



TD-700T

Digital Indicator for Force, Pressure, Torque Inputs

**ALTHEN**  
SENSORS & CONTROLS



## TD-700T

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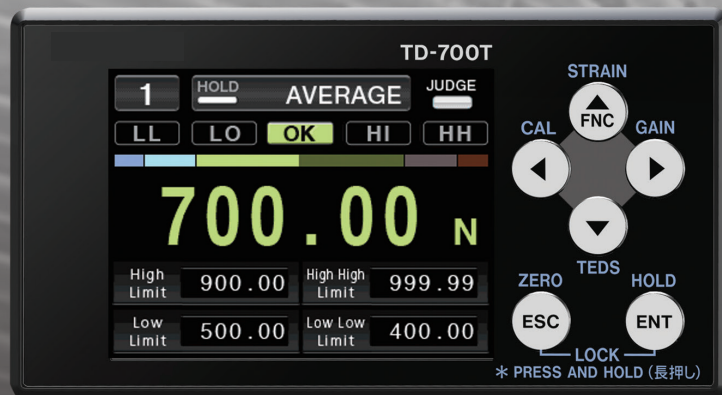
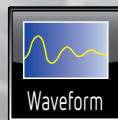
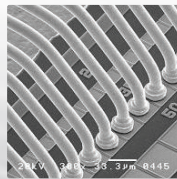
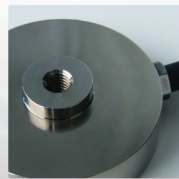
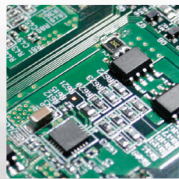
High-performance in compact design

Excellent cost performance

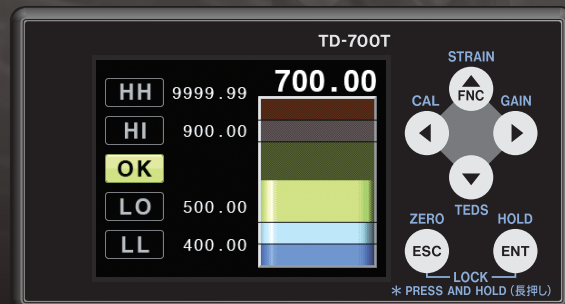
High speed processing at 4000 times / sec (20,000 times / sec at hold)

CC-Link RS-485

Optionally supports interfaces for easy connection with production lines and other systems;



Actual size





## TD-700T

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### CLEAR / ACCURATE / SMALL / EASY

*TD-700T was developed to measure and display load, pressure, and torque measurements accurately and graphically. The TD-700T brings features to a 1/8 DIN size indicator that are normally found in larger HMI displays.*



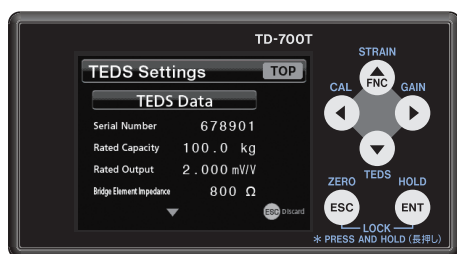
### Feature

#### High-performance color graphic LCD screen

Vivid display gives immediate process status. Each alarm intuitively and independently advises process condition.

#### Plug-and-Play (TEDS)

The TD-700T Supports IEEE 1451.4 TEDS. By utilizing load cells, auto-calibration is performed which eliminates complicated calibration and prevent human error.



TEDS information can be confirmed.

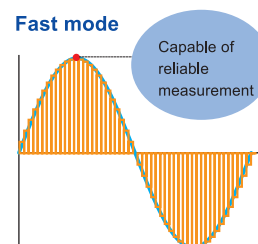
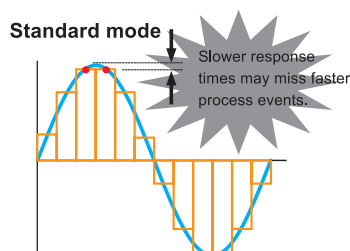
#### Remote Sense Function

Compensates for possible voltage changes due to temperature fluctuations and/or extended cable lengths without the loss of accuracy.



#### 4000 times / second (★ 20000 times / sec at hold) high-speed processing

Sampling and response times of 4000 per second. You can realize higher measurement accuracy and reliability with faster sampling of 20,000 cycles/s in Fast mode.



★ Hold fast mode

#### Zero Position Bar Graph Settings

Zero position for the bar graph can be set automatically depending upon the application.

#### Positive & negative value sample hold

TD-700T can sample, hold and average both positive and negative values. It can be used in measurements using dual pole devices such as torque sensors.

#### Comparison function

It is possible to set up to 4 values (HHI, HI, LO and LLO) to compare with the input signal. The definition of those values is programmable (i.e. 3 upper limits and 1 lower limit). This provides users with a wide variety of alarm applications, and helps avoid confusion and/or problems monitoring your process.

#### Static strain display

Allows the measure static strain. This function makes it easier to check load-cells for deterioration and plastic deformation.

#### User friendly warnings

TD-700T detects overloading, wrong connection, invalid parameters and improper adjustments and show warnings on the front LCD.

##### Example of Warning



#### Analog voltage /current output (isolated)

TD-700T can also be used as a signal conditioner.

#### 4 patterns of memory function

Settings for up to 4 holding modes can be saved. You can switch among those saved.



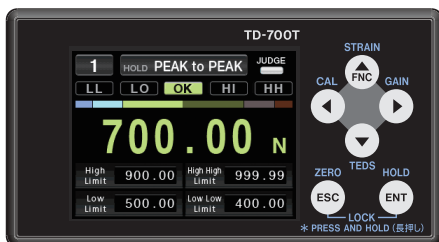
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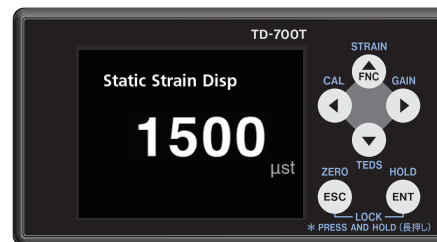
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## Examples of information on the display

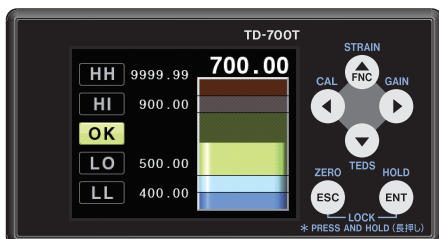
### Visual Alarm Modes



### Static strain



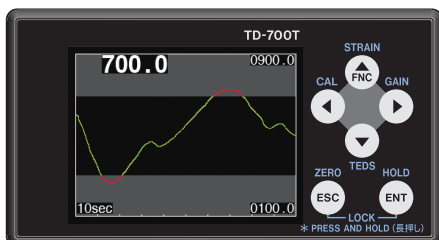
### Bar Graph



### Numbers only



### Actual Process Waveform



The fast 4Ks/S sampling rate shows the process levels vividly and in real time. The TD-700T shows what happens before, during and after any event. A variety of display modes is available to meet your purpose.

## Example of hold functions

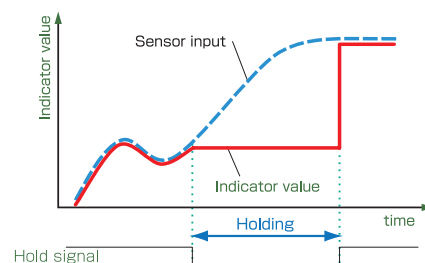
### Variety of hold function with block setting

A variety of holding functions can be activated utilizing the front panel controls or external control signals.

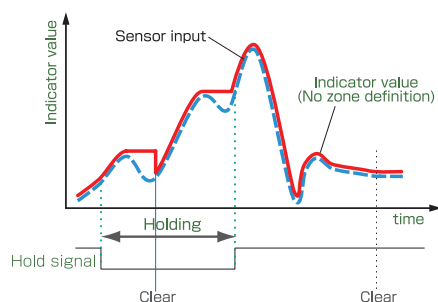
★ **Fast sampling mode**  
(20000 times/sec) supported

Hold functions	Zone definition
Sample hold	
Peak hold	<input type="radio"/>
Bottom hold	<input type="radio"/>
Peak-to-peak hold	<input type="radio"/>
Peak-and-bottom hold	<input type="radio"/>
Average hold	<input type="radio"/>

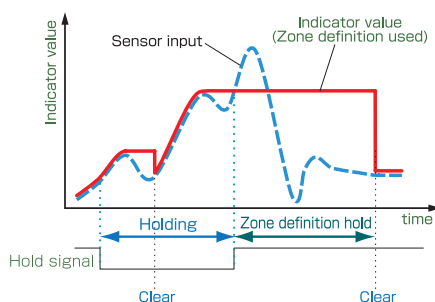
### Sample hold



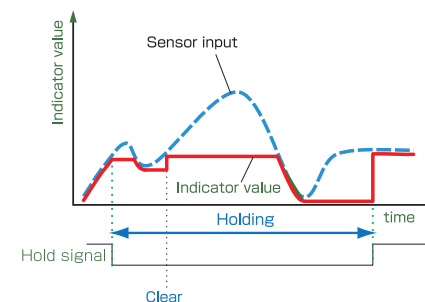
### Peak hold No zone definition



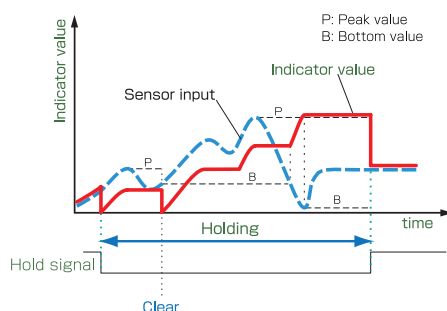
### Peak hold Zone definition used



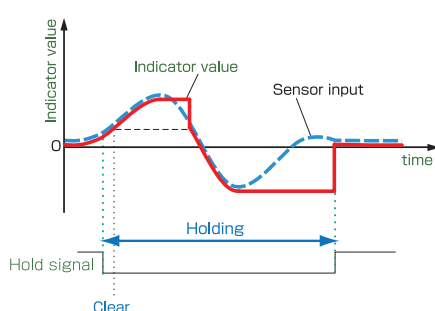
### Bottom hold



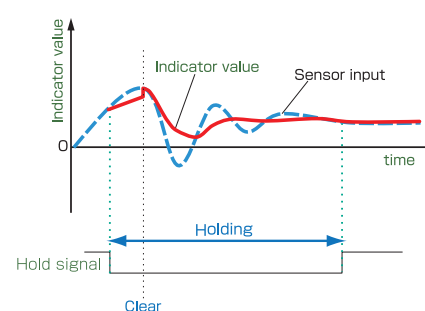
### Peak to peak hold



### Peak and bottom hold



### Average hold





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### Specifications

Bridge Voltage	10V DC, 2.5 V $\pm 10\%$ (30mA current maximum, remote sense can be used)
Signal input range	$\pm 3.2$ mV/V
Equivalent input/TEDS	Calibration range Calibration precision
	0.3 mV/V–3.2 mV/V Within 0.1% F.S. (when using a 1m standard TEAC $\Phi 8$ , 4-core shielded cable with 350 $\Omega$ impedance, 10V BV and 0.5mV/V or greater setting)
Precision	Nonlinearity Zero drift Gain drift
	Within 0.01% F.S. + 1 digit (when input is 1 mV/V or greater) Within 0.5 $\mu$ V/ $^{\circ}$ C (input conversion value) Within $\pm 0.005\%$ F.S./ $^{\circ}$ C
A/D conversion	24-bit, 4000 times per second, 20000 times per second (fast sampling mode)
Digital filter	Select 3 Hz (–6db/oct), 10, 30, 100, 300, 1000 Hz (–12 db/oct) or none
D/A output	4000 times per second, isolated output, $\pm 1$ – $\pm 10$ V voltage output (set in 1V steps) and about 1/59000 resolution (when set to $\pm 10$ V), or 4–20mA current output and about 1/43000 resolution
TEDS function	IEEE1451.4 class 2 mix mode interface
Display	320 x 240 color liquid crystal
Indicator value	Display range Decimal point Times displayed
	–99999 – 99999 Display position selectable Select 4, 6, 10 or 20 times/second
Displayed items	Calibration settings Function settings
	Zero calibration/span calibration (TEDS calibration, actual load calibration, equivalent input calibration) High limit, low limit, high high limit, low low limit, comparison mode, hysteresis, nearly zero, moving average, low pass filter, motion detect, zero tracking, static strain, digital zero, digital zero offset, zone definition, hold mode, key lock, minimum grid, display times, bridge voltage, digital zero limit, clear digital zero, comp. output pattern, comparison output control, select data output, D/A converter, remote sense
Hold functions	Sample hold, peak hold, bottom hold, peak to peak hold, peak and bottom hold, average hold, zone definition hold (peak, bottom, peak to peak, peak and bottom, average)
External input and output signals	Input Output CC-Link* RS-485**
	Hold, judge, clear, digital zero, setting memory selection 1, setting memory selection 2 (isolated from main unit circuits using a photocoupler) HH, HI, OK, LO, LL open collector output (isolated from main unit circuits using a photocoupler) DA, DB (isolated from main unit circuits using a photocoupler), DG, SLD A+, B– (isolated from main unit circuits using a photocoupler), TRM, FG
Power supply	DC power supply specifications
	Operating temperature range Storage temperature range Operating humidity range Applicable standards
	0 $^{\circ}$ C – 40 $^{\circ}$ C –20 $^{\circ}$ C – 60 $^{\circ}$ C 85% RH or less (without condensation) CE marking EN61326 (class A), UL61010-1
External dimensions (W $\times$ H $\times$ D)	Approximately 96 mm $\times$ 53 mm $\times$ 132 mm (without protrusions)
Weight	About 300 g

\*Only with CC-Link option.

\*\*Only with RS-485 option.

• Weight and dimensions are approximate.

### Included accessories

- Panel attachment fixtures (already attached to unit) 2 pcs.
- DIN rail attachment adapter 1 pc.
- Input and output connector plugs B2L 3.50/08/180F SN BK BX 1 pc.
- B2L 3.50/16/180F SN BK BX 1 pc.
- Micro screw driver (flat-blade) 1 pc.
- Operation manual(A5) 1 pc.



Panel attachment fixtures



DIN rail attachment fixtures

### Options\*

Several options are available

- TD-700T case
- CS-701 (For One Input)
- CS-703 (For Three Input)
- CC-Link Interface TD-700T (CCL)
- RS-485 Interface TD-700T(485)

\* For details, please contact TEAC sales or distributors



TD-700T case

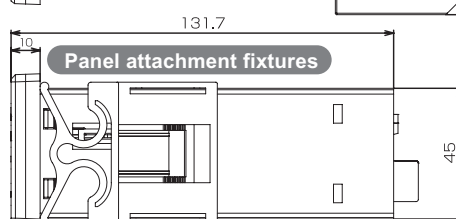
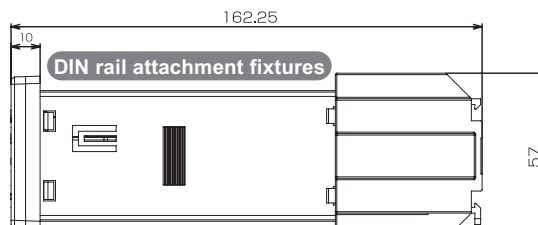
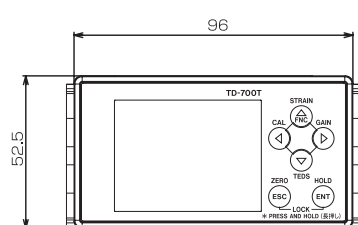


Rear panel of case (One input)

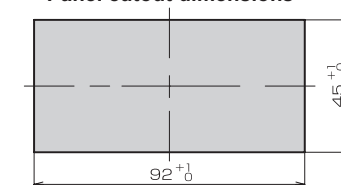
### Pin Assignment

PIN	ASSIGN	PIN	ASSIGN	PIN	ASSIGN
1	TEDS	9	V-OUT	17	SEL2
2	GND	10	I-OUT	18	COM
3	+EXC	11	COM	19	LL
4	-SIG	12	CLEAR	20	LO
5	-EXC	13	JUDGE	21	HH
6	+SIG	14	HOLD	22	HI
7	SHIELD	15	D/Z	23	OK
8	NC	16	SEL1	24	COM

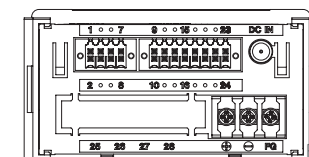
### External Drawing



### Panel cutout dimensions



Suggested board thickness is 0.8 to 5 mm.



The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.

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