

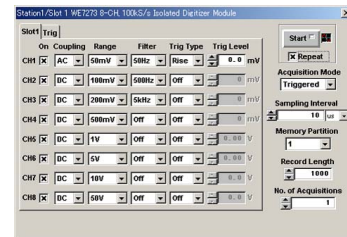
# WE7273

## 8-CH, 100 kS/s Isolated Digitizer Module

### Overview

The WE7273 8-channel 100-kS/s isolated digitizer module can convert 8 channels' worth of analog signals to digital signals at a maximum speed of 100 kHz. Equipped with eight A/D converters, each module can sample data through eight channels simultaneously at 100 kHz. The input channels are isolated from each other, as well as from the ground.

Each module contains in its flash memory the graphic data for screens used to set such data items as the range and sampling rate necessary for module operation. When connected to a personal computer, the module is actuated once it transfers the graphic data to the computer. In addition, two or more modules can be mounted side by side to enable synchronous operation. These modules support the trigger function that permits you to acquire data before and after the rise of a specific event.



WE7273

### Features

- 100-kS/s sampling and 16-bit analog-to-digital conversion on all eight channels simultaneously
- Isolation between inputs and between inputs and ground
- Built-in 8MWord acquisition memory
- Operates in sync with an adjacent WE7273 module
- Trigger function that allows data immediately before and after the rise of an event, to be acquired correctly

### Performance Specifications

- Number of input channels: 8
- Input format: Floating unbalanced input, isolation between channels and between the input and ground
- Connector type: Clamp terminal (terminal block is detachable)
- Input coupling: DC/AC
- Measurement range:  $\pm 50$  mV to  $\pm 50$  V (1-2-5 steps)
- A/D resolution: 16 bits (includes the sign)
- Input impedance: Approx. 1 M $\Omega$
- Maximum source resistance: 100  $\Omega$  or less
- Frequency characteristics (-1.5 dB attenuation point, during filter OFF):
  - During AC coupling: 10 Hz to 40 kHz (Typical value (see Note 1))
  - During DC coupling: DC to 40 kHz (Typical value (see Note 1))
- Input filter: OFF/5 kHz/500 Hz/50 Hz (-3 dB attenuation point) (Typical value (see Note 1))

### DC Accuracy (see Note 2)

Measurement Range	Accuracy	Temperature coefficient (at 5-18°C or 28-40°C)
$\pm 50$ mV	$\pm(0.15\% \text{ of rdg} + 0.5 \text{ mV})$	$\pm(30 \text{ ppm} + 20 \mu\text{V})/^{\circ}\text{C}$
$\pm 100$ mV	$\pm(0.15\% \text{ of rdg} + 0.5 \text{ mV})$	$\pm(30 \text{ ppm} + 25 \mu\text{V})/^{\circ}\text{C}$
$\pm 200$ mV	$\pm(0.15\% \text{ of rdg} + 0.5 \text{ mV})$	$\pm(30 \text{ ppm} + 30 \mu\text{V})/^{\circ}\text{C}$
$\pm 500$ mV	$\pm(0.05\% \text{ of rdg} + 0.5 \text{ mV})$	$\pm(25 \text{ ppm} + 30 \mu\text{V})/^{\circ}\text{C}$
$\pm 1$ V	$\pm(0.05\% \text{ of rdg} + 0.7 \text{ mV})$	$\pm(25 \text{ ppm} + 30 \mu\text{V})/^{\circ}\text{C}$
$\pm 2$ V	$\pm(0.05\% \text{ of rdg} + 1.4 \text{ mV})$	$\pm(25 \text{ ppm} + 50 \mu\text{V})/^{\circ}\text{C}$
$\pm 5$ V	$\pm(0.05\% \text{ of rdg} + 3.5 \text{ mV})$	$\pm(25 \text{ ppm} + 0.1 \text{ mV})/^{\circ}\text{C}$
$\pm 10$ V	$\pm(0.05\% \text{ of rdg} + 7 \text{ mV})$	$\pm(45 \text{ ppm} + 0.5 \text{ mV})/^{\circ}\text{C}$
$\pm 20$ V	$\pm(0.05\% \text{ of rdg} + 14 \text{ mV})$	$\pm(45 \text{ ppm} + 0.7 \text{ mV})/^{\circ}\text{C}$
$\pm 50$ V	$\pm(0.05\% \text{ of rdg} + 35 \text{ mV})$	$\pm(45 \text{ ppm} + 1 \text{ mV})/^{\circ}\text{C}$

Residual noise (With filter OFF and input terminals shorted)  
 :  $\pm 400 \mu\text{V}$  or  $\pm 0.04\%$  of (upper limit of range – lower limit of range), whichever is greater (Typical value (see Note 1))

Common mode rejection ratio (With filter OFF at 50/60 Hz)  
 :  $\pm 50$  mV to  $\pm 5$  V range: 100 dB or higher (Typical value (see Note 1))  
 :  $\pm 10$  V to  $\pm 50$  V range: 80 dB or higher (Typical value (see Note 1))

Acquisition method: Trigger, free run, gate (level), gate (edge)

Memory length of acquisition memory: 8 Mword  
 Memory partition (Partition possible only when trigger mode is selected): Select from 1/2/4/8/16/32/64/128/256 partitions

Maximum record length:  
 1 MWord/CH (for 5 CH to 8 CH measurement),  
 2 MWords/CH (for 3 CH/4 CH measurement),  
 4 MWords/CH (for 2 CH measurement)  
 8 MWords/CH (for 1 CH measurement)

Time base source: Module's internal clock, or the time base signal (CMNCLK) of the measuring station (WE bus)

Maximum sampling rate: 100 kS/s

Internal time base: 10 μs to 10 s (1 μs step)

Trigger base accuracy: Same as the reference clock of the measuring station (±100 ppm for 707001/707002)

Trigger source: Input signal (includes input signals of other isolated digitizer modules that are linked), or the bus trigger (BUSTRG1/BUSTRG2) signal of the measuring station

Bus trigger signal (BUSTRG1/BUSTRG2) output source: Able to output the trigger detected from the input signal

Trigger level  
Resolution

Measurement Range	Resolution
±50m V	0.1 mV
±100 mV	1 mV
±200 mV	1 mV
±500 mV	1 mV
±1 V	10 mV
±2 V	10 mV
±5 V	10 mV
±10 V	100 mV
±20 V	100 mV
±50 V	100 mV

Hysteresis width: 0.5% of (upper limit of range – lower limit of range) (Typical value (see Note 1))

Measurement accuracy: 1% of ± (upper limit of range – lower limit of range)

Trigger type: Edge trigger, state trigger, combination trigger (AND/OR of the input signals)

Pre-trigger Amount (Selectable Only When Trigger Mode Is Selected)  
: Set in the range from 0 to (the record length – 2)

Skew between Channels (within the same module): 50 ns (Typical value (see Note 1))

Skew between Modules (when modules of the same type are linked) :  $[20 \times (N-1) + 50]$  ns + skew between channels within the same module (between the 1st and the Nth module when WE7273s are linked, typical value (see Note 1))

## ■ General Specifications

Safety standard: Complies with CSA C22.2 No. 1010.1 and EN61010-1, conforms to JIS C1010-1

Warm-up time: At least 30 minutes

Maximum allowable input voltage: ±60 V(DC + ACpeak) (Overvoltage Category/measurement Category: CAT II)

Maximum Common Mode Voltage (between Ground and all Input Terminals): ±300 VACrms or ±300 VDC (Overvoltage Category/measurement Category: CAT II)

Maximum Voltage Across Channels:  
Between any two terminals of different channels in the same module:  
±100 VACrms or ±100 VDC (Overvoltage category/measurement category: CAT II)

Between any two terminals of channels on different modules : ±300 VACrms or ±300 VDC (Overvoltage category/measurement category: CAT II)

Withstand Voltage:  
Between ground and input terminal:  
1500 Vrms at 60 Hz for one minute

Between channels in the same module:  
800 Vrms at 60 Hz for one minute

Between channels of different modules:  
2300 Vrms at 60 Hz for one minute

Insulation Resistance (between the Input Terminal and Ground and between Each Channel) :  
Between input terminal and ground and between channels:  
500 VDC, 10 MΩ or more

Operating conditions: Same as those of the measuring station

Storage conditions:  
Temperature: –20°C to 60°C  
Humidity: 20 to 80% RH (no condensation)

Power consumption: 20 VA (Typical value (Note 1) at 100 V/50 Hz)

Weight: Approx. 0.9 kg

External dimensions: Approx. 33 (W) × 243 (H) × 232 (D) mm (projections excluded)

Number of used slots: 1

Standard accessories: Terminal block (1) (attached to the input connector at the time of shipment), User's Manual (1)

Note 1: Typical value represents a typical or average value. It is not strictly guaranteed.

Note 2: Value measured at an ambient temperature of 23±5°C, ambient humidity of 50±10% RH, after the warm-up time has passed

### AVAILABLE MODEL

Model	Description
707273/HE	8-CH, 100 kS/s Isolated Digitizer Module

### Accessory (sold separately)

Accessory	Model	Description	Order quantity
Terminal block	B9953FE	18-point Terminal	1

## ■ Dimensions

### WE7273

