DLM 2000 Series
Mixed Signal Oscilloscope

Lineup includes 200 MHz, 350 MHz, 500 MHz bandwidth models
Lightweight and compact
Large 8.4-inch LCD display
Long memory: Up to 125M points (with /M2 option)
High speed sampling: Up to 2.5 GS/s (1.25 GS/s with 4 ch)

For more information, go to

tmi.yokogawa.com
Test & Measurement Instruments

Bulletin 7101-00E
**Flexible inputs and flexible performance**

**Easy-to-Use & Easy-to-See**

Easy to use. Portrait body + large screen makes display easy to see.

We elevated the large (8.4-inch) LCD screen up into the line of sight. Also, the portrait format saves space on the desk or test bench. A compact/personal oscilloscope designed for easy viewing and ease of use.

**Flexible MSO Input**

- Capture a mixed signals of analog and logic signals

Four channels is not sufficient to view the functioning of digital control circuits. The DLM2000 series converts 4 ch of analog input to 8-bit logic, and functions as a 3 ch analog + 8-bit logic MSO (mixed signal oscilloscope).

**The performance of up to 11 inputs by converting to logic**

Using logic input, up to 11 input signals can be observed simultaneously as 3 ch of analog and 8-bit logic. It is not only possible to use logic input for observation of data and control signals, or as a trigger source, but also for logic input analysis of I2C and SPI serial busses.

**Fast data processing with ScopeCORE**

With our proprietary ScopeCORE fast data processing IC, real time display is possible even when simultaneously measuring multichannel signals of 11 inputs.

**DLM2000 Series Lineup**

<table>
<thead>
<tr>
<th>Item</th>
<th>DLM2022</th>
<th>DLM2032</th>
<th>DLM2052</th>
<th>DLM2024</th>
<th>DLM2034</th>
<th>DLM2054</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog input channels</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Logic input</td>
<td>-</td>
<td>8bit</td>
<td>8bit</td>
<td>8bit</td>
<td>8bit</td>
<td>8bit</td>
</tr>
<tr>
<td>Maximum sampling rate</td>
<td>200 MHz</td>
<td>350 MHz</td>
<td>500 MHz</td>
<td>200 MHz</td>
<td>350 MHz</td>
<td>500 MHz</td>
</tr>
<tr>
<td>Frequency characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 MHz</td>
<td>350 MHz</td>
<td>500 MHz</td>
<td>200 MHz</td>
<td>350 MHz</td>
<td>500 MHz</td>
</tr>
<tr>
<td>Maximum record length</td>
<td>92.5 Mpoints</td>
<td>185 Mpoints</td>
<td>370 Mpoints</td>
<td>200 Mpoints</td>
<td>350 Mpoints</td>
<td>500 Mpoints</td>
</tr>
</tbody>
</table>

* Or 3 channels when using logic input.
**Sophisticated waveform acquisition engine**

With long memory and the History function, you'll never miss an historical waveform. A variety of trigger functions reliably capture the waveforms you want.

### Large capacity (125 Mpoint) memory enables long-duration measurements

For taking 2 ch measurements in Single mode, you can add the /M2 memory expansion option giving you up to 125 Mpoints of large memory capacity. 10,000 Hz signals can be recorded for up to 5,000 seconds. Even at a sampling rate of 1.25 GS/s, waveforms down to 0.1 seconds can be captured.

<table>
<thead>
<tr>
<th></th>
<th>Continuous Measurement</th>
<th>Single-Shot Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>1.25 Mpoints</td>
<td>6.25 Mpoints</td>
</tr>
<tr>
<td>/M1, /M1S memory option</td>
<td>6.25 Mpoints</td>
<td>25 Mpoints</td>
</tr>
<tr>
<td>/M2 memory option</td>
<td>12.5 Mpoints</td>
<td>62.5 Mpoints</td>
</tr>
</tbody>
</table>

Note) The /M1, /M2 memory expansion options are only available on 4ch models. The /M1S option is only available on 2ch models.

### You can replay waveforms later on, so you'll never miss an abnormal waveform - History Function -

With the DLM2000 series, up to 20,000 previously captured waveforms can be saved in the acquisition memory. With the History function, you can display just one or all of the previously captured waveforms (history waveforms) on screen. You can also perform cursor measurement, computation, and other operations on history waveforms. Using the History function, you can analyze rarely-occurring abnormal signals.

### Trigger Function capturing combined analog/digital complex waveforms

The DLM2000 series comes standard with multi-trigger capabilities combining analog and digital inputs, such as rising, falling, or any level.

#### Trigger function example

- **A to B(n) trigger:**
  - Example: Trigger on the 7th edge of signal on B. This is effective for measurements with shifted timing, such as non-standard video signal vertical/horizontal periods or motor reference position pulses and drive pulses.

- **Serial pattern trigger (user defined):**
  - Example: Trigger on an arbitrarily set pattern of up to 128 bits. This is effective for detecting ID/Data and other portions of proprietary communication formats.

- **Dual pulse trigger:**
  - Example: Trigger on a combination of CAN and LIN bus triggers, I2C + SPI bus triggers, and other combinations are possible.

#### History search function

You can search the up to 20,000 previously captured waveforms for history waveforms that meet certain conditions. You can perform cursor measurement and other analyses on the found waveforms.

#### Replay function

Waveforms can be displayed in order, one at a time, by using the rotary knob. With the Replay function, history waveforms can be automatically played back, paused, fast-forwarded, and rewound.
The DLM2000 series has two types of filters, one processed at the input circuit and one based on MATH functions. These filters are effective for rejecting unwanted signals, allowing observation of only the desired bandwidths.

### Real time filters

Each channel has 14 low pass filters available from 8 kHz to 200 MHz. Waveforms of limited bandwidths are stored in internal memory. **Cutoff frequencies**: 200 MHz, 100 MHz, 20 MHz, 10 MHz, 5 MHz, 2 MHz, 1 MHz, 500 kHz, 250 kHz, 125 kHz, 62.5 kHz, 32 kHz, 16 kHz, and 8 kHz

### Computed digital filters

The input waveform can be filtered using an IIR filter, which is a MATH function. Filtered waveforms can be displayed at the same time as the input waveform for comparison. You can select low pass or high pass filters. **Cutoff frequency setting range**: 0.01 Hz to 500 MHz

### Zooms into two different points

**Waveform zoom and search functions**

Because the DLM2000 series lets you set zoom factors independently, you can display two zoomed waveforms with different time axis scales at the same time. Also, using the Auto Scroll function, you can automatically scroll waveforms captured in long memory and change the zoomed location. With Auto Scroll you can choose forward, backward, fast-forward, scroll speed, and other control options.

### Large capacity memory gives you a variety of waveform search functions.

**Searching for data in a single screen: the Zoom Search function**

This function searches captured waveforms in the long memory and displays waveforms that meet the search criteria in the zoom area. The locations of the found waveforms are marked on screen (shows the current location).

- **Waveform search criteria**
  - Edge, edge (with conditions), state pattern, pulse width, state width, serial bus (only on models with the serial bus analysis option)

- **Search results marked**

- **Zooms into two different points**

- **Zoom two locations simultaneously**

- **Search results marked**

- **Searching for history waveforms: the History Search function**

  Criteria can be specified for extracting desired waveforms from up to 20,000 previously captured waveforms.

- **Search results marked**

- **Search for waveforms that pass through/do not pass through a rectangular zone placed on screen**

- **Search results marked**
**Useful Functions**  Fastest and most capable analysis

**Displays trends of peak-to-peak or pulse width per cycle**
— Measure function and statistics —

Twenty-eight waveform parameters are included such as: maximum, minimum, peak-to-peak, pulse width, period, frequency, rise/fall time, and duty ratio. Automated measurement can be performed using up to 20 of these waveform parameters. Also, waveform parameters can be measured repeatedly, and the statistical values displayed (mean, maximum, minimum, standard deviation, etc.).

**Measures voltage/time differences automatically**
— Cursor Measurement —

 Cursors can be placed on the displayed waveform from signal data, and various measurement values at the intersection of the cursor and waveform can be displayed. There are six types of cursor: ∆T, ∆V, ∆T& ∆V, Marker, Degree Cursor.

**Keeps waveforms with one push**
— Snapshot —

By pressing the SNAP SHOT key to the lower right of the screen, you can freeze a white trace of the currently displayed waveform on the screen. You can press the key repeatedly and conveniently leave traces for comparing multiple waveforms. Also, snapshot data recorded on screen can be saved or loaded as files, and can be recalled for use as reference waveforms when making comparisons.

**Has a GO/NO-GO function**
— Action on trigger —

GO/NO-GO can be determined using trigger conditions, zone waveforms, measurement parameters, and other criteria. For NO-GO, actions can be carried out at the same time such as sounding a buzzer, saving the current waveform, or sending notification to a designated e-mail address. Waveforms in which an abnormality occurred can be saved for confirmation and analysis of the phenomena at a later time.

**Can check functions with graphical online help**
— Graphical online help —

You can view detailed graphical explanations of the oscilloscope’s functions by pressing the “?” key in the lower left of the screen. This lets you get help on functions and operations on screen without having to consult the user’s manual.

**Analyzes frequency spectrums**
— FFT analysis —

Up to 2 FFT analyses can be performed simultaneously. FFT can be performed on computed waveforms in addition to the actual waveforms on CH1 to CH4. Analysis can be performed of the frequency components of waveforms filtered for limited bandwidth, of frequency for changes in period of rotary objects, and other phenomena.

**Displays stored files in thumbnail format**
— Thumbnails of saved files —

Thumbnails of waveform data, waveform image data, and Wave-Zone files can be displayed. The image and file names are shown so that you can view screen image contents while copying or deleting files. In addition to normalized screens, you can even save wide images that have been zoomed along the time axis.

**Trend and histogram displays**

Waveform parameters such as period, pulse width, and amplitude can be measured repeatedly and displayed in graphs. In a single screen you can observe period-by-period fluctuations, compute amplitudes every screen using multiple waveforms, and display amplitudes as trends. You can also display histograms referencing the voltage or time axis using values from repeated automated measurement of waveform parameters.

** FFT analysis**

Up to 2 FFT analyses can be performed simultaneously. FFT can be performed on computed waveforms in addition to the actual waveforms on CH1 to CH4. Analysis can be performed of the frequency components of waveforms filtered for limited bandwidth, of frequency for changes in period of rotary objects, and other phenomena.

Simultaneous level and time difference measurement with the ∆T& ∆V cursor

**Displays stored files in thumbnail format**
— Thumbnails of saved files —

Thumbnails of waveform data, waveform image data, and Wave-Zone files can be displayed. The image and file names are shown so that you can view screen image contents while copying or deleting files. In addition to normalized screens, you can even save wide images that have been zoomed along the time axis.

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— Graphical online help —

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Serial analysis function options (/F1, /F2, /F3, /F4)

- UART/CAN/LIN/I\(^2\)C/SPI-

Triggers for UART, CAN, LIN, I\(^2\)C, and SPI bus signals are supported along with decode display analysis (serial bus analysis option only on 4 ch models). Logic input can also be used for serial buses (excluding CAN and LIN).

Simultaneous analyses of different busses: Two busses can be analyzed simultaneously. Waveforms and analysis results from busses with different speeds can be displayed in individual Zoom screens with different scales.

A wealth of trigger functions: A wide variety of trigger conditions can be set, such as ID/Data trigger combinations and combinations of serial bus triggers with normal edge triggers.

Solutions of the DLM2000 Analysis Applications

Inputs supported for serial bus analysis

<table>
<thead>
<tr>
<th>I(^2)C</th>
<th>SPI</th>
<th>UART</th>
<th>LIN</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog input</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Logic input</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Power supply analysis option (/G4)

Dedicated power supply analysis options are available (4 ch models only) for switching loss, joule integral (I\(^2\)t), SOA (safe operating area) analysis, harmonic analysis of power supply current based on EN61000-3-2, and other operations.

Switching loss analysis

Voltage and current waveforms can be input to the 62.5 MW (max.) long memory (/M2 models) for computation of switching loss \(V(t) \times i(t)\).

A wide variety of switching loss analyses are supported, including turn-on/off loss calculation, loss including continuity loss, and loss over long cycles (50 Hz/60 Hz).

Harmonic analysis of power supply current based on EN61000-3-2

Harmonics determined by the IEC standard that are generated by the target device can be judged for each applicable class (classes A-D). Bar graphs and lists can be displayed for comparing harmonic current limit values with values calculated from actually measured signals.

Related Accessories

- **PBDH1000 differential probe (model 701924)**
  - 1.0 GHz bandwidth
  - 1 MΩ, approximately 1.1 pF
  - Maximum differential input voltage range: ±25 V

- **Differential probe (model 701920)**
  - DC to 500 MHz bandwidth
  - 100 kΩ, approximately 2.5 pF
  - Maximum differential input voltage range: ±12 V

- **700924 Differential probe**
  - DC to 100 MHz
  - 1000 Vrms/ ± 1400 V

- **701928/701929 Current probe**
  - DC to 100 MHz (701928)
  - DC to 50 MHz (701929)
  - 30 Arms

- **701935 Deskew correction signal source**
**Broad Connectivity and Easier Control**

**Ethernet (optional)**
Supports 1000BASE-T, 100BASE-TX, 10BASE-T

**GO/NO-GO I/O terminal**
Using the GO/NO-GO function, you can input a timing signal for judging a waveform and output the result as a TTL level signal.

**RGB video signal output terminal**
You can output an image signal and check the waveform on an external monitor.

**USB-PC connection terminal**
Enables control from a PC.

**USB peripheral connection terminal**
Supports USB storage, USB keyboards, USB printers.

**Probe power terminal (optional)**
Power supply output terminal for current probes (701930 and 701931) and differential probes (701920, 701921, 701922, 700924, 700925, and 701926).

**GP-IB connection terminal (optional)**
Enables control from a PC.

**External trigger input**
Lets you input a trigger signal separately from the input signal.

**Trigger output**
Outputs a CMOS 3.3V level trigger signal.

**1000BASE-T/100BASE-TX/10BASE-T compliant adapters**
(hubs and routers)

**USB memory**

**USB printer**

**USB keyboard**

**For details on accessory software, visit [https://y-link.yokogawa.com/YL000.po](https://y-link.yokogawa.com/YL000.po)**
Also, you can download free software and trial versions of retail software from this site.

**Software**

**Xviewer (701992, sold separately)**
Xviewer is software for use on a PC. It can be used for display, analysis, and conversion to ASCII of binary waveform data using waveforms captured by the DLM2000 series. By adding the MATH option, you can enter user expressions for performing waveform computations. FFT of up to 2 Mwords can be performed.

**DL series library (freeware)**
This is an API that enables you to control a DL or send data from a DL using an external program. The API is offered in the form of a DLL that can be called from a program controlled by the user.
### Main Specification

#### Models

<table>
<thead>
<tr>
<th>Model name</th>
<th>Frequency/bandwidth</th>
<th>Input terminal</th>
<th>Max. sample rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLM2032 (710105)</td>
<td>200MHz</td>
<td>2 analog channels</td>
<td>1.25GS/s (interleave mode off)</td>
</tr>
<tr>
<td>DLM2032 (710115)</td>
<td>350MHz</td>
<td>3 analog channels</td>
<td>2.5GS/s (interleave mode on)</td>
</tr>
<tr>
<td>DLM2052 (710125)</td>
<td>500MHz</td>
<td>4 analog channels / 3 analog channels</td>
<td></td>
</tr>
<tr>
<td>DLM2024 (710110)</td>
<td>200MHz</td>
<td>4 analog channels / 3 analog channels</td>
<td></td>
</tr>
<tr>
<td>DLM2034 (710120)</td>
<td>350MHz</td>
<td>2 analog channels</td>
<td></td>
</tr>
<tr>
<td>DLM2054 (710130)</td>
<td>500MHz</td>
<td>5 analog channels</td>
<td></td>
</tr>
</tbody>
</table>

#### Basic Specifications

- **Analog Signal input**
  - Input channels: DLM2032: CH1, CH2, DLM2052: CH1 to CH4 (CH1 to CH4 when using logic input)
  - Input resistance: AC, DC, DC150kΩ, GND
  - Input impedance: 1 MΩ ±1%, approximately 20 pF

- **Voltage sensitivity**
  - DLM2032: 50 mV/50 mV/100 mV/200 mV/500 mV/10 V
  - DLM2052: 50 mV/50 mV/100 mV/200 mV/500 mV/10 V

- **Frequency characteristics**
  - When inputting a sinewave of amplitude ±3 dB/div
    - DLM2032: 2 mV/div to 100 mV/500 mV/10 V/div
    - DLM2052: 2 mV/div to 100 mV/500 mV/10 V/div

- **Input range**
  - Model 701989: 500 mVp-p
  - Model 701988: 2 mV/div to 500 mV/div

- **Dead time**
  - In N Single mode: Approx. 2.2 µs
  - In Interleave mode: Approx. 100 ns

- **Max. acquisition accuracy**
  - Approx. 20 pF

- **A/D resolution**
  - Max. 12 bit (in High Resolution mode)

- **Bandwidth limit**
  - FULL: 200 MHz, 1000 MHz, 20 MHz, 10 MHz, 5 MHz, 2 MHz, 1 MHz, 100 kHz, 200 kHz, 500 kHz, 125 kHz, 62.5 kHz, 32 kHz, 16 kHz, 8 kHz
  - (can be set for each channel)

- **Isolation between channels**
  - The larger of 0.4 mV rms or 0.05 div rms

#### Display

- **Screen resolution**
  - 1280 x 768

#### Functions

- **Waveform acquisition modes**
  - Normal, Envelope, Average
  - Max. 12 bit (the resolution of the A/D converter can be improved equivalently by placing a bandwidth limit on the input signal)

- **Sampling modes**
  - Real time, interpolation, repetitive sampling
  - Select OFF, Interactively (waveform frequency by brightness), or Color (waveform frequency by color)

- **Accumulation**
  - Real time sampling, Accumulation, and Trigger

- **Zoom function**
  - Two zoom windows can be set independently (Zoom1, Zoom2)

- **Search functions**
  - Auto Search

- **Cursor**
  - Types: JT, JX, SV, JX, JX, JX, SV, M, M, M

- **Snapshot**
  - Currently displayed waveform can be retained on screen

#### Computation & Analysis Functions

- **Parameter measurement**
  - MAX, MIN, F-P, HIGH, LOW, Rms, Mean, Sdev, IntegTY, IntegTV, OVER
  - OVER, Pulse Count, Edge Count, VT, Vx, t, f,

- **FFT**
  - Number of points: 1.25k, 12.5k, 125k, 250k

- **Histogram**
  - Displays a histogram of acquired waveforms

#### Trigger modes

- **Trigger type, trigger source**
  - A triggers: Edge, Auto Level, Normal, Single, N-Single
  - Edge CH1 to CH4, Logic, EXT, LINE
  - Edge CH4 to CH4
  - Edge Qualified CH4 to CH4, Logic, EXT
  - State CH1 to CH4, Logic
  - Pulse width CH1 to CH4, Logic, EXT
  - State width CH1 to CH4, Logic
  - TV CH1 to CH4
  - Serial Bus

- **Trigger level setting**
  - CH1 to CH4: 0.01 div (TV trigger: 0.1 div)

- **Trigger level accuracy**
  - CH1 to CH4: ±0.2 div ± 10% of trigger level

#### Trigger availability

- **Can be set for each channel**

#### Waveform measurement modes

- **FFT**
  - Displays FFT in various modes: Rectangular, Hanning, Flat-Top

- **Histogram**
  - Displays a histogram of acquired waveforms

- **Actions**
  - Buzzer, Print, Save, Mail, Go-Go out

- **Search functions**
  - Edge, State, Serial Bus, Pulse Width, State Width

- **Statistical computations of parameters**
  - Min, Max, Ave, Std, Sdev

- **Trend/History display**
  - Displays wave parameters

- **Computation (MATH)**
  - +, -, x, /, SIN, COS, TAN, ASIN, ACOS, ATAN, INTEGR, DIFF, ABS, SORT, LOG, EXP, LN, B,N
  - DELAY, P (power of 2), PH, DA, MEAN, H, H, H, H, H

- **User-defined math (95 Options)**
  - (Release soon)

- **Graphical and text display**
  - Up to 2 trend or histogram display of specified wave parameters

- **Actions**
  - Functions: Buzzer, Print, Save, Mail, Go-Go out

- **Search functions**
  - Edge, State, Serial Bus, Pulse Width, State Width

- **Statistical computations of parameters**
  - Min, Max, Ave, Std, Sdev

- **Trend/History display**
  - Displays wave parameters
I CAN Bus Signal Analysis Functions (/F4 Option)

SPI Bus Signal Analysis Functions (/F2 & /F3 Options)

Analyzable no. of frames 100,000 frames max.
CAN bus Trigger modes SOF, ID/DATA, ID OR, Error(enabled when Applicable bus CAN version 2.0A/B, Hi-Speed CAN (ISO11898), Analysis result save function Analysis list data can be saved to CSV-format files

Auxiliary analysis functions Data search and field jump functions

LIN Bus Signal Analysis Functions (/F4 Option)

Applicable bus LIN Rev. 1.3, 2.0
Bit rate 15.9 kbps, 9.6 kbps, 4.8 kbps, 2.4 kbps, 1.2 kbps User defined (an arbitrary bit rate from 1000 bps to 200 kbps with resolution of 100 bps)
LIN bus Trigger modes Break Sync, ID/DATA, ID OR, and ERROR trigger Auto setting of bit rate, threshold value, time axis scale, voltage axis scale, and display of analysis results
Analyzable no. of frames 100,000 frames max.
Analysis results displays Analysis no., time from trigger position (Time (ms)), ID, ID-Field, Data, CheckSum, information

Auxiliary analysis functions Data search and field jump functions
Analysis result save function Analysis list data can be saved to CSV-format files

GP-IB (/C1 & /C11 Options)


I²C Bus Signal Analysis Functions (/F2 & /F3 Options)

Applicable bus I²C Bus Bus transfer rate: 3.4 Mbps max. Address mode: 7 bits/10 bit
SM bus Complies with System Management Bus
I²C Trigger modes Every Start, Address & Data, Non-Ack, General Call, Start Byte, Bit Mode
Analyzable signals Analyzable and selectable to CH1 to CH4, logic input, or M1 to M2
Auto setup function Auto setting of bit rate, threshold value, time axis scale, voltage axis scale, and display of analysis results
Auxiliary analysis functions Data search and field jump functions

Analysis result save function Analysis list data can be saved to CSV-format files

SM Bus Signal Analysis Functions (/F1 & /F3 Options)

Trigger types 3 wire/4 wire
After assertion of CS, compares data after arbitrary byte count and triggers.
Byte order MSB/LSB
Auto setup function Auto setting of bit rate, threshold value, time axis scale, voltage axis scale, and display of analysis results

Auxiliary analysis functions Data search function

Analysis result save function Analysis list data can be saved to CSV-format files

UART Bus Signal Analysis Functions (/F1 & /F3 Options)

Bit rate 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, user defined (an arbitrary bit rate from 1 to 1 Mbps with resolution of 100 bps)
Data format Select a data format from the following 6 bit (Non Parity) / 7 bit Data + Parity / 8 bit + Parity
UART Trigger modes Every Data, Data, Error (Frameing, Parity)
Auto setup function Auto setting of bit rate, threshold value, time axis scale, voltage axis scale, and display of analysis results

Auxiliary analysis functions Data search function

Analysis result save function Analysis list data can be saved to CSV-format files

CAN Bus Signal Analysis Functions (/F4 Option)

Applicable bus CAN version 2.0/A/B, Hi-Speed CAN (ISO11898), Low-Speed CAN (ISO1519-2)
Bit rate 1 Mbps/500 kbps/250 kbps/125 kbps/63.3 kbps/33.3 kbps User defined (an arbitrary bit rate from 10.0 kbps to 1.000 Mbps with resolution of 100 bps)
CAN bus Trigger modes SOF, ID/DATA, ID OR, Error (enabled when loading physical values/symbol definitions)
Auto setup function Auto setting of bit rate, threshold value, time axis scale, voltage axis scale, and display of analysis results

Auxiliary analysis functions Data search function

Analysis result save function Analysis list data can be saved to CSV-format files

**Main Specifications**
- Rated supply voltage: 100 to 240 VAC
- Rated supply frequency: 50 Hz/60 Hz
- Maximum power consumption: 170 VA
- External dimensions: 226 (W) x 293 (H) x 193 (D) mm (when printer cover is closed, excluding protrusions)
- Weight: Approx. 4.2kg
- Operating temperature range: 5°C to 40°C

**Electromechanical specifications**
- Waveform computation of power supply analysis parameters possible
- The maximum record length that can be computed is as well as standard math functions
- The difference in propagation time of voltage and current probe signals can be automatically or manually corrected. Correction range is ±100 ns (0.1 ns resolution)
- Display of the Area of Voltage-CURRENT Operation: Allows for checking whether it is within the ASO (area of safe operation)
- Harmonic analysis: Harmonic current emission standard IEC 61000-3-2 edition 2.2(ENE750-3-2 (2000))
- Trend display: 

**General Specifications**
- Standard operating conditions: Ambient temperature: 23˚C ± 5˚C
- Ambient humidity: 55 ± 10% RH
- Error in supply voltage and frequency: ±1% of rating
- Error in supply voltage and frequency: ±1% of rating
- Error in supply voltage and frequency: ±1% of rating

**Note**
1. Measured under standard operating conditions after a 30 minutes warm-up followed by calibration. Standard operating conditions: Ambient temperature: 23˚C ± 5˚C; Humidity: 55 ± 10% RH
2. Error in supply voltage and frequency: 0.1% of rating
3. Value in the case of repetitive phenomenon. The frequency bandwidth of a single-shot phenomenon is the smaller of the two values: 0.3% or the frequency bandwidth of the repetitive phenomenon, whichever is larger
4. When the input section is shorted, the acquisition mode is set to normal, accumulation in DFT, and the probe attenuation is set to 1X

**Auxiliary Input**
- Rear panel I/O signal External trigger input(DLM20x2: front panel), external trigger output, GNO-GNO output, video output
- Probe interface terminal (front panel) 4 terminals (DLM20x4)
- Probe power terminal (rear panel) 2 terminals (/F2 option)
- 4 terminals (/F4 option)

**USB Peripheral Connection Terminal**
- Connector USB type A connector x 2 (front panel x 1, rear panel x 1)
- Electromechanical specifications USB 2.0 compliant
- Supported transfer standards Low Speed, Full Speed, High Speed
- Supported devices USB Printer Class Ver. 1.0 compliant EPSON ink jet printers USB Mass Storage Class Ver. 1.1 compliant mass storage devices*

**USB-PC Connection Terminal**
- Connector USB type B connector x 1
- Electromechanical specifications USB 2.0 compliant
- Supported transfer standards High Speed, Full Speed
- Supported class USBTCM-USB488 (USB Test and Measurement Class Ver. 1.0)

**Ethernet (IC10 & IC11 Options)**
- Connector RJ-45 connector x 1
- Transmission methods Ethernet (100BASE-TX/100BASE-TX/10BASE-T)
- Supported services Server: FTP, VNC-11
- Client: SMTP, SNP, LPR, DHCP, DNS

**External Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit: mm</th>
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<tbody>
<tr>
<td>Width</td>
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<td>Height</td>
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<td>Depth</td>
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Yokogawa’s Approach to Preserving the Global Environment

- Yokogawa’s electrical products are developed and produced in facilities that have received ISO14001 approval.
- In order to protect the global environment, Yokogawa’s electrical products are designed in accordance with Yokogawa’s Environmentally Friendly Product Design Guidelines and Product Design Assessment Criteria.

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