



Advanced Networking and PC Connectivity

Web Server Functions

Connect the DL750 to your PC through the Ethernet connection. This allows for easy remote operation using Internet Explorer.



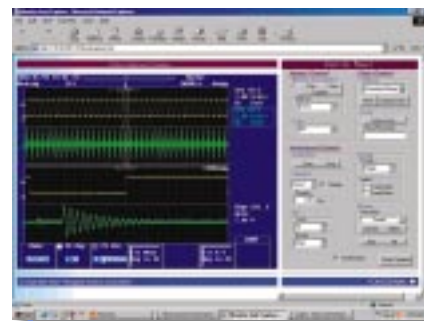
FTP

You can easily copy and paste files to and from a PC and the instrument's flash memory or other storage media.



Measurement Trend

Using Internet Explorer, you can periodically or manually download screen images to a PC for remote waveform monitoring. You can also download waveform data, start or stop a measurement, or setup a split display all from a PC.



Data Capture

This function downloads values of waveform parameters periodically, launches MS Excel and graphs the parameters on a spreadsheet values. This enables you to check the parameter trends at a glance.

Software for Waveform Measurement on a PC

Software for Remotely Controlling the DL Series

Wirepuller



The Wirepuller software program displays a screen image of the DL's front panel on your PC so that you can monitor waveform signals. In addition, you can use the PC's mouse and keyboard to control the DL. The DL can be controlled via an Ethernet, USB, or GP-IB.

This software program can be downloaded from the following URL (requires registration):

<http://www.yokogawa.com/tm/Bu/DLsoft/wire/>

Further details are available at the YOKOGAWA web site.

Software for Using Your PC to Check Waveform Data Captured in Long Memory

Waveform Viewer for DL Series



The Waveform Viewer software program lets you view waveform signals on your PC just as they appear on the DL screen. This includes zoom display, X-Y display and the history memory thumbnail displays. In addition, data can be converted to CSV format for use in programs like Excel.

A trial version of this software program can be downloaded from the following URL:

<http://www.yokogawa.com/tm/Bu/700919/>

Further details are available at the YOKOGAWA web site.

Main Unit Specifications

Basic Specifications

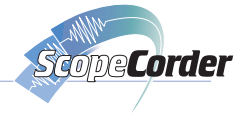
● Input Type	Plug-in module (Each unit has a built-in A/D converter)
Slots	8
Logic inputs	16 (8 bits × 2)
● Horizontal Maximum record length	2.5 MW/CH, 50 MW total (standard) 10 MW/CH, 250 MW total (with /M1 option) 25 MW/CH, 500 MW total (with /M2 option) 50 MW/CH, 1 GW total (with /M3 option)
Time axis accuracy ¹	±0.005%
Sweep time	500 ns to 5 sec/div (in steps of 1, 2, or 5), 10 sec/div, 20 sec/div, 30 sec/div 3, 4, 6, 8, 10, 20, 30 sec/div 1 to 10 min/div (1 min steps), 12 min/div, 15 min/div, 30 min/div 1 to 10 h/div (1 h steps), 12 h/div 1 day/div, 2 days/div, 3 days/div
● Acquisition modes	Normal
Envelope	Maximum sampling rate: 10 MS/s Holds peak value at maximum sampling rate, regardless of time/div setting
Box average	Increases A/D resolution up to 4 bits (up to 16 bits)
Averaging	Number of averaging: 2 to 65,536 (2 ⁿ steps)
Roll	100 msec/div or less

● Triggers	AUTO, AUTO LEVEL, NORMAL, SINGLE, SINGLE (N), LOG
Modes	0 to 100% (in 0.1% step)
Pretrigger	CH1 to CH16, DSP1 to DSP6, LINE, EXT,
Simple trigger source	LOGIC_A, LOGIC_B, TIME
Slope selection	CH1 to CH16, DSP1 to DSP6: Rise, fall, rise-fall EXT (external trigger input), LOGIC_A, LOGIC_B: Rise, fall Time: Date (year/month/date), hour (hours/minutes), time interval (1 minute to 24 hours)
Enhanced trigger source	CH1 to CH16, LOGIC_A, LOGIC_B
Enhanced trigger type	A → B (N), A delay B, B > Time, B < Time, B Time Out, Period, Window, OR, Edge On A, Wave Window
● Screen updating rate	Maximum 30 screens/sec for a single waveform
1. Typical operating conditions:	Ambient temperature of 23°C ± 5°C, ambient humidity (RH) of 55 ± 10%

Display

Display	10.4-inch color TFT liquid crystal display
Effective screen size	211.2 mm × 158.4 mm
Resolution	800 × 600 ¹
Waveform display pixels	650 × 512 (in normal waveform display mode) 750 × 512 (in wide waveform display mode)
Display modes	Split
Zoom	Single, dual, triad, quad, octal Main, Main & Z1, Main & Z1 & Z2, Main & Z2, Z1 Only, Z2 Only, Z1 & Z2 (Z1 and Z2 are

Main Unit Specifications



- abbreviations for zoom area 1 and zoom 2, respectively)
- XY Single Mode (X is fixed, Y is set by user), Quad Mode (XY1, XY2, XY3, XY4)
- Accumulation PERSIST Overlays in one color.
1. The LCD may contain some pixels that are always off or always on. In addition, brightness may vary due to the characteristics of the liquid crystal display. This is not an indication of any problem with the display.

Recorder

- Built-in printer
 - Printing method Thermal line-dot printing
 - Paper width 112 mm
 - Effective recording width 104 mm
 - Functions Screen printing, long printing
- Real-time hard drive recording (with /C8 option)
 - Data capacity 1 GW (for one time record)
 - Maximum sampling rate 100 kS/s (using 1 channel)

DualCapture

- This function captures the same waveform data at two different sampling rates.
- Main (low-speed) maximum sampling rate
Roll mode area at 100 kS/s
- Sub (high-speed) maximum sampling rate
10 MS/s
- Main maximum memory length
100 MW (with /M3 option)
- Sub memory length
10 kW (fixed)
- Sub maximum number of captured screens
100

Analysis Functions

- Channel-to-channel calculation function
 - Definable math waveforms 8
 - Calculable record length 800 kW (using MATH1 only)
100 kW (using MATH1 through MATH8)
- Standard operators
 - Addition, subtraction, multiplication, division, binary conversion, phase shifting, FFT
 - PS (Power Spectrum)
 - Number of points 1000, 2000, 10,000
 - Window functions Rectangular, Hanning, Flat-Top
- User-defined math function (with /G2 option)
 - Operators ABS, SQR, LOG, EXP, NEG, SIN, COS, TAN, ATAN, PH, DIF, DDIF, INTG, BIN, P2, P3, F1, F2, FV, PWHL, PWHL, PWLL, PWXX, FILT1, FILT2, HLTB, MEAN, MAG, LOGMAG, PHASE, REAL, IMAG
 - FFT types LS, PS, PSD, CS, TF, CH
 - Number of points 1000, 2000, 10,000
 - Window functions Rectangular, Hanning, Flat-Top

DSP Channel Function (with the /G3 option)

- DSP channels 6
- Maximum sampling rate¹ 100 kS/s (when exceeding 100 kS/s, the sampling rate is resampled at 100 kS/s)
- Operators
 - Calculation between channels (addition, subtraction, multiplication, division), differentiation (w/ LPF), integration, digital filtering (LPF/HPF/BPF, FIR type, IIR type, variable cutoff frequency)
- Digital filtering cutoff setting range
 - IIR type: 0.2 to 30% of sampling frequency
 - FIR type: 2 to 30% of sampling frequency
- Calculation delay 4 sampling + digital filtering calculation delay
1. When the DSP channel is ON, the maximum sampling rate of the analog channel is 5 MS/s.

Waveform Measurement Functions

- Cursors
 - Types
 - Horizontal Two cursors
 - Vertical Two cursors
 - Marker Four markers
 - Degree Cursor measurement on the horizontal axis is displayed in a degree. (for TY display only)
 - H&V (for XY display only)
- Automatic measurement of waveform parameters
 - Maximum number of measured parameters 24
 - Measured parameters P-P, Max, Min, High, Low, Avg, Rms, Amp, StdDev, +Oshot, -Oshot, Rise, Fall, Freq, Period, +Duty, +Width, -Width, Pulse Burst1, Burst2, Avg Freq, Avg Period, Delay, Int1TY, Int2TY, Int1XY, Int2XY
- Cycle statistical process
 - Maximum number of cycles 24,000 (for one parameter)
 - Maximum total number of parameters 24,000 (total measured results)
 - Statistical values Maximum/minimum/average/standard deviations/number of samples
 - Maximum measurement range 10 MW
 - Search function Edge, voice, auto scroll
 - History search function Zone
 - GO/NO-GO Judgment
 - Parameter: Make judgments using combinations of 16 waveform parameters.
 - Zone: Make judgments using combination of up to 6 waveform zones (AND, OR)
 - Actions: One or more of the followings: outputs screen image data, saves waveform data, sounds a buzzer, sends email

Screen Data Output (Printer)

- Destinations Select built-in printer, external USB printer, or network printer (with /C10 option)
- Formats
 - Normal Outputs hard copy of screen shot
 - Long Zooms displayed waveform along time axis and outputs (The zoom factor differs depending on the time/div.)

Screen Data Output (Image Saving)

- Destinations Installed drive (floppy drive, Zip® drive, or PC card), external SCSI drive, internal hard drive (with /C8 option), network drive (with /C10 option)
- Formats PNG, JPEG, BMP, PostScript

External I/O

- LOGIC input specifications
 - Input points 8 bits × 2
 - Maximum sampling rate 10 MS/s
 - Compatible probes 8-bit non-isolated (700986), 8-bit isolated (700987)
- EXT TRIG IN/EXT TRIG OUT
 - Connector RCA pin jack
 - Input/output level TTL (0 to 5 V)
- EXT Clock IN
 - Connector RCA pin jack
 - Input level TTL (0 to 5 V)
 - Input frequency Up to 1 MHz (for module 701250/701251/701255), up to 100 kHz (for module 701260/701270/701271, DSP-CH), up to 500 Hz (for module 701265)
- Communication interfaces
 - GP-IB, USB peripheral equipment jacks (USB keyboards and USB printers), USB (complies with Rev. 1.1, for connection to PC), Ethernet (complies with 100BASE-TX and 10BASE-T; with /C10 option), serial (RS232), and SCSI
- GO/NO-GO I/O
 - Connector type Modular jack (RJ12)
 - I/O level TTL (0 to 5 V)
- Probe power terminal (with /P4 option)
 - Maximum number of probes powered 4
 - Compatible probes Current probes 700937 (15 Apeak) and 701930 (150 Arms)
 - Maximum number of current probes that can be used at one time 4 (for module 700937), 2 (for module 701930)

Voice Memo Function

- Voice memo
 - Record (roll mode)
 - Flexible: Multiple recording (min. 3 sec up to 100 sec, total 100 sec)
 - Fixed: Select from 5 sec × 20, 10 sec × 10, 20 sec × 5, 25 sec × 4, 50 sec × 2, 100 sec × 1
 - Save Save together with waveform data (binary, same file)
 - Playback Voice data loaded on the main unit is outputted from microphone terminal and speaker output terminal (GO/NO-GO)
- Voice comment
 - Record 3 to 100 sec
 - Save When image saving is executed (separate file)
 - Playback Playback from microphone terminal and speaker output terminal (GO/NO-GO)

Acquisition Memory Backup

- Batteries Four AA alkaline dry cells (AA/R6) (JIS and IEC type name: LR6) or four nickel metal-hydrate rechargeable batteries
- Backed up data Acquisition memory, waveform data, voice data
- Backup duration (reference value)² Approximately 10 hours (with /M3 option)
2. Actual backup duration will vary according to the usage conditions.

Media Drives

- Internal media drives Floppy drive, Zip® drive, or PC card (choose one), and 20 GB hard drive (with /C8 option)

General Specifications

- Rated supply voltage 100 to 120 VAC/200 to 240 VAC (automatically switched)
- Rated supply frequency 50/60 Hz
- Power consumed Approximately 200 VA-MAX
- Maximum voltage 1500 VAC for one minute across power supply and ground
- Insulating resistance 10 MΩ or greater at 500 VDC across power supply and ground
- Exterior 355 × 250 × 180 mm (WHD), excluding knobs and protrusions
- Weight Approx. 6.6 kg (main unit with full options, including M3, C8, C10, and P4)
Approx. 9 kg (main unit and eight 701250 modules)
- Operating temperature range 5 to 40°C

For detailed specifications, go to the following URL: <http://www.yokogawa.com/tm/Bu/DL750/>

Plug-In Module Specifications

High-Speed 10 MS/s 12-Bit Isolation Module (701250)

Input channels	2
Input couplings	AC, DC, GND
Maximum sampling rate	10 MS/s
A/D conversion resolution	12 bits (150 LSB/div)
Input type	Isolated unbalanced
Frequency range (–3 dB) ¹	DC, up to 3 MHz
Input range	(10:1) 50 mV/div to 200 V/div (in steps of 1, 2, or 5), (1:1) 5 mV/div to 20 V/div (in steps of 1, 2, or 5)
Effective measurement range	20 div (display range: 10 div)
DC offset	±5 div
Maximum input voltage (1 kHz or less)	600 V (DC + ACpeak)
In combination with 700929 (10:1) ²	250 V (DC + ACpeak)
Direct input (1:1) ^{6, 10}	400 Vrms (CAT I), 300 Vrms (CAT II)
Maximum allowable in-phase voltage	400 Vrms (CAT I), 300 Vrms (CAT II)
In combination with 701919 (10:1) ³	400 Vrms (CAT I), 300 Vrms (CAT II)
Main unit only (1:1) ¹¹	42 V (DC + ACpeak) (CAT I and CAT II, 30 Vrms)
DC accuracy ¹	±(0.5% of 10 div)
Input impedance	1 MΩ ± 1%, approx. 35 pF
Connector type	Isolated type BNC connector
Input filter	OFF, 500 Hz, 5 kHz, 50 kHz, 500 kHz
Temperature coefficient	Zero point ±(0.05% of 10 div)/°C (typical value) Gain ±(0.02% of 10 div)/°C (typical value)

High-Speed 1 MS/s 16-Bit Isolation Module (701251)

Input channels	2
Input couplings	AC, DC, GND
Maximum sampling rate	1 MS/s
A/D conversion resolution	16 bits (2400 LSB/div)
Input type	Isolated unbalanced
Frequency range (–3 dB) ¹	DC, up to 300 kHz (20 V/div to 5 mV/div)
Input range	(10:1) 10 mV/div to 200 V/div (in steps of 1, 2, or 5) (1:1) 1 mV/div to 20 V/div (in steps of 1, 2, or 5)
Maximum input voltage (1 kHz or less)	600 V (DC + ACpeak)
In combination with 700929 (10:1) ²	140 V (DC + ACpeak)
Direct input (1:1) ^{6, 10}	400 Vrms (CAT I), 300 Vrms (CAT II)
Maximum allowable in-phase voltage	400 Vrms (CAT I), 300 Vrms (CAT II)
In combination with 701901+701954 (1:1) ⁹	400 Vrms (CAT I), 300 Vrms (CAT II)
Main unit only (1:1) ¹¹	42 V (DC + ACpeak) (CAT I and CAT II, 30 Vrms)
DC accuracy ¹	5 mV/div to 20 V/div ±(0.25% of 10 div) 2 mV/div ±(0.3% of 10 div) 1 mV/div ±(0.5% of 10 div)
Input impedance	1 MΩ ± 1%, approx. 35 pF
Connector type	Isolated type BNC connector
Input filter	OFF, 400 Hz, 4 kHz, 40 kHz
Temperature coefficient	Zero point 5 mV/div to 20 V/div: ±(0.02% of 10 div)/°C (typical value) 2 mV/div: ±(0.05% of 10 div)/°C (typical value) 1 mV/div: ±(0.10% of 10 div)/°C (typical value) Gain 1 mV/div to 20 V/div: ±(0.02% of 10 div)/°C (typical value)

High-Speed 10 MS/s 12-Bit Non-Isolation Module (701255)

Input channels	2
Input couplings	AC, DC, GND
Maximum sampling rate	10 MS/s
A/D conversion resolution	12 bits (150 LSB/div)
Input type	Non-isolated unbalanced
Frequency range (–3 dB) ¹	DC, up to 3 MHz
Input range	(10:1) 50 mV/div to 200 V/div (in steps of 1, 2, or 5) (1:1) 5 mV/div to 20 V/div (in steps of 1, 2, or 5)
Effective measurement range	20 div (display range 10 div)
DC offset	±5 div
Maximum input voltage (1 kHz or less)	600 V (DC + ACpeak)
In combination with 701940 (10:1)	250 V (DC + ACpeak)
Direct input (1:1)	±(0.5% of 10 div)
DC accuracy ¹	1 MΩ ± 1%, approx. 35 pF
Input impedance	Metal type BNC connector
Connector type	OFF, 500 Hz, 5 kHz, 50 kHz, 500 kHz
Input filter	Temperature coefficient
Temperature coefficient	Zero point ±(0.05% of 10 div)/°C (typical value) Gain ±(0.02% of 10 div)/°C (typical value)
Adaptive passive probe (10:1)	701940

High-Voltage 100 kS/s 16-Bit Isolation Module (with RMS) (701260)

Input channels	2
Input couplings	AC, DC, GND, AC-RMS, DC-RMS
Maximum sampling rate	100 kS/s
A/D conversion resolution	16 bits (2400 LSB/div)
Input type	Isolated unbalanced
Frequency range (–3 dB) ¹	Waveform measurement mode DC, up to 40 kHz RMS measurement mode DC, 40 Hz to 10 kHz
Input range	(10:1) 200 mV/div to 2000 V/div (in steps of 1, 2, or 5) (1:1) 20 mV/div to 200 V/div (in steps of 1, 2, or 5)
Effective measurement range	20 div (display range 10 div)
DC offset	±5 div
Maximum input voltage (1 kHz or less)	1000 V (DC + ACpeak)
In combination with 700929 (10:1) ²	850 V (DC + ACpeak)
In combination with 701901+701954 (1:1) ⁶	850 V (DC + ACpeak)
Maximum allowable in-phase voltage	In combination with 700929 (10:1) H side: 1000 Vrms (CAT II) ⁴ , L side: 400 Vrms (CAT II) ⁵

In combination with 701901+701954 (1:1)

H side: 700 Vrms (CAT II)⁷, L side: 400 Vrms (CAT II)⁸
Direct input (when using a cable which doesn't comply with the safety standard)
H/L sides: 30 Vrms (42 V DC + ACpeak)¹¹

DC accuracy (waveform measurement mode)¹

±(0.25% of 10 div)

DC accuracy (RMS measurement mode)¹

±(1.0% of 10 div)

AC accuracy (RMS measurement mode)¹

Sine wave input ±(1.5% of 10 div)

Crest factor of 2 or less ±(2.0% of 10 div)

Crest factor of 3 or less ±(3.0% of 10 div)

Input impedance 1 MΩ ± 1%, approx. 35 pF

Connector type Isolated type BNC connector

Input filter OFF, 100 Hz, 1 kHz, 10 kHz

Temperature coefficient (waveform measurement mode)

Zero point ±(0.02% of 10 div)/°C (typical value)

Gain ±(0.02% of 10 div)/°C (typical value)

Response time (RMS mode)

Rise (0 to 90% of 10 div) 100 ms (typical)

Fall (100 to 10% of 10 div) 250 ms (typical)

Crest factor (only at RMS measurement)

3 or less

* Please use 701901 (1:1 safety adaptor lead) or 700929 (10:1 safety probe), which complies with the safety standard, for high-voltage input.

* It is very dangerous to use cables that do not comply with the safety standard.

Temperature/High-Precision Voltage Module (701265)

Input channels	2	
Input couplings	TC (thermocouple), DC, GND	
Input type	Isolated unbalanced	
Applicable sensors (input coupling: TC)	K, E, J, T, L, U, N, R, S, B, W, iron-doped gold/chromel	
Data updating rate	500 Hz	
Frequency range (-3 dB) ¹	DC, up to 100 Hz	
Voltage accuracy ¹ (at voltage mode)	±(0.08% of 10 div + 2 μV)	
Temperature measurement accuracy ^{1, 12}		
Type	Measured range	Accuracy
K	-200°C to 1300°C	±(0.1% of reading + 1.5°C)
E	-200°C to 800°C	except -200 to 0°C:
J	-200°C to 1100°C	±(0.2% of reading + 1.5°C)
T	-200°C to 400°C	
L	-200°C to 900°C	
U	-200°C to 400°C	
N	0°C to 1300°C	
R, S	0°C to 1700°C	±(0.1% of reading + 3°C) except 0 to 200°C: ±8°C 200 to 800°C: ±5°C
B	0°C to 1800°C	±(0.1% of reading + 2°C), except 400 to 700°C: ±8°C Effective range: 400 to 1800°C
W	0°C to 2300°C	±(0.1% of reading + 3°C)
Iron-doped gold/chromel	0 to 300 K	0 to 50 K: ±4 K 50 to 300 K: ±2.5 K

Maximum input voltage (1 kHz or less)

42 V (DC + ACpeak) (CAT I and CAT II, 30 Vrms)

Input range (for 10 div display)

100 μV/div to 10 V/div (in steps of 1, 2, or 5)

Input connector Binding post

Input impedance Approx. 1 MΩ

Input filter OFF, 2 Hz, 8 Hz, 30 Hz

Temperature coefficient (for voltage)

Zero point ±((0.01% of 10 div)/°C + 0.05 μV)/°C (typical value)

Gain ±(0.02% of 10 div)/°C (typical value)

Strain Module (NDIS) (701270)

Input channels	2
Input types	DC bridge input (automatic balancing), balanced differential input, DC amplifier (floating)
Automatic balancing method	Electronic auto-balance
Automatic balancing range	±10,000 μSTR (1 gauge method)
Bridge voltages	Select from 2 V, 5 V, or 10 V
Gauge resistances	120 to 1000 Ω (bridge voltage of 2 V) 350 to 1000 Ω (bridge voltage of 2/5/10 V) 1.90 to 2.20 (variable in steps of 0.01)
Gauge rate	16 bits (4800 LSB/div: Upper= +FS, Lower=–FS)
A/D resolution	100 kS/s
Maximum sampling rate	Frequency range (–3 dB) ¹
Frequency range (–3 dB) ¹	DC, up to 20 kHz
DC accuracy ¹	±(0.5% of FS + 5 μSTR)
Measurement range/measurable range	
Measurement range (FS)	Measurable range (–FS to +FS)
500 μSTR	–500 μSTR to 500 μSTR
1000 μSTR	–1000 μSTR to 1000 μSTR
2000 μSTR	–2000 μSTR to 2000 μSTR
5000 μSTR	–5000 μSTR to 5000 μSTR
10,000 μSTR	–10,000 μSTR to 10,000 μSTR
20,000 μSTR	–20,000 μSTR to 20,000 μSTR
mV/V range support	mV/V range = 0.5 × (μSTR range/1000)
Maximum allowable input voltage (1 kHz or less)	10 V (DC + ACpeak)
Maximum allowable in-phase voltage	42 V (DC + ACpeak) (CAT I and CAT II, 30 Vrms)
Temperature coefficient	Zero point ±5 μSTR/°C (typical value) Gain ±(0.02% of FS)/°C (typical value)
Internal filter	OFF, 1 kHz, 100 Hz, 10 Hz
Input connector	NDIS standard
Accessory (a set of connector shell for solder connection)	2 NDIS connectors (A1002JC)
Recommended bridge head (NDIS type) (sold separately)	701955 (bridge resistance of 120 Ω) (w/ 5 m cable) 701956 (bridge resistance of 350 Ω) (w/ 5 m cable)

Plug-In Module Specifications

Strain Module (DSUB, Shunt-cal) (701271)

Input channels	2
Input types	DC bridge input (automatic balancing), balanced differential input, DC amplifier (floating)
Automatic balancing method	Electronic auto-balance
Automatic balancing range	$\pm 10,000 \mu\text{STR}$ (1 gauge method)
Bridge voltages	Select from 2 V, 5 V, or 10 V
Gauge resistances	120 to 1000 Ω (bridge voltage of 2 V) 350 to 1000 Ω (bridge voltage of 2/5/10 V)
Gauge rate	1.90 to 2.20 (variable in steps of 0.01)
A/D resolution	16 bits (4800 LSB/div: Upper=+FS, Lower=-FS)
Maximum sampling rate	100 kS/s
Frequency range (-3 dB) ¹	DC, up to 20 kHz
DC accuracy ¹	$\pm(0.5\% \text{ of FS} + 5 \mu\text{STR})$
Measurement range/measurable range	

Measurement range (FS)	Measurable range (-FS to +FS)
500 μSTR	-500 μSTR to 500 μSTR
1000 μSTR	-1000 μSTR to 1000 μSTR
2000 μSTR	-2000 μSTR to 2000 μSTR
5000 μSTR	-5000 μSTR to 5000 μSTR
10,000 μSTR	-10,000 μSTR to 10,000 μSTR
20,000 μSTR	-20,000 μSTR to 20,000 μSTR

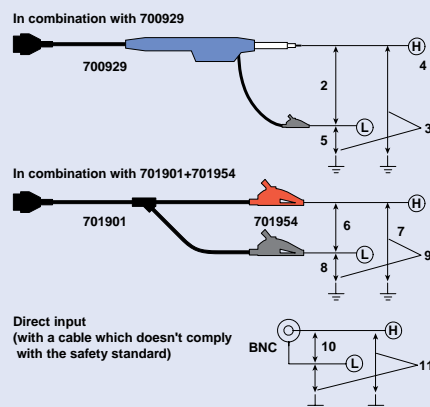
mV/V range support	mV/V range = $0.5 \times (\mu\text{STR range}/1000)$
Maximum allowable input voltage (1 kHz or less)	10 V (DC + ACpeak)
Maximum allowable in-phase voltage	42 V (DC + ACpeak) (CAT I and CAT II, 30 Vrms)
Temperature coefficient	
Zero point	$\pm 5 \mu\text{STR}/^\circ\text{C}$ (typical value)
Gain	$\pm(0.02\% \text{ of FS})/^\circ\text{C}$ (typical value)
Internal filter	OFF, 1 kHz, 100 Hz, 10 Hz
Input connector	DSUB
Accessory (a set of connector shell for solder connection)	2 DSUB connectors
Recommended bridge head (DSUB, Shunt-cal) (sold separately)	701957 (bridge resistance of 120 Ω) (w/ 5 m cable) 701958 (bridge resistance of 350 Ω) (w/ 5 m cable)

High-Speed Logic Probe (700986)

Number of inputs	8
Input types	Non-isolated (common ground for all bits; logic module and bits share common ground)
Maximum input voltage (1 kHz or less) (between probe tip and case ground)	42 V (DC + ACpeak) (CAT I and II, 30 Vrms)
Response time	1 μs or less
Input impedance	Approximately 100 k Ω
Threshold level	Approximately 1.4 V


Isolated Logic Probe (700987)

Number of inputs	8
Input types	Isolated (all individual bits are isolated)
Input connector	Safety connector (banana plug) $\times 8$
Input switching capability	AC/DC input switching for each bit
Applicable input ranges	DC input H/L detection for 10 V DC to 250 V DC AC input H/L detection (50/60 Hz) for 80 V AC to 250 V AC
Threshold levels	DC input 6 V DC $\pm 50\%$ AC input 50 V AC $\pm 50\%$
Response times	DC input 1 ms or less AC input 20 ms or less
Maximum input voltage (1 kHz or less) (between H and L of each bit)	250 Vrms (CAT I and II)
Maximum allowable in-phase voltage	250 Vrms (CAT I and II)
Maximum allowable voltage between bits	250 Vrms (CAT I and II)
Input impedance	Approximately 100 k Ω
1. Under reference operating conditions (ambient temperature of $23^\circ\text{C} \pm 5^\circ\text{C}$, ambient humidity (RH) of $55\% \pm 10\%$; after calibration following 30-minute warmup period)	
12. Does not include reference contact compensation accuracy.	




Warning
Do not exceed the maximum input voltage, withstand voltage, or surge current. In order to prevent electric shock, be sure to ground the main unit. In order to prevent electric shock, be sure to tighten the module's screws. Electrical protective functions and mechanical protective functions will not be effective.

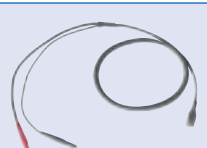
Accessories




Isolated probe (700929)




Passive probe for DL750 (701940)




Safety adaptor lead (701901)




Alligator clip (701954)
Dolphin type, red/black




Differential probe (700924)
ratio: 1/100, 1/1000 (variable)
Max. differential allowable voltage: $\pm 1400 \text{ V}$




High-speed logic probe (700986)




Isolated logic probe (700987)




Bridge head (701955 & 701956)
NDIS-120 Ω /350 Ω , Enhanced Shield



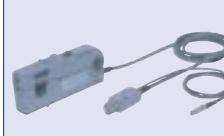
Conversion adaptor (366928)
For external trigger and external clock



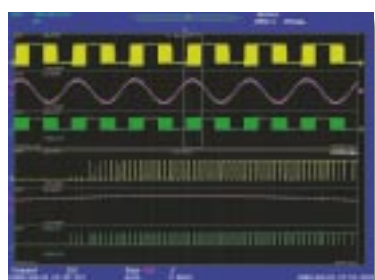
Earphone Mic (w/ PUSH switch) (701951)
For the voice memo function



50 MHz bandwidth current probe (700937)
Input range: 15 Apeak



10 MHz bandwidth current probe (701930)
Input range: 150 Arms



Measuring inverter I/O signals and control signals using the 10 MS/s high-speed 12-bit isolated module, current probe 700937 and isolated probe 700929. The model 700937 can be powered when the /P4 option is selected.

701280 Frequency Module

■ Frequency Measurement Section

Input channels	2
Data update rate	25 kHz (40 μs)
Measurement range (frequency)	0.01 Hz–200 kHz 0.1 Hz/div–50 kHz/div 50 ns (20 MHz)
Highest measurement resolution	50 ns (20 MHz)

■ Input Section

Compatible input signals	Encoder pulse input of up to ±42 V, Electromagnetic pickup input ⁶ AC power input up to 300 Vrms (700929 Isolation Probe required) Isolated, unbalanced AC, DC
Input type	AC, DC
Input coupling	±1 V–±50 V (6 ranges, 1-2-5 steps)
Input voltage	±10 V–±500 V (6 ranges, 1-2-5 steps)
Max input voltage (1 kHz or less)	420 V (DC+ACpeak)
When combined with 700929 (10:1) ²	42 V (DC+ACpeak)
Direct input (1:1) ¹⁰	
Max allowable common mode voltage	300 Vrms (CAT II)
When combined with 700929 (10:1) ³	42 V (DC+ACpeak) 30 Vrms (CAT II)
Direct input (1:1) ¹¹	1 MΩ±1%, approx. 35 pF
Input impedance:	Isolated BNC connector
Connector type	OFF/100 Hz/1 kHz/10 kHz/100 kHz
Input filters	Supports open collector, mechanical contact output, 4.7 KΩ(+5 V)
Input pullup function (ON/OFF)	Setting range: 1 ms–1000 ms
Input chatter suppression (ON/OFF)	Logic (5 V/3 V/12 V/24 V), electromagnetic pickup, zero-cross, pulse (5 V), AC100 V, AC200 V, user-defined
Comparator section	Presets ±FS range, resolution in units of 1%
Threshold range	±1%, ±2.5%, or ±5% of FS
Hysteresis	Operational status (illuminates during pulse input)
LED display (each CH)	OVER (red) OVER (red)
Compatible probes/cables	(10:1 probe) 700929/701940 (1:1 cable) 366926

■ Measurement Function Details

Measurable items	Frequency (Hz), rpm, rps, Period (sec), Duty (%), Power supply freq. (Hz), Pulse width (sec), Pulse integration, Velocity
Effective measurement range	20 div (10 div display range)
Resolution of measured data	16 bit (2400 LSB/div)
Measurement items and ranges	

Measured Item	Measurement Range	Range
Frequency (Hz)	0.01 Hz–200 kHz	0.1 Hz/div–50 kHz/div
rpm	0.01 rpm–100,000 rpm	0.1 rpm/div–10,000 rpm/div
rps	0.001 rps–2000 rps	0.001 rps/div–10,000 rpm/div
Period (sec)	5 μs–50 s	10 μs/div–5 s/div
Duty (%)	0%–100%	1%/div–20%/div
Power supply freq (Hz)	(50 Hz, 60 Hz, 400 Hz)±20 Hz	0.1 Hz/div–2 Hz/div
Pulse width (sec)	2 μs–50 s	10 μs/div–5 s/div
Pulse integration	up to 2×10 ⁹ count	100×10 ⁻²¹ /div–500×10 ⁻¹⁹ /div
Velocity	Same as freq. (can be converted to km/h and other units)	

Auxiliary Measurement Functions

■ Smoothing Filter (moving average)	Apply moving average to smooth stair step shaped waveforms. Moving average constant is specified from 0.2 ms to 1000 msec (moving average constant=specified time ÷40 μs) This reduces jitter and increases the resolution.
■ Pulse Average Function	Measure the specified number of pulses at once, and specify 1 to 4096 pulses for the average value output mode. This has the exact same effect as the smoothing filter, but averaging can be performed at the pulse interval. Even if encoder gaps are unequal, you can measure pulses together and average them.
■ Deceleration Prediction (Braking Applications)	A measuring function that automatically compensates for the lack of encoder pulse information during deceleration and hypothesizes a deceleration curve.
■ Stop Prediction (Braking Applications)	Predicts stop from a specified time after pulse stop (set up to 10 stages).
■ Offset Observation Function	Set an observational center, then zoom and display surrounding area (for fluctuation observation) Offset setting range = (1 div × 1000)

■ Measurement Accuracy¹⁻⁵

■ Frequency/Revolution/Velocity Measurements

Measurement accuracy	±(0.05% of 10 div + accuracy depending on the input frequency)
Accuracy depending on the input frequency	1 Hz–2 kHz: 0.05% of input waveform freq +1 mHz 2 kHz–10 kHz: 0.1% of input waveform freq 10 kHz–20 kHz 0.3% of input waveform freq 20 kHz–200 kHz 0.5% of input waveform freq

■ Period Measurement

Measurement accuracy	±(0.05% of 10 div + accuracy depending on the input period)
Accuracy depending on the input period	500 μs–50 s 0.05% of input waveform interval 100 μs–500 μs 0.1% of input waveform interval 50 μs–100 μs 0.3% of input waveform interval 5 μs–50 μs 0.5% of input waveform interval + 0.1 μs

■ Duty Measurement

Accuracy depending on the input frequency	0.1 Hz–1 kHz ±0.1% of 100%
	1 kHz–10 kHz ±0.2% of 100%
	10 kHz–50 kHz ±1.0% of 100%
	50 kHz–100 kHz ±2.0% of 100%
	100 kHz–200 kHz ±4.0% of 100%

■ Pulse Width Measurement

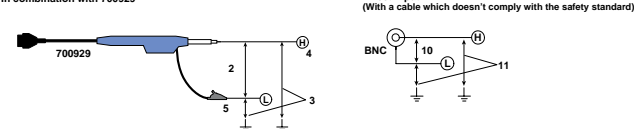
Measurement accuracy	±(0.05 % of 10 div + accuracy depending on the input pulse width)
Accuracy depending on the input pulse width	500 μs–100 s 0.05% of input waveform pulse width 100 μs–500 μs 0.1% of input waveform pulse width 50 μs–100 μs 0.3% of input waveform pulse width 2 μs–50 μs 0.5% of input waveform pulse width + 0.1 μs

■ Power Supply Frequency Measurement

Measurement accuracy	Center freq. at 50, 60 Hz, accuracy of ±0.03 Hz, resolution of 0.01 Hz Center freq. at 400 Hz, accuracy of ±0.3 Hz, resolution of 0.01 Hz
----------------------	--

- Under standard operating conditions: (temperature 23°C±5°C, humidity 55%±10% RH, warmup of at least 30 minutes, and after calibration.)
- Given a minimum input of 0.2 Vpp. Measurement conditions:
 - During freq./Period measurement: 1 Vpp/1μs square wave input (range=±10 V, bandwidth=FULL, hysteresis=±1%)
 - During Duty/pulse width measurement: 1 Vpp/5 ns square wave input (range=±10 V, bandwidth=FULL, hysteresis=±1%)
 - During power supply frequency measurement: 90 Vrms sine wave input (range=AC100 V, BW=100 kHz)
- Electromagnetic pickup: given output within 0.2 Vpp–42 Vpp. Minimum sensitivity=0.2 V (at 1:1), connected with 1:1 cable. For types that requires a power supply or terminal resistance, apply it to the sensor side

In combination with 700929



701275 Acceleration/Voltage Module (with AAF)

Input channels	2
Input format	Switchable between acceleration and voltage input AAF (anti-aliasing filter) supports both acceleration and voltage (AC coupling for acceleration) ACCL, (voltage) AC, DC, GND
Input coupling	100 kS/s
Max sampling rate	16-bit (2400 LSB/div)
A/D conversion resolution	Isolated, unbalanced (acceleration) 0.4 Hz–40 kHz (voltage) DC–40 kHz
Input type	0.4 Hz or less
Frequency band (-3 dB) ¹	X0.1–X1–X100 (1-2-5 steps)
AC coupling (-3 dB point) acceleration/voltage	50 mV/div–100 V/div (1-2-5 steps) ¹²
Input range	For voltage (10:1) 5 mV/div–10 V/div (1-2-5 steps) ¹² For acceleration (±5 V=X1 range) 20 div (10 div display range)
Effective measuring range	±5 div
DC offset	42 V (DC+ACpeak)
Max input voltage (1 kHz or less) ¹²	42 V (DC+ACpeak) 30 Vrms (CAT II)
Max allowable common mode voltage ¹¹	±(0.25% of 10 div)
Accuracy ¹ For voltage (DC accuracy)	±(0.5% of 10 div) (at 1 kHz)
For acceleration (AC accuracy)	1 MΩ±1%, approx. 35 pF
Input impedance	Metal BNC connector
Connector type	OFF/Auto (AAF)/4 kHz/400 Hz/40 Hz
Input filters	
Anti-aliasing filter (AAF)	
Cutoff frequency ¹³	f _c (cutoff frequency)=f _s (sampling frequency) × 40% -65dB at 2Xf _c (Typical)
Cutoff characteristics	±(0.02% of 10 div)/°C (Typical)
Temperature coefficient (for voltage) ¹⁴	±(0.02% of 10 div)/°C (Typical)
Acceleration sensor bias	constant current drive=4 mA±10%, voltage < 22 V
Example of compatible acceleration sensor: ¹⁵	Built-in amp type: Kistler Piezotronics™, PCB ICP™, Endevco: Isotron2™

Sensor usage Notes:

Something that supports acceleration sensor and bias is 4 mA/22 V
The sensor is highly sensitive to heat and shocks. If changes in temperature or shocks occur that are outside of the standard operating conditions, measurement may not be possible for several minutes.
(10:1 probe) 701940/700929 (1:1 cable) 366926

- Under standard operating conditions: (temperature 23°C±5°C, humidity 55%±10%RH, warmup of at least 30 minutes, and after Calibration.)
- The module's insulation is functional insulation. Even when using a probe, input above 42 V is not considered safe.
- when f_s=50 Hz–100 kHz, (when f_s<=50 Hz, f_c is fixed to 20 Hz)
- 14 excludes AUTO Filter
- Piezotronics is a registered trademark of Kistler Instrument Corp. ICP is a registered trademark of PCB Piezotronics Inc.. ISOTRON2 is a registered trademark of ENDEVCO Corp..

For detailed specifications and updated information: <http://www.yokogawa.com/tm/DL750/>

Universal (Voltage/Temperature) Modules (701261/701262)

Input channels	2																																																
Input signals	Voltage or temperature (thermocouple)																																																
AAF (anti-aliasing filter)	701261: none, 701262: included																																																
Input couplings	TC (thermocouple), DC, AC, GND																																																
Input types ¹	Isolated unbalanced																																																
Maximum sampling rate	Voltage 100 kS/s																																																
Data updating rate	Temperature 500 Hz																																																
A/D conversion resolution	Voltage: 16 bits (2400 LSB/div); temperature: 0.1°C																																																
Frequency range (-3 dB) ²	DC to 40 kHz																																																
	DC to 100 Hz																																																
Input range	Voltage (1:1) 5 mV/div to 20 V/div (10 div display, in steps of 1-2-5)																																																
	Temperature K, E, J, T, L, U, N, R, S, B, W, iron-doped gold/chromel																																																
Effective measurement range (voltage)	20 div (display range 10 div)																																																
DC offset (voltage)	±5 div																																																
DC accuracy ¹ (voltage)	±(0.25% of 10 div)																																																
Temp. measured range/accuracy ^{1,2}	<table><tr><th>Type</th><th>Measured Range</th><th>Accuracy</th></tr><tr><td>K</td><td>-200°C to 1300°C</td><td>±(0.1% of reading + 1.5°C)</td></tr><tr><td>E</td><td>-200°C to 800°C</td><td>However, for -200°C to 0°C,</td></tr><tr><td>J</td><td>-200°C to 1100°C</td><td>±0.2% of reading + 1.5°C)</td></tr><tr><td>T</td><td>-200°C to 400°C</td><td></td></tr><tr><td>L</td><td>-200°C to 900°C</td><td></td></tr><tr><td>U</td><td>-200°C to 400°C</td><td></td></tr><tr><td>N</td><td>0°C to 1300°C</td><td></td></tr><tr><td>R, S</td><td>0°C to 1700°C</td><td>±(0.1% of reading + 3°C)</td></tr><tr><td></td><td></td><td>However, 0°C for 200°C: ±8°C</td></tr><tr><td></td><td></td><td>200°C for 800°C: ±5°C</td></tr><tr><td>B</td><td>0°C to 1800°C</td><td>±(0.1% of reading + 2°C)</td></tr><tr><td></td><td></td><td>However, 400°C to 700°C: ±8°C</td></tr><tr><td></td><td></td><td>Effective range.: 400°C to 1800°C</td></tr><tr><td>W</td><td>0°C to 2300°C</td><td>±(0.1% of reading + 3°C)</td></tr><tr><td>Gold/chromel</td><td>0 K to 300 K 0 to 50 K: ±4 K</td><td>50 to 300 K: ±2.5 K</td></tr></table>	Type	Measured Range	Accuracy	K	-200°C to 1300°C	±(0.1% of reading + 1.5°C)	E	-200°C to 800°C	However, for -200°C to 0°C,	J	-200°C to 1100°C	±0.2% of reading + 1.5°C)	T	-200°C to 400°C		L	-200°C to 900°C		U	-200°C to 400°C		N	0°C to 1300°C		R, S	0°C to 1700°C	±(0.1% of reading + 3°C)			However, 0°C for 200°C: ±8°C			200°C for 800°C: ±5°C	B	0°C to 1800°C	±(0.1% of reading + 2°C)			However, 400°C to 700°C: ±8°C			Effective range.: 400°C to 1800°C	W	0°C to 2300°C	±(0.1% of reading + 3°C)	Gold/chromel	0 K to 300 K 0 to 50 K: ±4 K	50 to 300 K: ±2.5 K
Type	Measured Range	Accuracy																																															
K	-200°C to 1300°C	±(0.1% of reading + 1.5°C)																																															
E	-200°C to 800°C	However, for -200°C to 0°C,																																															
J	-200°C to 1100°C	±0.2% of reading + 1.5°C)																																															
T	-200°C to 400°C																																																
L	-200°C to 900°C																																																
U	-200°C to 400°C																																																
N	0°C to 1300°C																																																
R, S	0°C to 1700°C	±(0.1% of reading + 3°C)																																															
		However, 0°C for 200°C: ±8°C																																															
		200°C for 800°C: ±5°C																																															
B	0°C to 1800°C	±(0.1% of reading + 2°C)																																															
		However, 400°C to 700°C: ±8°C																																															
		Effective range.: 400°C to 1800°C																																															
W	0°C to 2300°C	±(0.1% of reading + 3°C)																																															
Gold/chromel	0 K to 300 K 0 to 50 K: ±4 K	50 to 300 K: ±2.5 K																																															
Max. input voltage (1 kHz or less)	42 V (DC+ACpeak): for satisfying safety standards ³																																																
Max. allowable common mode volt. (1 kHz or less)	150 V (DC+ACpeak): allowable maximum ⁴																																																
Input connector	42 V (DC+ACpeak) (CAT I & CAT II, 30 Vrms)																																																
Input impedance	Binding post																																																
Input filters	Approximately 1 MΩ																																																
	OFF, AUTO (AAF), 4 kHz, 400 Hz, 40 Hz (-12 dB/oct except AUTO)																																																
AAF (anti-aliasing filter) ⁵	Temperature OFF, 30 Hz, 8 Hz, 2 Hz																																																
	701262 only Cutoff frequency $f_c = f_s$ (sampling frequency) × 40%																																																
	f_c automatically linked with the sampling frequency.																																																
	Cutoff characteristics: -65 dB at 2 X f_c (typical value)																																																
Temp. coefficient (for voltage) ⁶	Zeropoint ±(0.01% of 10 div)/°C (typical value)																																																
	Gain ±(0.02% of 10 div)/°C (typical value)																																																
Compatible cable	366961 (banana-to-alligator 1:1)																																																

- Under reference operating conditions (ambient temp. of 23°C ±5°C, ambient humidity of 55% ±10%RH, after 30-minute warmup period and calibration).
- Does not include reference junction/temperature compensation accuracy.
- Since the input connector is of a binding post type, it is possible to touch the metal part of the connector.
- Therefore, for safety reasons, the maximum value is 42 V (DC+ACpeak).
- Maximum value at which the input circuit will not be damaged.
- When $f_s = 50$ Hz to 100 KHz. When $f_s \leq 50$ Hz, $f_c = 20$ Hz (fixed).
- Except when filters set to AUTO.

DL750/DL750P Model Numbers and Suffix Codes

Model	Suffix Code	Description
701210		"DL750 main unit (16 isolated channels + 16-bit logic)" 112 mm width A6 thermal printer built-in"
701230		"DL750P main unit (16 isolated channels + 16-bit logic)" 210 mm width A4 thermal printer built-in"
Power cable	-D	UL/ CSA standard
	-F	VDE standard
	-R	AS standard
	-Q	BS standard
	-H	GB standard(Complied with CCC)
Internal media drive ²	-J1	Floppy drive
	-J2	Zip [®] drive (available for the DL750 only) ³
	-J3	PC card drive
Default Help language	-HE	English online help
	-HJ	Japanese online help
	-HC	Chinese online help
	-HG	German online help
	-HF	French online help
	-HL	Italian online help
	-HK	Korean online help
Memory expansion	/M1	Memory expansion to 10 MW/CH ⁴
	/M2	Memory expansion to 25 MW/CH ⁴
	/M3	Memory expansion to 50 MW/CH ⁴
Other specifications	/C8	Internal 30 GB hard drive (FAT32)
	/C10	Ethernet interface
	/G2	User-defined math function
	/G3	DSP channel function
	/P4	Probe power (4-output)
	/DC	DC12 V power (DC10-18 V) (DL750 only) ³

- Plug-in modules are not included.
- Choose only one.
- Zip drive and DC12V power supply cannot be specified together with the DL750P.
- Cannot be specified together.

Standard Accessories

Product	Order Qty.
Power cable	1
User's manuals (one set)	1
Transparent front cover	1
Printer roll paper	3
	DL750 (A6 10 m/roll)
	DL750P (A4 20 m/roll)
Cover panel (for blank module slots)	1
Rubber feet (four per set)	8
Soft case (for storing accessories)	1

Zip is a registered trademark of Iomega Corporation in the United States and/or other countries. Other company names and product names appearing in this document are trademarks or registered trademarks of their respective companies.

Plug-in Module Model Numbers⁵

Model No.	Description	Firmware
701250	High-speed 10 MS/s 12-bit isolation module (2 CH)	1.07 or later
701251	High-speed 1 MS/s 16-bit isolation module (2 CH)	1.07 or later
701255	High-speed 10 MS/s 12-bit non-isolation module (2 CH)	2.02 or later
701260	High-voltage 100 kS/s 16-bit isolation module (2 CH, with RMS)	2.02 or later
701261	Universal Module (2 CH)	5.01 or later ⁷
701262	Universal Module (with AAF 2 CH)	5.01 or later ⁷
701265	Temperature/high-precision voltage module (2 CH)	1.07 or later
701270	Strain module (NDIS, 2 CH)	2.02 or later
701271	Strain module (DSUB, Shunt-CAL, 2 CH)	2.02 or later
701275	Acceleration/voltage module (with AAF, 2 CH)	3.01 or later
701280	Frequency module (2 CH)	3.01 or later

- Probes are not included with any modules.
- The latest firmware for the DL750 series is available on our Web site.
<http://www.yokogawa.com/tm/DL750/>
- Only supported by the initially-released DL750P (ver. 5.01 or later).
- DL750 support to be offered by 3rd quarter 2005 (ver. 6.01 or later)



DL750/DL750P Accessories

Product	Model No.	Description ¹
Isolated probe	700929	1000 Vrms-CATII for 701250, -51, and -60 (10:1)
"1:1 BNC safety adapter lead (in combination with the following)"	701901	1000 Vrms-CATII for 701250, -51, and -60
Safety mini clip (hook type)	701959	1000 Vrms-CATII, 1 set each of red and black
Large Alligator clip (dolphin type)	701954	1000 Vrms-CATII, 1 set each of red and black
Alligator adapter (rated volt.: 1000 V)	758929	1000 Vrms-CATII, 1 set each of red and black
Alligator adapter (rated volt.: 300 V)	758922	300 Vrms-CATII, 1 set each of red and black
Fork terminal adapter	758921	1000 Vrms-CATII, 1 set each of red and black
Passive probe for DL750/750P ²	701940	Non-isolated 600 Vpk (701255) 42 V or less (other) (10:1)
1:1 BNC-alligator cable	366926	Non-isolated 42 V or less, for 701250, -51, -55, 1 m
1:1 Banana-alligator cable	366961	Non-isolated 42 V or less, for 701261, -62, -65, 1.2 m
Current probe ³	701933	30 Arms, DC to 50 MHz, supports probe power
Current probe ³	701930	150 Arms, DC to 10 MHz, supports probe power
Current probe ³	701931	500 Arms, DC to 2 MHz, supports probe power
Probe power ⁴	701934	Large current output, external probe power supply (4 outputs)
Differential probe	700924	1400V pk, 1000 Vrms-CAT II
Bridge head (NDIS, 120 Ω/350 Ω)	701955/56	With 5 m cable
"Bridge head (DSUB, Shunt-cal 120 Ω/350 Ω)"	701957/58	With 5 m cable
GO/NO-GO cable	366973	For GO/NO-GO I/O and start input
Safety BNC-banana adapter	758924	500 Vrms-CATII, for 701250, -51, -55, -60
Printer roll paper	B9988AE	DL750, A6 size (120 mm wide × 10m), include 10 rolls
Printer roll paper	701966	DL750P, A4 size (210 mm wide × 20m), include 6 rolls
High-speed logic probe ⁵	700986	8-bit, non-isolated, response speed: 1 μs
Isolated logic probe ⁶	700987	8-bit, each channel isolated, response speed: 20 ms (for AC)
Isolated logic measurement leads	758917	"Isolated logic measurement leads (2 per set) Alligator clip required separately. "
Conversion adaptor	366928	BNC (jack)-RCA (plug) conversion
Safety BNC cable (1 meter)	701902	1000 Vrms-CATII (BNC-BNC)
Safety BNC cable (2 meters)	701903	1000 Vrms-CATII (BNC-BNC)
Soft carrying case	701963	For DL750, with 3 storage pockets
Soft carrying case	701967	For DL750P, with 3 storage pockets

- Actual allowable voltage is the lower of the voltages specified for the main unit and the cable
- 42 V is safe when using the 701940 with a Non isolated type BNC input.
- The number of current probes that can be powered from the main unit probe power is limited. See the following for details. <http://www.yokogawa.com/tm/probe/>
- There is no limit to the number of externally powered probes that can be used.
- One of each connection lead (B9879PX and B9879KX) is included.
- 758917, and either 758922 or 758929 is required for measurement.

Exterior Dimensions

