Comparison & Hold Function by Waveform Display

These functions are used to judge the acceptability of measurement waveforms. Depending on type of applications, Waveform Comparison Function and Multi Hold Function can be jointly utilized for judgment.

- CE marking certification
- RoHS-compliant product
- 4000 times/sec high-speed processing
- Analog monitor output
  Voltage output is proportionate to the input signal making the recording on recorder convenient. Approx. 2V per 1 mV/V strain gauge input
- Variety of interfaces
  RS-232C / DeviceNet / CC-Link / Ethernet
- 3.5-inch color LCD module & touch panel
  Operation can be effortlessly performed by a direct touch on the touch panel.
- Excellent operability
  F381A is right-down demanding on straightforwardsness and is therefore made able to automatically mask non-required setting items and also to display setting in the required sequence when that particular set item has specific setting sequence.
- I/O Input: Plus common / Minus common shared
- I/O Output: Sink type / Source type selectable
  It can be connected to various types of external equipments such as PLCs.

Waveform comparison function

This function compares the actual measurement waveform against the setup High/Low limit waveforms and will give out an NG judgment when any of the point exceeded the preset High/Low limit waveforms. As it compares the overall measurement waveform, accurate judgment can be made even applications that are unable to narrow down its judgment points.

▲Setup Waveform Creation Screen
The High/Low limit waveforms can be easily created on the actual measurement waveform or on the setup waveform creation screen.

Saves Measurement Data in SD Card

Measurement data and set values can be logged (recorded) in the SD Card where it can be retained as a 100% recorded quality data or be used when setting up equipments or when performing cause analysis or improvement of problems.

The data can be easily converted to CSV format and is therefore easily edited in Microsoft Excel or its like.

Multi hold function

After the measuring range is segmented, judgment is carried out while the type of hold (sample, peak, bottom, P-P, Average, max, min, inflection point, End Displacement) is interchanged as set. The multi hold function can specify the Hi/Lo limit value and type of hold at each of the segmented range. Multipoint judgment is possible because the multi hold function is capable of using the peak hold to detect the inhibit timer immediately after the press-fit is started and then uses the inflection point hold to judge the load just before the ramming is commenced.

Displacement input as a standard equipment

It performs 2-dimensional waveform comparison & multi hold through its dual input from the displacement sensor and strain gauge sensor. On X-axis, voltage or pulse input can be connected while on Y-axis, strain gauge sensor can be connected.

This is highly effective for applications which are difficult to control only by time factor such as the control for pressing time of press machines and for the imposing time on works with individual differences.

When nothing is connected with X-axis, Waveform Comparison & Multi Hold by the time series can be done.

The voltage input is an option.

The comparison results of Waveform Comparison Function and Multi Hold Function can be verified on the display. [Result(List)] (An individual display) and [Result(Single)] (a list display) to selection is possible. (Latest 40 data)
Specifications

**SENSOR INPUT**
- **Sensor input for load (strain-gauge input fixed)**
  - Signal input range: 2.5V to 3.6V or 0 to 15V
  - Accuracy: Non-linearity: ±0.05% of full scale measurement

**INTERFACE**
- **2kHz RS-232C communication interface**
- **Diode Interface (option)**
- **CC-Link Interface (option)**
- **ETN Ethernet interface (option)**

**OPTION**
- **LDI Pulse input (line driver)**
- **VIN Voltage input**
- **BSC I/O Source Board**
- **SD Card Slot**
  - 1GB (50 cards are attached)
  - 1MB for storage capacity of up to 80 waveforms

**GENERAL SPECIFICATION**
- **Power supply voltage**: DC9V (15%)
- **Power consumption**: 8W typ.
- **Brush current (Typ)**
- **Pressure range**: −1000V to +1000V
- **Temperature range**: −40°C to +85°C
- **Storage temperature range**: −20°C to +85°C
- **Humidity**: 95% or less (non-condensing)

**DISPLAY**
- **Display**: TFT color LCD module
- **Indicated value**: Digital code 4.5 digits
- **Display frequency**: 4096 times/sec

**MEASUREMENT FUNCTIONS**
- **Measuring range**: 50mm
- **Resolution**: 2.5μm
- **Input signal**: 0 to 10V
- **Output signal**: 0 to 5V

**ATTACHMENTS**
- **FCN series I/O connector (with cover)**
- **DC Link connector (when DC Link option is selected)**
- **Operation Manual**

**OPTIONAL ACCESSORIES**
- **DTC2 : Special case**
- **SDC SD card slot (1GB attached)**
- **IS C Standard I/O source board**
- **VIN Voltage input**
- **LDI Line driver**
- **SD card slot**

**External dimension**
- **Unit**: mm

**Digital contact sensor ULE-50**
A digital contact sensor designed for FS2000 and F381A-LDI. You can perform OK/NOK judgment with a Force vs Displacement curve.

**Structure of product code**

**Standard unit**
- **F381A**

**I/O signal**
- **Sign**
  - Standard: Open collector
  - I/O Source Board
- **VIN Voltage input**
- **LDI Line driver**

**SD card slot**
- **Sign**
  - Card slot
  - SD card slot (1GB attached)

**Interface**
- **Sign**
  - RS-232C
  - DeviceNet (P/N output)
  - CC-Link (P/N output)

**Structure of product code**

**Unit**: mm