

FC1000

STANDARD TYPE WEIGHING INDICATOR

DIN 144 × 72 RoHS2



New Standard for Weighing Indicator!!

Significantly improved basic-performance. SD memory card is supported.

SD card slot

You can write and read setting parameters from SD cards, while recording weighing results & data when abnormalities occur.

- Calibration value & Error logs are automatically recorded
You can identify the indications of faulty load cells and replacement timing. Date & time of errors occurred can be displayed, as well as the record of how the errors are made (through key control, communication, I/O, etc).



- Data recording of weighing results
Monitor management of raw material, equipment operation rate and so on.
Long-term trend can be observed as well.



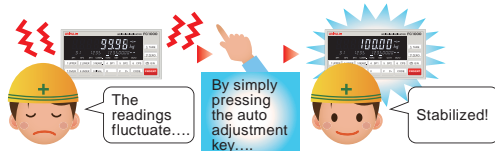
- Restore setting parameters with just one touch
 - You can copy setting parameters to another replaced FC1000.
 - Multiple FC1000s can use the exact same settings.
 - You can restore the initial setting when you first install FC1000.
(It will be saved as initial value separately from the setting parameters).

Depth of 99mm

Miniaturization of control panel & panel space saving.

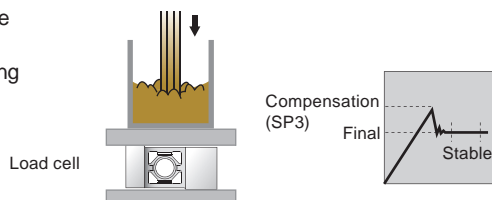
High performance filter & Auto filter adjustment

With combination of low pass filter (0.1 to 300Hz) which corresponds to various vibration and moving average filter (OFF, 2 to 512) that is effective for periodic vibration, automatic searching for optimal value with accuracy and stability can be achieved.
(You can manually adjust settings too)



Minus compensation

High-pressure liquid filling & powder feeding can be done.



Equivalent to IP65 Protection

By placing the rubber seal when mounting on the panel, the front panel can be protected from moisture and dust damage.

High sampling rate & resolution

High-Speed A/D conversion and powerful digital processing capability of 1200 times/sec. High display resolution of 1/100000 (max). Measurement can be performed quickly and precisely due to high speed A/D conversion.

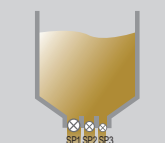
Load cell signal level display (-2.51mV/V to 5.1mV/V)

The output signal level of load cell can be displayed in mV/V for monitor purpose. Malfunction indicator or faulty sensor can be differentiated easily.

Total weight control function

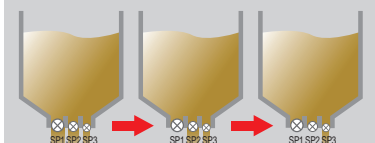
The batch weighing with a low capacity scale enables the fast and accurate measurement of larger total weight.

【Coarse feeding】



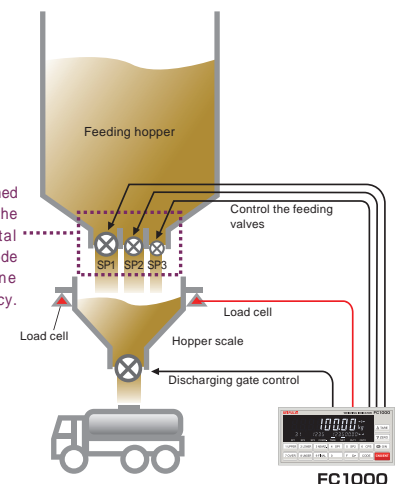
All three feeding valves are opened fully for faster weighing.

【Fine feeding】



The batch weight is adjusted automatically based on the target total weight, and the feeding is controlled in three steps (SP1/SP2/SP3) for more accurate weight measurement.

At first, 【coarse feeding】 is performed with lower accuracy. But, when the total weight reaches to the total weight set point, the weighing mode automatically switches to 【fine feeding】 with the higher accuracy.



Bright white LCD display with the useful 20 digits sub display.



The sub display can be used to show the cumulative weight, code/preset number, etc....

6 digit display

24 bit A/D convertor enables 6 digit display.

Memory for 32 weight settings

32 different weight settings can be saved in the memory and selected through I/O or interface. Batch weighing can be performed easily.

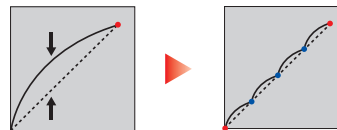
Equivalent input calibration

Theoretical calibration can be performed easily by registering the capacity and rated output of load cells.

Multipoint calibration (linearization)

Three additional points can be defined in the middle between zero and span for better linearity.

Even though the scale has poor linearity, it can be corrected to be a highly accurate scale.



Specifications

Analog	Excitation voltage	DC5V±5% Output current : within 90mA Remote sense type (Up to 6 350 load cells can be connected in parallel)
	Signal input range	−2.5 to +5.1mV/V
	Zero adjustment range	Automatic adjustment by digital processing −2.5 to +2.0mV/V
	Span adjustment range	Automatic adjustment by digital processing 0.02 to +3.0mV/V
	Linearization function	Can calibrate up to 3 points other than zero/span
	Min. input sensitivity	0.15μV/count
	Accuracy	Non-linearity: within 0.01%FS Zero drift: 0.0002%FS/°C typ. Gain drift: 1ppm/°C typ.
	Filter	Digital low-pass filter 0.1 to 300 Hz Moving average filter OFF, 2 to 512 times
	A/D converter	Speed: 300 times/sec, 1200 times/sec(depende on setting) Resolution: 24bit
	Display	Display unit 7-segment LCD display Main display: 8 digit(14.4mm character height), sub-display: 20 digit (4.3mm character height)
Display	Display value	5 digit sign: negative display at the highest digit (Up to 6 digits)
	Unit	None / kg / g / t / lb / N
	Decimal point	0, 0.0, 0.00, 0.000
	Weight errors	"LOAD": sensor signal level is above the signal input range, "-LOAD": the sensor signal level is below the signal input range, "OFL1": the Net weight is over the limit, "OFL3": the GROSS weight is over the limit
	Display frequency	1, 3, 6, 13 or 25 times/sec.
	Status display	SP1/SP2/SP3/COMPLETE/TARE ON/NET/OUT1/OUT2
	Setting method	By operating the membrane keys or through interface
	Memory of set value	Default settings: stored in NOV.RAM(non-volatile RAM) Time: backed up by lithium battery Other setting values: stored in F-RAM(non-volatile RAM)
	Protection of set value	Settings can be protected with the software LOCK
	Setting item	- Upper limit / Lower limit / Near zero / Set point 1 / Set point 2 / Compensation / Over / Under / Final - Comparison inhibit time 1 / Judging time / Complete output time / Compensation Feeding Time / Number of times for AZ / Number of times for judging / Auto free fall compensation regulation value / Comparison inhibit time 2 / Preset tare value - Weighing function 1 / Weighing function 2 / Weighing function 3 / Sequence mode / Key invalid-LOCK / Discharge time / Motion detection(Period - Range) / Zero tracking (Period) / Zero tracking (Range) - Balance weight value / Minimum scale division / NET weight over / GROSS weight over / DZ limitation value / Display selection / Gravitational acceleration / Sub-display mode / Sub-display selection - D/A output mode / D/A zero scale adjustment / D/A full scale adjustment / RS-232C/RS-485 setting / RS-232C/RS-485 ID / Transmission delay time / CC-Link I/F setting / CC-Link station number setting / Setting LOCK - Input selection 1 / Input election 2 / Input election 3 / Output election 1 / Output election 2 / Output election 3 / Output election 4 / Status display election / Sampling speed - Total count / SP0 / Total comparison mode / Target total weight (high 4) / Target total weight (under 5) / Total SP1 (high 4) / Total SP1 (under 5) - SD card command 1 / SD card command 2 / Time and Date / Auto adjustment filter / Digital low pass filter / Moving average filter / Extended function selection 1 / Extended function selection 2 / Total weight control function - Average weight value / Maximum weight value / Minimum weight value / General standard deviation / Sample standard deviation / Number of data / Latest data / Maximum-Minimum / Option display - Span calibration / Equivalent span calibration / Equivalent zero calibration / Linearize calibration 1 / Linearization calibration 2 / Linearization calibration 3 / Linearization Calibration / Calibration Point Confirmation / Password / Zero Calibration
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External signal	Output signal (12)	Selectable/configurable Open collector output V _{ce0} =30V, I _c =120mA
	Input signal (8)	Selectable/configurable Non-voltage contact input (internal circuit power supply voltage 12V)
Interface	SIF:SI/F interface	
	SDC:SD card slot	
General specification	Power supply voltage	AC100 to 240V (+10% -15%) (free power source 50/60Hz)
	Power consumption	5W typ.
Attachment	Operating conditions	Temperature Operating temperature range: -10 to +50°C Storage temperature range: -20 to +60°C Humidity 85%RH or less (non-condensing)
	Dimensions	144(W) × 72(H) × 109(D) mm (excluding the projections)
Optional accessories	Weight	Approx. 850g
	AC input cord (nominal rating 125V) 3m...1	
Optional accessories	FCN series I/O connector (with cover)...1	
	Load cell input connector...1	
Optional accessories	Operating tool...1	
	Jumper cable...2	
Optional accessories	SD card 1GByte...1	
	Rubber seal for dust & drop-proof protection	
Optional accessories	Quick manual...1	
	BCD output connector (when BCO option is selected)...1	
Optional accessories	D/A converter connector (when DAC option is selected)...1	
	CC-Link connector (when CC-Link option is selected)...1	
Optional accessories	CA325AC3P-B3:	AC input cord 3m
	CA325AC3P-CEE7/7-B2:	AC input cord (voltage resistance: 250V) 2m
Optional accessories	CN21:	D-sub9p connector for RS-232C
	CN34:	FCN series I/O connector (with cover)
Optional accessories	CN50:	FCN series I/O connector (with diagonal cover)
	CN55:	D/A converter connector
Optional accessories	CN70:	CC-Link connector
	CN71:	Double row connector for CC-Link
Optional accessories	CN72:	Double Connector for CC-Link
	CN78:	Loadcell input connector
Optional accessories	SD1G:	SD card 1GByte
	SD2G:	SD card 2GByte

Structure of product code

FC1000

①

②

③

③Option Interface

Sign	Interface
Standard	SI/F, SD slot

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

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

External dimension

