

ScopeCorder DL850

ScopeCorder Vehicle Edition DL850V

Firmware Update 1.35

The DL850/DL850V latest firmware enables your ScopeCorder to be an even more effective tool for your needs.

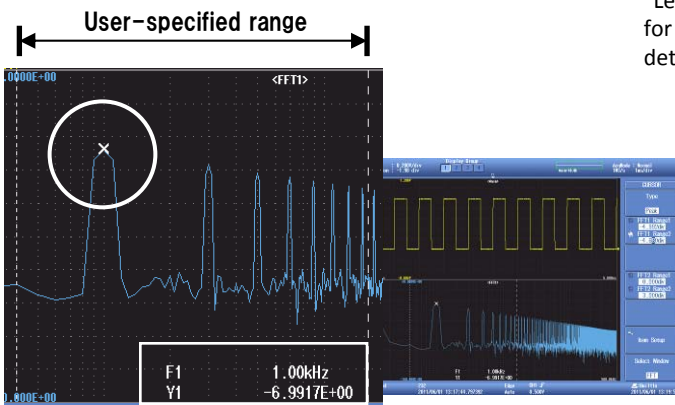


Math and Operability Improved
More Useful, More Convenient

Advanced FFT Functions (Supported by firmware version 1.35 or later)

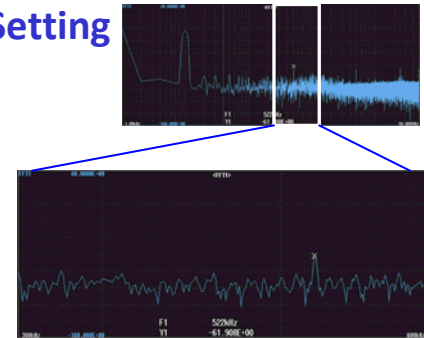
● Peak Search and Cursor

A FFT peak point can be automatically detected within a user-specified range. The cursor moves to the point automatically and the peak value can be read.



● Advanced Scale Setting

A FFT display horizontal scale can be freely changed. Either "Center/Span" or "Left/Right" can be specified for you to make your self-determined scale.



● CSV File Saving

A FFT computation result can be saved in a .csv file. The file can be loaded into the Xviewer, which is our PC-based viewer software (sold separately).



Higher Usability (Supported by firmware version 1.35 or later)

● Display Group

Only the waveforms of the selected group are displayed on the screen. The "Display Group" feature will be always available regardless of the number of channels installed.

#	CH	Color
45	CH15_17	Green
46	CH15_18	Blue
47	CH15_19	Magenta
48	CH15_20	Cyan
49	CH15_21	Red
50	CH15_22	Orange
51	CH15_23	Purple
52	CH15_24	Light Blue
53	CH15_25	Light Green
54	CH15_26	Light Purple
55	CH15_27	Light Orange

Select Display Gr.	
Group #1	
Group #2	
Group #3	
Group #4	

● Numeric Monitor

The level indicator values for each channel appear in the numeric monitor display. The display size can be changed (selected) so that they are easy to be read.



● Setup Data Store and Recall

Up to 16 sets of setup data can be saved into specific internal memory areas. It is convenient to save setup data that you use frequently. By specifying a corresponding number, they can be stored and recalled easily.



Real Time Math (/G3 option)

New !

The real time math functions are used to perform computations between channels and filter computations, using acquired data from the input modules as the source. With DSP accelerated hardware, there is no perceptible delay in processing.

The number of available operators (not including digital filters) is 30 (DL850V) and 29 (DL850). Up to 16 math waveforms can be displayed. In addition to these operators, the Real Time Digital Filters (Gauss, Sharp, IIR and Mean) are also available for each input channel individually. Consequently, the "Filtered" signals can be utilized in other real time computations.

<A list of Math Operators>

Operation	Explanation
Four fundamentals	+,-,*,/
Addition with coefficients	a(s1) + b(s2) + c
Subtraction with coefficients	a(s1) - b(s2) + c
Multiplication with coefficients	a(s1) * b(s2) + c
Division with coefficients	a(s1) / b(s2) + c
Integration	Integration on the positive/positive and negative components
Differentiation	using a fifth order Lagrange interpolation formula
Rotary Angle	Phase A, B, and Z signals are converted into the angle of rotation
DA	Converts the logic signals into an analog waveform
Polynomial	Quartic polynomial calculation
RMS	RMS value of the waveform
Power	Power calculation
Power Integ	Integrated power calculation
Log1	Common logarithm of the waveforms(Source1/Source2)
Log2	Common logarithm of the waveform(Source1)
Sqrt1	Square root of the sum (or difference) of the squares of the waveforms
Sqrt2	Square root of the waveform(Source1)
Cos	Cosine calculation(for converting angle to displacement)
Sin	Sine calculation(for converting angle to displacement)
Atan	Calculates the arc tangent of the waveforms
Knock Filter (available for only DL850V)	Knocking can be extracted.
Electrical Angle	Phase difference (Electrical Angle)
Poly-Add-Sub	Addition or subtraction or both on the 4 waveforms
Edge Count	Counts the number of slope edges
Frequent, Period	Frequency or Period of the waveform

Note: 100ns(10MS/s) resolution for time detection

<A list of Digital Filters>

Filter Type	Filter Band
Gauss	Low-Pass
Sharp	Low-Pass, High-Pass, Band-Pass
IIR	Low-Pass, High-Pass, Band-Pass

<Application Example 1>

Power calculation when a motor is starting-up

A trend of measured power can be calculated and displayed in real time during a motor startup test. Moreover, other signals such as voltage, temperature, and frequency can be measured simultaneously with the wide variety of ScopeCorder plug-in modules. All waveform trends can be monitored in a single instrument, in real-time.

Inverter drive voltage (CH1)
Current (CH2)
Power P (Real time Math)

$$P = \frac{1}{T} \int CH1 \times CH2 dt$$



<Application Example 2>

Power calculation for a Three-Phase Inverter

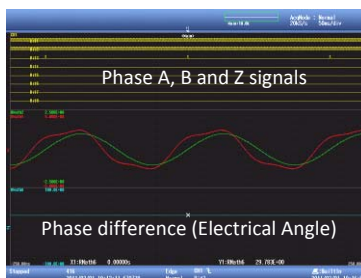
Three-phase power (sigma) can be calculated and displayed using the "Poly-Add-Sub" formula in real time.



<Application Example 3>

Electrical Angle

A phase difference between motor drive current and the rotary angle can be calculated in real time.



● Supports "Gray Code"

(Supported by firmware version 1.35 or later)

The angle of rotation can be computed from encoder signals through use of the "Rotary Angle" operator. Both incremental/quadrature and absolute encoders (including Gray Code) are supported.

Note

"Gray Code" is one of binary numeral systems where two successive values differ in only one bit. Gray codes are used in position encoders (linear encoders and rotary encoders), in preference to straightforward binary encoding.

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