement leads (B9879PX and B9879KX) included.</p>	<p><b>700987</b> Isolation logic probe</p>  <p>8 bit isolated inputs. Response time: 20 ms (AC) Suitable for high voltage measurement. Use with 758917 leads for 42 V or more. use with 366961 leads for low level common mode voltages less than 42 V.</p>	<p><b>702911/12</b> High speed logic probe (TTL/Contact input)</p>  <p>8 bit for TTL or contact closure inputs. Two measurement leads (B9879PX and B9879KX) included. Cable length: 1 m (702911), 3 m (702912)</p>
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### Logic probe selection guide (for ScopeCorders)











Model (Name)	Inputs	Input voltage range	Input impedance	Maximum input voltage	Threshold level	Note
700986	8	±42 V (DC + ACpeak)	Approx. 100 kΩ	±42 V (DC + ACpeak)	1.4 V	TTL input Response time: 1 μs or less
700987	8	DC: H/L detection for 10 V to 250 V (DC) AC: H/L detection for 80 V to 250 V (AC, 50/60 Hz)	Approx. 100 kΩ	250 Vrms CAT II	DC: 6 V ±50% AC: 50 V ±50%	For power supply monitoring and isolated input Response time: DC input: 1 ms or less AC input: 20 ms or less
702911	8	±35 V (DC + ACpeak)	10 kΩ or more	±35 V (DC + ACpeak)	Approx. 1.4 V	Cable length: 1 m TTL, contact input Response time: 3 μs or less
702912	8	±35 V (DC + ACpeak)	10 kΩ or more	±35 V (DC + ACpeak)	Approx. 1.4 V	Cable length: 3 m TTL, contact input Response time: 3 μs or less



# High-voltage measurement accessories

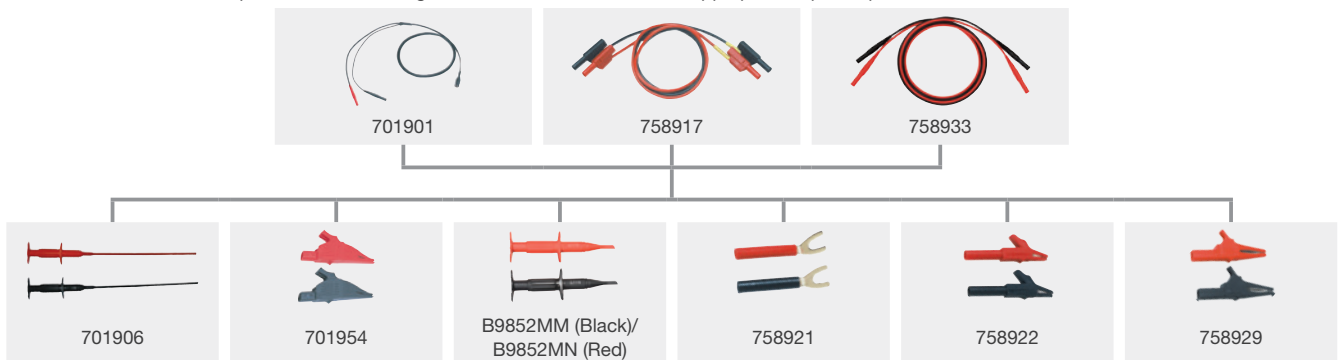
9 These accessories enable safe high-voltage measurements when used together with DL850E and SL1000 isolated input modules.

Note: read the User's Manual carefully before making high-voltage measurements

<p><b>701901</b> 1:1 BNC safety adapter cable</p>  <p>1000 Vrms CAT II, 1.8 m long Safety BNC (plug) to safety banana (plug) use in combination with a pair of optional adapters or clips. 1000 Vrms CAT II</p>	<p><b>758917</b> Measurement lead set</p>  <p>A set of 0.8 m long red and black test leads, stackable, used in combination with a pair of optional adapters or clips. 1000 Vrms, 32 Arms CAT II</p>	<p><b>758933</b> Measurement lead set</p>  <p>2 pieces (red and black) in 1 set length: 1.0 m Used in combination with a pair of optional adapters or clips. 1000 Vrms, 19 Arms CAT III</p>	<p><b>701902/03</b> Safety BNC cable</p>  <p>701902: 1000 Vrms CAT II (BNC-BNC), 1 m 701903: 1000 Vrms CAT II (BNC-BNC), 2 m</p>
<p><b>701906</b> Long test clips</p>  <p>Set contains one black and one red clip. 1000 Vrms CAT II</p>	<p><b>701954</b> Alligator clip (Dolphin type)</p>  <p>Set contains one black and one red clip. 1000 Vrms CAT II</p>	<p><b>B9852MM (Black)/B9852MN (Red)</b> Pincher tip</p>  <p>1000 Vrms CAT III</p>	<p><b>758921</b> Fork terminal adapter</p>  <p>Set contains one black and one red adapter. 1000 Vrms CAT II</p>
<p><b>758922</b> Small alligator-clip adapter</p>  <p>Set contains one black and one red adapter. 300 Vrms CAT II</p>	<p><b>758929</b> Large alligator-clip adapter</p>  <p>Set contains one black and one red adapter. 1000 Vrms CAT II</p>	<p>If these clips and adapters are used with differential probes such as the 700924, 701927 etc. the specifications of the maximum input voltage and frequency bandwidth may change. Caution: Take care when using the 758921 as there is a risk of electric shock from exposed metal parts.</p>	

## Combination examples












Safe measurements can be performed when using these measurement leads with appropriate clips/adapters.



It is the lower measurement category if the measurement category are different combination.









# Cables/Adapters/Other accessories

## Cables and adapters

<p><b>366924*1/25*1</b> BNC cable</p>  <p>1 m long (366924) and 2 m long (366925) BNC-BNC cables.</p>	<p><b>366926*1</b> BNC cable (1:1)</p>  <p>1 m long BNC-alligator clip cable.</p>	<p><b>366961*1</b> Measurement cable</p>  <p>Subassembly of 1.2 m long test leads with alligator-clip adapters.</p>	<p><b>366973</b> Go/No-Go cable</p>  <p>For DLM series. Used to connect an external device.</p>
<p><b>366921*1</b> Conversion adapter</p>  <p>BNC (plug)-Banana-jack (female) adapter.</p>	<p><b>366922*1</b> Conversion adapter</p>  <p>Banana-plug (male)-BNC (jack) adapter.</p>	<p><b>366923*1</b> T-adapter</p>  <p>T-adapter for BNC connectors.</p>	<p><b>751512*1</b> Conversion adapter</p>  <p>Safety-terminal-binding-post adapter.</p>
<p><b>366928*1</b> Conversion adapter</p>  <p>A BNC (jack)-RCA (plug) adapter.</p>	<p><b>758924</b> BNC adapter</p>  <p>An adapter for fitting a 4 mm wide banana jack to a BNC connector (plug).</p>	<p><b>700976*2</b> 50 Ω terminator</p>  <p>Used to connect an oscilloscope having a 1 MΩ input to a probe with a 50 Ω output. Frequency range: DC to 500 MHz. Allowable power: 0.5 W.</p>	

\*1: Unsafe for voltage measurements above 42 V. \*2: Not required for DLM oscilloscopes which can accept 50 Ω terminations directly.

## ScopeCorder accessories

<p><b>701970</b> DC power cord</p>  <p>For DC power supply model (/DC). Cigarette lighter plug type. Cable length: 1.8 m</p>	<p><b>701971</b> DC power cord</p>  <p>For DC power supply model (/DC). Alligator clip type. Cable length: 1.8 m</p>	<p><b>720911</b> External I/O cable</p>  <p>For DL850/E series EXT I/O cable</p>	<p><b>720901-01/-02</b> Synchronous connecting cable</p>  <p>For SL1000. Capable of synchronous operation for up to 8 units with a total connection cable length of 10 m or less. Cable length: 720901-01: 1 m, 720901-02: 3 m</p>
<p><b>701955/56</b> NDIS bridge heads</p>  <p>NDIS cable (5 m) included. Bridge resistance: 120 Ω (701955), 350 Ω (701956)</p>	<p><b>701957/58</b> D-sub bridge heads</p>  <p>D-sub cable (5 m) included. Supports Shunt-Cal. Bridge resistance: 120 Ω (701957), 350 Ω (701958)</p>	<p><b>700940</b> NDIS connector cable</p>  <p>1.5 m long connector-to-connector adapter cable complying with NDIS-MIL C26482. Used to connect a MIL-standard cable to the strain module</p>	<p><b>A1002JC</b> NDIS connector</p>  <p>NDIS connector for direct connection to a strain module.</p>

## Others

<p><b>701919</b> Probe stand</p>  <p>Hands-free circuit board positioner with heavy base and flexible arm. For 8 to 13 mm diameter probes.</p>	<p><b>438920/21/22</b> Shunt resistor</p>  <p>Resistance: 250 Ω ±0.1% (438920), 100 Ω ±0.1% (438921), 10 Ω ±0.1% (438922). TCR: ±25 ppm/°C. Rated power: 0.3W</p>	<p><b>701963/64/68</b> Soft carrying cases</p>  <p>701963: for DL850 series 701964: for DLM2000 series 701968: for DLM4000 series Size (mm): 450 × 285 × 270 (701963), 335 × 260 × 360 (701964), 520 × 285 × 285 (701968)</p>
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# Software

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Yokogawa provides a comprehensive suite of software tools to complement and support your oscilloscope and ScopeCorder measurement tasks.

Xviewer allows you to display acquired waveforms, transfer files and control instruments remotely. The MATLAB tool kit enables instruments to easily interface with MATLAB. Instruments can be controlled from within MATLAB and data transferred.

Free software such as XviewerLITE, Xwirepuller, a NI DIAdem plugin and drivers for LabVIEW enable you to control instruments from your PC and transfer data via the Ethernet, USB, or GP-IB interface.

Developer tools such as DLLs, APIs and sample programs are available to enable you to easily develop Microsoft Visual C++ and Microsoft Visual Basic programs to communicate between the PC and our instruments.



Example of remote monitoring and waveform analysis using Xviewer

Please see:  
<http://tmi.yokogawa.com/products/oscilloscopes/oscilloscopes-application-software/>  
<http://tmi.yokogawa.com/service-support/downloads/>

## Model numbers and suffix codes

### Passive probe

Model	Product	Description
700960	Passive probe	200 MHz bandwidth, $\pm 600$ Vpeak
700988	Passive probe	400 MHz bandwidth, $\pm 600$ Vpeak
701938	Passive probe	200 MHz bandwidth, $\pm 600$ Vpeak
701939	Passive probe	500 MHz bandwidth, $\pm 600$ Vpeak
701940	Passive probe	10 MHz bandwidth, $\pm 600$ Vpeak
701943	Passive probe	500 MHz bandwidth, $\pm 600$ Vpeak
701941	Miniature passive probe	500 MHz bandwidth, 400 Vrms, cable length: 1.2 m
701942	Miniature passive probe	350 MHz bandwidth, 400 Vrms, cable length: 3.0 m
701946	Miniature passive probe	500 MHz bandwidth, 400 Vrms
701944	100:1 high voltage probe	400 MHz bandwidth, 1000 Vrms, cable length: 1.2 m
701945	100:1 high voltage probe	250 MHz bandwidth, 1000 Vrms, cable length: 3.0 m
701947	100:1 probe	200 MHz bandwidth, $\pm 1000$ Vpeak, for use with isolated BNC inputs
700929	10:1 probe	100 MHz bandwidth, $\pm 1000$ Vpeak, for use with isolated BNC inputs
702902	10:1 passive probe (Wide operating temperature)	60 MHz bandwidth, $\pm 1000$ Vpeak, for use with isolated BNC inputs
702906	10:1 passive probe (Wide operating temperature)	200 MHz bandwidth, $\pm 1000$ Vpeak
701974	low capacitance probe	5 GHz bandwidth, 500 $\Omega$ or 1 k $\Omega$ input impedance

### FET probe/Probe accessories

Model	Product	Description
700939	FET probe	900 MHz bandwidth, $\pm 10$ Vpeak
366945	Printed circuit board adapter	For 701938, 701939, 701943, 700939 (10 pieces)
366946	Solder-in adapter	For 701938, 701939, 701943, 700939
700971	Mini clip converter	For 701938, 701939, 701943, 700939
700972	BNC adapter	For 701938, 701939, 701943, 700939
701948	Plug on clip	For 700929, 701947
B9852CR	Mini clip converter	For 700988, 700960, 701940
B9852HF	Basic accessories set for the 701941/42 probe	11 accessories are included
B8099NL	4mm conversion adapter	For 702902 and 702906 (Pincher tip end)
B8099NM	4mm conversion adapter	For 702902 and 702906 (Ground lead end)

### Differential probe

Model	Product	Description
700924	Differential probe	Maximum $\pm 1400$ Vpeak, 100 MHz bandwidth
700925	Differential probe	Maximum $\pm 500$ Vpeak, 15 MHz bandwidth
701920	Differential probe	Maximum $\pm 12$ Vpeak, 500 MHz bandwidth
701921	Differential probe	Maximum $\pm 700$ Vpeak, 100 MHz bandwidth
701922	Differential probe	Maximum $\pm 20$ Vpeak, 200 MHz bandwidth
701924	Differential probe	Maximum $\pm 25$ Vpeak, 1 GHz bandwidth, probe I/F
701926	Differential probe	Maximum 7000 Vpeak and 5000 Vrms, 50 MHz bandwidth
701927	Differential probe	Maximum $\pm 1400$ Vpeak, 150 MHz bandwidth, probe I/F
B9852MJ	Power cable	Provides power from the DL main unit or power supply

### Current probe

Model	Product	Description
701917	Current probe	DC to 50 MHz, 5 Arms, high-sensitivity
701918	Current probe	DC to 120 MHz, 5 Arms, high-sensitivity
701928	Current probe	DC to 100 MHz, 30 Arms, probe I/F
701929	Current probe	DC to 50 MHz, 30 Arms, probe I/F
701930	Current probe	DC to 10 MHz, 150 Arms
701931	Current probe	DC to 2 MHz, 500 Arms
701932	Current probe	DC to 100 MHz, 30 Arms
701933	Current probe	DC to 50 MHz, 30 Arms
701934	Power supply	Number of connectors: 4
701936	Deskew signal source	For voltage to current skew adjustment

### Logic probe

Model	Product	Description
700986	Logic probe	TTL input
700987	Logic probe	Isolated input
701988	Logic probe	Maximum toggle frequency: 100 MHz
701989	Logic probe	Maximum toggle frequency: 250 MHz
702911	Logic probe	TTL/contact input, cable length: 1 m
702912	Logic probe	TTL/contact input, cable length: 3 m
B9852ES	IC clip	For contiguous 0.5 mm pitch terminals
701909	Accessory kit	For 701989

## High voltage measurement accessories

Model	Product	Description
701901	1:1 BNC safety adapter lead	1000 Vrms CAT II, Cable length: 1.6 m (701901 can use with the accessories below.)
701906	Long test clips	1000 Vrms CAT II, A set of black and red clip
701954	Alligator clip (Dolphin type)	1000 Vrms CAT II, A set of black and red clip
B9852MM	Pincher tip (Black)	1000 Vrms CAT III
B9852MN	Pincher tip (Red)	1000 Vrms CAT III
758921	Fork terminal adapter	1000 Vrms CAT II, A set of black and red clip
758922	Small alligator-clip adapter	300 Vrms CAT II, A set of black and red clip
758929	Large alligator-clip adapter	1000 Vrms CAT II, A set of black and red clip
701902	Safety BNC cable	1000 Vrms, Cable length: 1 m
701903	Safety BNC cable	1000 Vrms, Cable length: 2 m
758917	Measurement lead set	1000 Vrms CAT II, A set of black and red cable
758933	Measurement lead set	1000 Vrms CAT III, A set of black and red cable

## Cables

Model	Product	Description
366924	BNC cable	Total length: 1 m
366925	BNC cable	Total length: 2 m
366926	BNC cable	BNC-alligator clip cable, Total length: 1 m
366961	Measurement cable	Banana-plugs (male) cable with alligator clips
366973	GO/NO-GO Cable	For DLM series

## Adapters

Model	Product	Description
366921	Conversion adapter	BNC-banana-jack (female) adapter
366922	Conversion adapter	Banana-plug (male)-BNC adapter
366923	T-adapter	T-adapter for BNC connectors
366928	Conversion adapter	A BNC (jack)-RCA (plug) adapter
751512	Conversion adapter	Safety terminal-binding post adapter
758924	Conversion adapter	BNC-banana jack (female) adapter
700976	50 Ω terminator	Feed-through type

## ScopeCorder accessories

Model	Product	Description
701955	Bridge head	NDIS cable (5 m) included, 120 Ω
701956	Bridge head	NDIS cable (5 m) included, 350 Ω
701957	Bridge head	D-sub cable (5 m) included, 120 Ω
701958	Bridge head	D-sub cable (5 m) included, 350 Ω
700940	NDIS connector cable	NDIS-MIL conversion, Total length: 1.5 m
A1002JC	NDIS connector	For strain module
701970	DC power cord	Cigarette lighter plug type
701971	DC power cord	Alligator clip type
720901-01	Synchronous connecting cable	For SL1000, Cable length: 1 m
720901-02	Synchronous connecting cable	For SL1000, Cable length: 3 m
720911	External I/O cable	For DL850/E series, PX8000

## Printer Paper

Model	Product	Description	Sales unit
B9988AE	Printer paper	For DLM2000/4000, DL850/E series DL9000/6000/750 series	10
B9850NX	Printer paper	For DL1600/1700E/7400/9500/9700, DLM6000, SB5000 series	5

Please order multiple of the order quantity.

Model	Product	Description
701966	Printer paper	For DL750P, SL1400 (6 rolls)

## Others

Model	Product	Description
438920	Shunt resistor	250 Ω ±0.1%, 0.3 W, ±25 ppm/°C
438921	Shunt resistor	100 Ω ±0.1%, 0.3 W, ±25 ppm/°C
438922	Shunt resistor	10 Ω ±0.1%, 0.3 W, ±25 ppm/°C
701919	Probe stand	Attachable probe: approx. dia. 8 to 13 mm

## Carrying Cases

Model	Product	Description
701963	Soft carrying case	For DL850 series
701964	Soft carrying case	For DLM2000 series
701968	Soft carrying case	For DLM4000 series
93050	Carrying case	For DL350

## Rack mount kit

Model	Product	Description
701969-E	Rack mount kit	For DLM4000 series (EIA)
751541-E4	Rack mount kit	For SL1000 (EIA)

## Front Panel Protective Covers

Model	Product	Description
B8023EA	Front panel protective cover	A transparent cover for DL750, DL750P
B8051DP	Front panel protective cover	A transparent cover for DL7400
B8059EP	Front cover	For DLM2000 series
B8069CH	Front cover	For DLM4000 series
B8074EA	Front cover	For DL850/E series
B8080EM	Front panel protective cover	A transparent cover for DL9000, DL9500, DL9700, SB5000 series
B9989FA	Front panel protective cover	A transparent cover for DL1600, DL1700E series

## Software

Product	Model	Suffix code	Description
Xviewer	701992		Advanced waveform display and analysis
		-SP01	Standard Edition (1 license)
		-GP01	Math Edition (1 license)
		/JS01	DL850 Advanced Utility (1 license)
XviewerLITE	(Free software)		Basic waveform display and measurement
XWirepuller	(Free software)		Waveform monitoring and instrument control
MATLAB tool kit	701991		Plug in software for the MATLAB

Visit the following web sites for details about this software:  
<http://tmi.yokogawa.com/products/oscilloscopes/oscilloscopes-application-software/>

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### NOTICE

- Before operating the product, read the user's manual thoroughly for proper and safe operation.

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