UNIPULSE

F350

2ch Input Type Digital Indicator



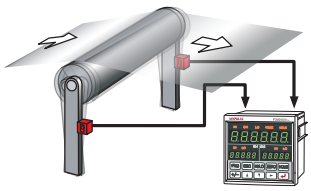


Real size

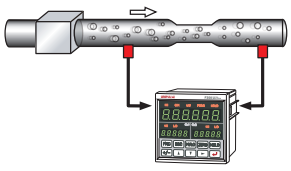
CE DIN 96 RoHS

SI/F RS-232C BCD OUT D/A

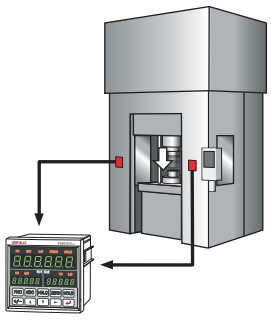
2ch allows ease in use!!
Load and pressure are controlled at high speed and high accuracy.



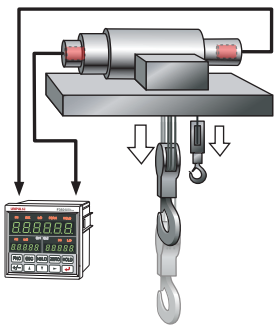
Tension measurement



Pressure control



Press load measurement



Crane load measurement

The F350 is a digital indicator that is capable of two-channel inputs of strain gauge type sensors. Equipped with calculation functions, such as ch1+ch2 and ch1-ch2, the F350 is best suited for total, difference, balance, and other load measurements.

2ch inputs
Calculation and judgment outputs can be made with respect to 2ch input values of strain gauge type sensors.
Calculated value is displayed on the main display, and ch1 and ch2 input values are displayed on the sub display.

Calculation functions
ch1+ch2 ..... The ch1 value and ch2 value are added.
ch1−ch2 ..... The ch2 value is subtracted from the ch1 value.
|ch1−ch2| ..... The difference value between the ch1 value and ch2 value.
High select..... The ch1 value or ch2 value, whichever is larger, is selected.
Low select..... The ch1 value or ch2 value, whichever is smaller, is selected.

9 points of judgment outputs are equipped.
Calculated value: HI, OK, LO; ch1 value: HI, LO, Alarm output; ch2 value: HI, LO, Alarm output

Sampling speed as high as 3000 times/sec on each channel
Including the high-speed CPU that allows processing from sensor inputs to outputs at 3000 times/sec, the F350 captures necessary points reliably. (The speed can be switched to 300 times/sec.)

Equivalent input calibration function
Calibration is performed by simply key-inputting the rated output value and rated capacity value of the sensor.
If an actual load cannot be applied, or when the load cell is replaced, calibration can be easily performed by key operation.

Digital zero & Digital offset
The indicted value can be zeroed by key operation. The F350 is also equipped with the function of subtracting a set value from the indicated value.
This function is convenient in the case where a no-load condition cannot be set up or for offsetting.

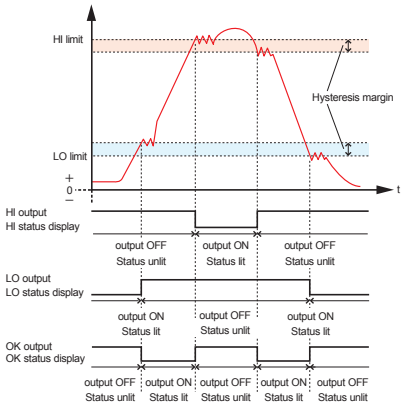
Analog voltage output
Voltage in proportion to the input signal, which is useful for recording with a recorder, etc., can be output on each channel.

F350 2ch Input Type Digital Indicator

HI and LO limit comparison functions with hysteresis

Timing at which HI and LO limit comparisons are made can be provided with a margin. This function is effective to prevent chattering, etc.

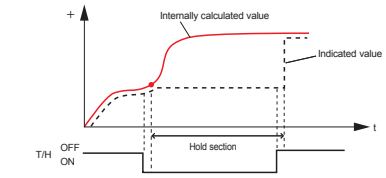
■HI and LO limit output time chart (calculated value)
Only HI and LO outputs are made on ch1 and ch2.



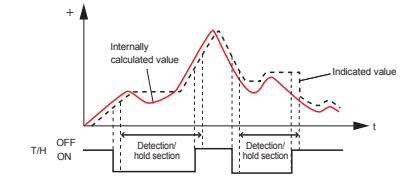
Hold functions

The F350 is equipped with hold functions of calculated values (sample, peak, bottom, and average). Section setting can also be made by external signal.

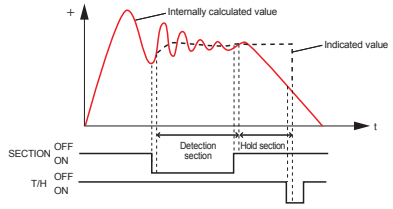
■Example 1) Sample hold



■Example 2) All section peak hold



■Example 3) Externally specified section average hold



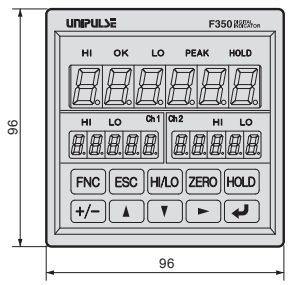
SPECIFICATIONS

Analog	Number of sensor inputs	2 inputs (strain gauge input)	
	Excitation voltage	DC10V, 2.5V ±5% (depending on settings.) Output current:60mA or less (2 channels total)	
	The following are common to each input.		
	Signal input range	−3.0 ～+3.0mV/V	
	Equiv. input cal. range	−3.0 ～−0.5mV/V, +0.5 ～+3.0mV/V	
	Zero･Gain adjustment range	Automatic adjustment via digital processing	
	Accuracy	Non-linearity..... Within 0.02%/FS±1digit (at a 3.0mV/V input)	
		Zero drift ..... Within 0.5μV/℃ RTI	
		Gain drift ..... Within 0.01%/℃	
	Analog filter	Low-pass filter (−6dB/oct.) Selectable 3, 30, 300, 1k Hz	
	A/D converter	Rate ..... Selectable from 3000 times/sec and 300 times/sec	
		Resolution ..... 24bit (binary) 1/10000 to 1.0 mV/V	
	Analog monitor output	output level:strain gauge input is approx. 2V per 1mV/V Load resistance:2kΩ or more	
Display	Display unit	Main display..... Character height 14.6mm Numerical display by 7-segment green LED (6-digit)	
		Sub display..... Character height 8mm Numerical display by 7-segment green LED (5-digit)	
	Indicated value	Main display..... 5-digit ±8.8.8.8.8 −99999 ～+99999 Signs:Minus sign on most significant digit	
		Sub display..... 5-digit ±8.8.8.8.8 −19999 ～+19999 Signs:Minus sign on most significant digit	
	Display frequency	Selectable from 3, 6, 13, and 25 times/sec.	
	Status display	HI / OK / LO / PEAK / HOLD / HI (ch1) / LO (ch1) / HI (ch2) / LO (ch2)	
Setting	Setting item	Work setting (comparison):Calculated value HI limit / Calculated value LO limit / ch1,2 HI limit / ch1,2 LO limit	
		Work setting (comparison/hold):Comparison function select / Near zero / Hysteresis / Calculation hold function select / Detection time / Average sample number	
		System setting (calculation/common operation) :MD / SI/F function select / Display frequency	
		System setting (ch operation):Digital filter / Analog filter / ZT / D/Z synchronous mode / A/D conversion speed select	
		Calibration setting (ch calibration):Calibration function select / Zero calibration / Equivalent input calibration / Actual load calibration / Digital offset / Digital zero limit / Alarm HI limit / Alarm LO limit	
		System setting (BCO option):Output data select / Output rate / BCD/binary select	
		System setting (232 option):Communication mode / Communication condition / Delimiter	
		System setting (DAV / DAI option) :Output data select / Zero scale value / Full scale value	
		Protect/initialize:Setting protect / Key protect / Initialize / Password	
Hold	Sample , Peak, Bottom, Average	Hold section setting (All section･External signal･External signal + Time)	
External signal	External output signal (11)	HI/LO limit comparison (HI (calculation)･OK (calculation)･LO (calculation)･HI (ch1)･LO (ch1)･HI (ch2)･LO (ch2)) / alarm (ch1) / alarm (ch2) / hold complete / RUN	
		Open collector output circuit (sink type) Vceo=30V (max) Ic=30mA (max)	
	External input signal (4)	hold section control / hold release / digital zero 1 / digital zero 2	
		Dry contact input circuit (minus common type) Ic=10mA or less	
Interface	SIF	2-wire serial interface	
		Connect to a UNIPULSE-manufactured printer, external display, etc.	
		Transmitting method:Asynchronous Baud rate:600bps	
		Output data:Allocations to the GROSS area and NET area are selected by the setting of "calculated value & ch1 value", "calculated value & ch2 value", or "ch1 value & ch2 value."	
	BCO	BCD parallel data output interface (Option)	Only one option can be installed
		Open collector output circuit (sink type) Data format:BCD or binary selectable	
		Output rate:10/30/50/100/300/500/1000 times/sec.	
		Rated voltage:30V Driving capacity:30mA or less	
		Output data:Selected by the setting of "calculated value", "ch1 value", or "ch2 value", or externally.	
	DAV	D/A converter voltage output (Option)	
		Output range:±10V Load resistance:2kΩ or more	
		Zero/span adjustment range:±10% F.S.	
		Output data:Selected by the setting of "calculated value", "ch1 value", or "ch2 value."	
	DAI	D/A converter current output (Option)	
		Output range:4 ～ 20mA Load resistance:350Ω or less	
		Zero/span adjustment range:±10% F.S.	
		Output data:Selected by the setting of "calculated value", "ch1 value", or "ch2 value."	
	232	RS-232C communication interface (Option)	
		Transmitting method:Asynchronous Baud rate:9600bps ～ 57600bps	
		Flow control:RTS/CTS controllable	
General Specification	Power supply voltage	AC100 ～ 240V +10%−15% (free power source) 50/60Hz	
	Power consumption	10W	
	Operating conditions	Temperature ..... Operation:−10 ～+40℃ Storage:−40 ～+80℃	
		Humidity..... 85%RH or less (non-condensing)	
	Dimension	96 (W) ×96 (H) ×138 (D) mm (Protrusions excluded)	
	Weight	Approx. 1.0kg	
Attachment	AC supply cord (Nominal rating 125V) 3m 1		Operation manual.....1
	AC supply cord converter plug for AC supply cord 1		BCD output connector (when BCD output option is selected) 1
	FCN series I/O connector (with cover) 1		Mini driver (D/A converter option is selected) 1
	Ferrite core 2		
Accessories	CA372-I/O:End treatment 24-leads cable with FCN connector at one end 3m		CN50:FCN series I/O connector (with cover)
	CAAC3P-B3:AC supply cord (Nominal rating 125V) 3m		CN51:BCD output connector
	CAAC3P-CEE7/7-B2:AC supply cord (voltage resistance 250V) 2m		CN55:FCN series I/O connector (with diagonal cover)
	CN3P-2P:AC supply cord converter plug for AC supply cord		CN81:Analog I/O connector terminal
	CN34:D-Sub9p connector for RS-232C		
CE marking certification	･EMC directive EN61326		
	･Safety standard EN61010-1		

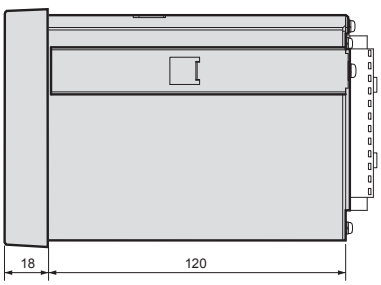
DIMENSIONS

Unit:mm

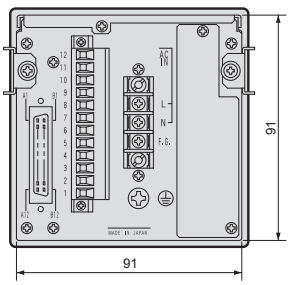
(Front View)

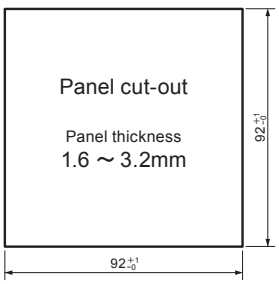


(Side View)



(Rear View)





※ Please note that specifications or designs shown in this catalog may be changed without prior notice due to our continuous product improvement activities.

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Rev.1.00 2009 FEB.