

Built-in Weight Measuring Sensor

DFB Series



**High
precision**

**High
speed**

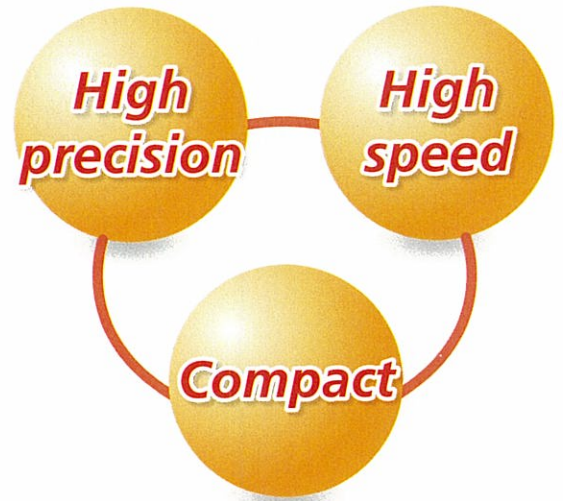
Compact

***Performance beyond
your expectations!***

Aimed at achieving even greater productivity, the DFB series weight measuring sensors redefine the standards for production systems.

The DFB series are high-performance weight measuring sensors developed to make conventional production systems more streamlined and efficient. Their slim design makes them ideal as built-in sensors for production equipment or systems, and their intricately designed weighing sensor can be used for a wide variety of built-in applications. The indicator is now small enough to fit the palm of your hand, achieving even greater space efficiency. The DFB series is truly the ideal built-in weighing sensor.

The use of force sensors for the weighing sensor provides a degree of precision in weighing that cannot be achieved with load cells, which allows for the fastest read speed in the industry. The use of force sensors also means that the DFB series can be used not only for measuring weight but also for various other measurement applications, such as measuring the amount of change and applied pressure.



Uncompromising pursuit of the ideal built-in weighing sensor

Space-saving design makes the DFB series ideal as built-in sensors

- The weighing sensor has a slim design that allows sensors to be arranged at a minimum pitch of 50 mm (DFB-60), ideal for a multiple-sensor configuration.
- The indicator, small enough to fit the palm of your hand, can be mounted separately from the DFB main body. This provides the user with a higher degree of freedom in determining the equipment or system layout.

Specifications optimized with attention to detail for maximum ease of use

- A weighing pan comes as standard with the DFB series. Surface bolts are used to mount this pan so it can be easily attached to or detached from a container, tare, or other such equipment.
- Since the DFB series is equipped with an overload release mechanism, durability with respect to excess weight and other types of system problems has been increased. Note: Loaded only DFB-60, -300 and -600
- The weighing sensor has a corrosion-resistant stainless body.
- Data on tare can be backed up in the indicator, so in the event of an unexpected power cut, the weighing operation can be resumed without having to redo the initial setup.

High-speed weighing operation increases work efficiency

- At 10 times per second, the data update interval for the DFB series is the fastest in the industry. This makes it possible to set the data updating interval in increments to between 0.1 and 1.6 seconds.
- A high-speed servo circuit integrated into the DFB series enables the fastest required stabilization time in the industry at 0.8 seconds. (This read time was produced in an in-house test conducted with a load of 100 g applied to the DFB-600.)

Meeting a variety of measurement needs

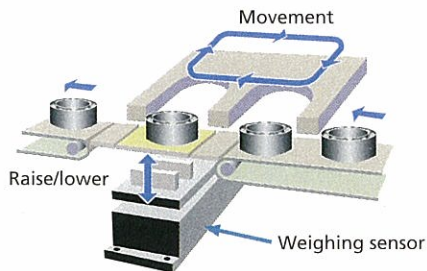
- Since displacement for a weighing sensor employing the null method of measurement is extremely small, the DFB series is best suited to simultaneous measurement of displacement and force.
- Convenient as a micro-filling control, the droplet mode comes as standard with the DFB series.

Ease of connection to PLC

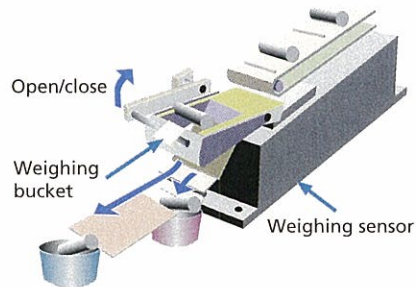
- The DFB series is equipped with an RS-232C output and a BCD parallel output. This makes it easier to connect the DFB series to a controller in a system into which the DFB series is to be built.
Note: The BCD parallel output is an option.

Applications of the DFB series built-in weight measuring sensor

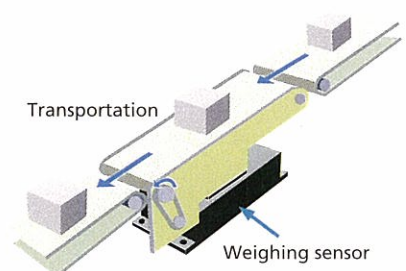
Transfer type



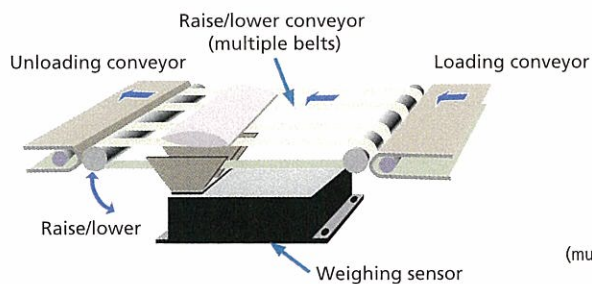
Open & close bucket type



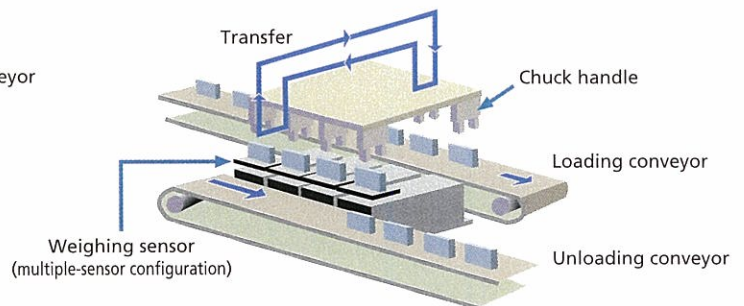
Weigh-during-transport type



Raise & lower conveyor type



Chuck transfer type



The above are but a few examples of the various types of production equipment that the DFB series can be built into. A pioneer in the development of built-in weight measuring sensors, SHINKO DENSHI CO., LTD. can provide expert advice on which built-in weight measuring sensor is best suited to your production equipment and systems, drawing on the wealth of know-how we have accumulated over the years. If you are considering introducing a built-in weight measuring sensor or are interested in knowing more about built-in weight measuring sensors, please feel free to contact us.

Built-in weight measuring sensor models and system configurations

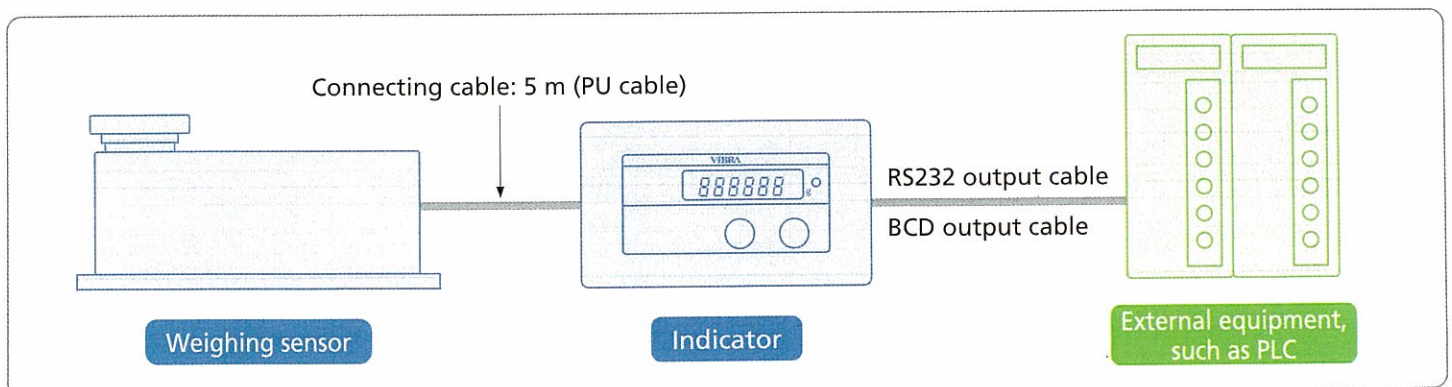


Indicator



Weighing unit

Weighing sensors with capacities from 60 g to 6,000 g are available. Select a capacity that is appropriate to the object to be weighed.



Weight Measuring Sensor Specifications

| | DFB-60 | DFB-300 | DFB-600 | DFB-3000 | DFB-6000 |
|-------------------------|--|---------|---------|----------|----------|
| Capacity | 60g | 300g | 600g | 3000g | 6000g |
| Readability | 0.001g | 0.001g | 0.01g | 0.01g | 0.1g |
| Repeatability | 0.001g | 0.002g | 0.01g | 0.02g | 0.1g |
| Non-linearity | ±0.001g | ±0.003g | ±0.01g | ±0.03g | ±0.1g |
| Temperature coefficient | ±8ppm/C | ±5ppm/C | ±8ppm/C | ±5ppm/C | ±8ppm/C |
| Temperature / humidity | Temperature: 0 to 40°C; humidity: below 80% RH (must be no condensation) | | | | |
| Housing | SUS304 | | | | |
| Baseboard | SUS303 | | | | |
| Weighing pan material | Anodized aluminum | | | SUS304 | |
| Weighing pan dimensions | 40×40mm | 55×55mm | | 74×74mm | |
| Dust / Water proof | IP43 | | | | |
| Connecting cable length | 5 m | | | | |

Indicator and General Specifications (common to all DFB models)

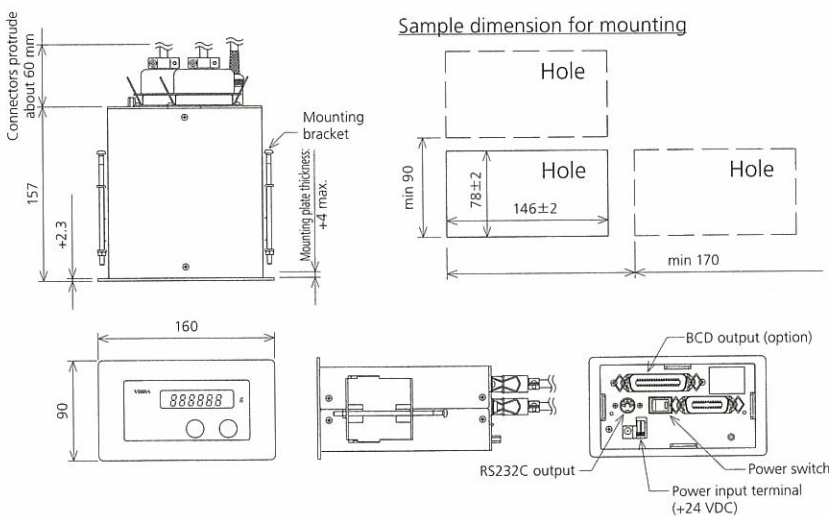
| | |
|------------------------|--|
| Display device | 7 -segment, 6 -digit fluorescent display tube |
| Panel material | PET |
| Housing material | Anodized aluminum and steel plate with baking finish |
| Temperature / humidity | Temperature: 0 to 40 °C; humidity: below 80% RH (must be no condensation) |
| Data updating interval | Approx. 0.1 to 1.6 seconds. (Fix / Auto-change) Selectable. |
| Tare function | Tare of weight up to Capacity possible by simple, one-touch operation. |
| Backup function | Tare can be backed up. |
| Communication function | Bi-directional RS232C (featured as standard) and terminal for input of external tare provided. BCD output (option), terminal for input of external tare and external hold |
| Power supply | 24 VDC (±10%), 0.3 A |

Options

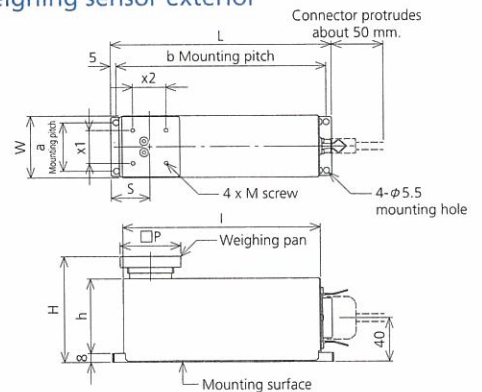
BCD parallel output
Terminal for input of external tare and external hold
Sink current of 10 mA maximum

External dimensions

Indicator section exterior



Weighing sensor exterior



| Model | W | H | L | l | h | a | b | x1,x2 | S | M | P |
|----------|----|-----|-----|-----|----|----|-----|-------|----|----|----|
| DFB-60 | 45 | 85 | 190 | 170 | 62 | 32 | 180 | 26 | 30 | M4 | 40 |
| DFB-300 | 56 | 95 | 200 | 180 | 67 | 44 | 190 | 30 | 35 | M4 | 55 |
| DFB-600 | | | | | | | | | | | |
| DFB-3000 | 80 | 100 | 240 | 220 | 73 | 60 | 230 | 40 | 37 | M5 | 74 |
| DFB-6000 | | | | | | | | | | | |

The contents of this catalogue are subject to change due to modifications and/or other reasons.

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