F377A

GRAPHIC DISPLAY/TOUCH PANEL TYPE DIGITAL INDICATOR FOR VOLTAGE & CURRENT OUTPUT SENSOR
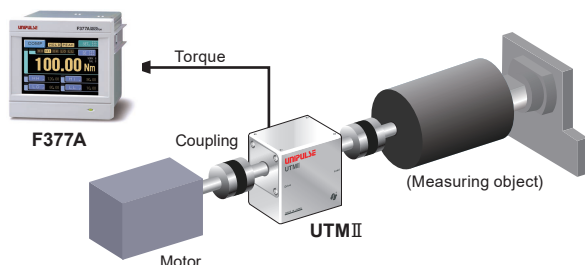
CC-Link
DIN 96 RoHS2

- Can be directly connected to voltage or current output sensor
  (Voltage: ±10 V; Current: ±20 mA)
- 2000 times/sec. high-speed processing
- Analog monitor output
  Voltage output is proportionate to the input signal making
  the recording on recorder convenient.
  At voltage input: Approx. 0.6 V per 1 V
  At current input: Approx. 0.3 V per 1 mA
- A variety of interfaces
  RS-232C/ CC-Link/ BCD output(Sink type)/ D/A output
- 3.5 inch color LCD module & touch panel
  Setting operation made easy via direct touch on the touch panel

- Multi calibration function
  Stores calibration values for 4 ch portions and can be selected
  via touch panel or external signal
- Alarm function
  Monitors if the measured value is abnormal
  - Hi/Lo limit for alarm in comparison setting   - Overflow
  - A/D input range   - Digital zero regulation value

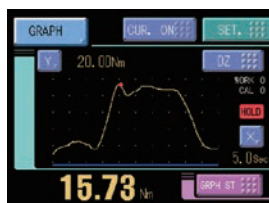### Storing of measured data and setting values

Using the special communication software, the setting values can be edited and stored. The same special communication software can also create the CSV output of the measured data.

Extended functions
Extended functions through simple screen operation

- **Double hold**
  2 types of Hold functions can be simultaneously performed.

- **Previous value comparison**
  The difference generated after deducting the measured value held earlier can be compared with the Hi/Lo limit.

- **Relative value comparison (only during Double hold)**
  The difference (relative difference) between hold value A and hold value B can be compared with the Hi/Lo limit.

- **Auto reset selection**
  2 selection from below.
  - Hold reset is automatically performed at the start of each Hold Section.
  - Hold value is maintained until the T/H signal is input.

- **Pre trigger display function**
  Graph is plotted by tracking back the time by the percentage set for Pre Trigger Display.

OFF   ON

Example of use combined with torque meter UTMⅡ

F377A
Torque
Coupling
(Measuring object)
UTMⅡ
Motor

Waveform display

Input signal from the sensor is displayed as real-time waveform display.

The Hold point is marked in red

Work selection (multi hold)

This function compares the required points in the waveform with the Hi/Lo limits. F377A stores up to 16 types of settings (settings such as types of holds or Hi/Lo limits) which can be selected via external signals.

[Types of holds]
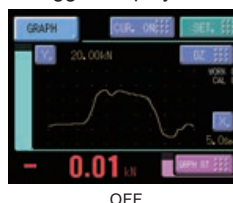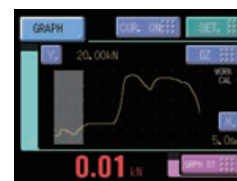Sample, Peak, Bottom, P-P, Average, Inflection Point, Relative Maximum, Relative Minimum, Relative Difference

[Setting of range]
Externally specified range (Peak, Bottom, P-P, Average)
Externally + time specified range (Peak, Bottom, P-P, Average)
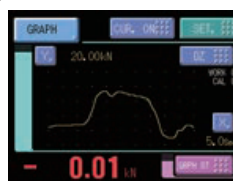Level + time specified range (Peak, Bottom, P-P, Average)
Level (Peak, Bottom)

- **Filter characteristic selection**
  You can select CR characteristic digital filter from LPF or HPF.
  (On you can select conventional digital filtering by the moving-average method)

moving-average method   CR characteristic

Analog	Voltage input	−10 to + 10 V Input impedance: 1 MΩ or more
	Current input	−20 to + 20 mA Input resistance: Approx. 250Ω
	Zero/Gain adjustment range	Automatic adjustment by digital processing
	Equiv. input calibration range	−10.00 to −2.00 V, +2.00 to +10.00 V or
		−20.00 to −4.00 mA, +4.00 to +20.00 mA
	Equiv. input calibration error	Within ±0.1% FS
	Accuracy	Non-linearity........Within 0.02% FS ±1 digit (at 10 V or 20 mA input)
		Zero drift............0.2 mV/°C RTI or within 0.4 μA/°C RTI
		Gain drift............Within 0.01%/°C
	Analog filter	Low pass filter (-6 dB/oct.); Selectable from 30, 100, 300, 1 kHz
	A/D converter	Speed: 2000 times/sec.; Resolution: 24 bit (binary) approx. 1/30000 at 10 V or 20 mA input
	Analog monitor output	Output level: Approx. 0.6 V per 1 V input or approx. 0.3 V per 1 mA input;
		Load resistance: 2 kΩ or more
Display	Display unit	TFT color LCD
	Display area	71 (W) × 53 (H) mm
	Dot structure	320×240 dot
	Measured value	5 digits: −99999 to +99999 Sign: Minus sign on most significant digit
HOLD	1) Sample; 2) Peak; 3) Bottom; 4) P-P; 5) Average; 6) Inflection Point;	
	7) Relative Maximum; 8) Relative Minimum; 9) Relative Difference; 10) Sample & Peak;	
	11) Sample & Bottom; 12) Sample & P-P; 13) Sample & Average;	
	14) Sample & Inflection Point; 15) Sample & Relative Maximum;	
	16) Sample & Relative Minimum; 17) Sample & Relative Difference; 18) Peak & Bottom;	
	19) Peak & P-P; 20) Bottom & P-P; 21) Average & Peak; 22) Average & Bottom;	
	23)Average & P-P; 24) Relative Maximum & Relative Minimum;	
	25) Relative Maximum & Relative Difference; 26) Relative Minimum & Relative Difference	
Comparison function	Can set 4 different settings from Hi limit, Lo limit, etc	
Calibration value selection	Stores up to 4 types of calibration values that can be interchanged	
External signal	External output signal (8)	Hi/Lo comparison output (HH, HI, OK, LO,LL)/RUN output/
		Hold end output/Graph plotting end output
		Vce = 30 V (max), Ic = 30 mA (max)
	External input signal (10)	Work selection input/hold control input/digital zero input (DZ)/
		graph plotting control input/calibration selection input
		Ic = 10 mA or less
Interface	SIF: 2-wire type serial interface	
	232: RS-232C communication interface	
	CCL: CC-Link interface (Option)	
	BCO: BCD parallel data output interface (Sink type) (Option)	
	DAV: D/A converter voltage output (Option)	
	DAI: D/A converter current output (Option)	
	(Only one option can be installed)	
Option	ISC: I/O Source board	
General specifications	Power supply voltage	DC 24 V (±15%)
	Power consumption	4 W typ.
	Inrush current typ.	55 A, 1 msec (cold start at room temperature)
	Operation condition	Operation temperature: −10 to +40°C
		Storage temperature: −20 to +60°C
		Humidity: 85% RH or lower (non-condensing)
	External dimension	96 (W) × 96 (H) × 138 (D) mm (not including projections)
	Weight	Approx. 1.0 kg

Attachments	FCN series I/O connector (with cover)...1
	Jumper wire..1
	Operation Manual..1
	Analog I/O connector terminal block (Already mounted on the main unit)..........1
	CC-Link connector (when CC-Link option is selected).......................................1
	BCD output connector (when BCD output option is selected)............................1
	Mini driver (when D/A converter option is selected)...1
Optional accessories	CA372-I/O: Cable with FCN connector at one-end 3 m
	CA81-232X: miniDIN-D-Sub9p cross cable 1.5 m
	CN50: FCN series I/O connector (with cover) (Same as the attachment)
	CN55: FCN series I/O connector (with diagonal cover)
	CN60: Round DIN 8p connector for RS-232C
	CN51: BCD output connector
	CN71: CC-Link connector
	CN72: Double row connector for CC-Link
	CN80: Analog I/O connector terminal block (Same as the attachment)
	DTC2: Case for F377A (with AC power supply)
	GMP96x96: Rubber packing

Please note that there are possibilities of individual differences in a color tone on display devices such as LEDs, fluorescent display tubes and LCDs due to manufacturing process or production lots.

Structure of product code

F377A ① ② ③

①Standard unit

②I/O output

Sign	Output type
Standard	Sink type(NPN output)
ISC	Source type(PNP output)

③Interface

Sign	Interface
Standard	SI/F, RS-232C

↓ One optional interface can be added in addition the standard interface.

CCL	CC-Link
BCO	BCD output(Sink type)
DAV	D/A converter(Voltage output)
DAI	D/A converter(Current output)

External dimension

(Front)

(Side)

(Rear)

96

96

18   120

91

91

Panel cutout size
Panel thickness
1.6 to 3.2 mm

$92 ^{+1}_{-0}$

$92 ^{+1}_{-0}$
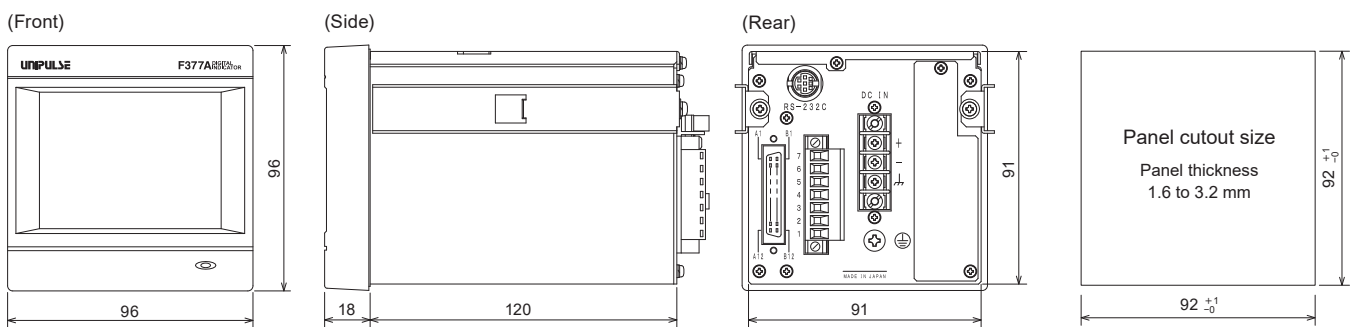
Unit: mm

DTC2: Case for F377A (with AC power supply)

168   190

120   143

2 m

At stand use

207

15°