

## Features

- Capacities 350KG – 7500KG.
- Linearity  $\pm 0.024\%$  RO.
- IP68 rating.
- Optional 4-20mA output.
- Optional mounting kit.

## Applications

- Industrial platforms.
- Process weighing.
- Tank and silo weighing.
- Harsh environments.



## Description

The SB-FT1 is a high accuracy low profile shear beam load cell. The FT1 is laser welded and manufactured from stainless steel. The FT1 is suitable for static or dynamic applications in hostile environments offering high mechanical resistance.

This load cell can also be supplied with an optional 4-20mA built-in amplifier – see **Page 4** of this datasheet.

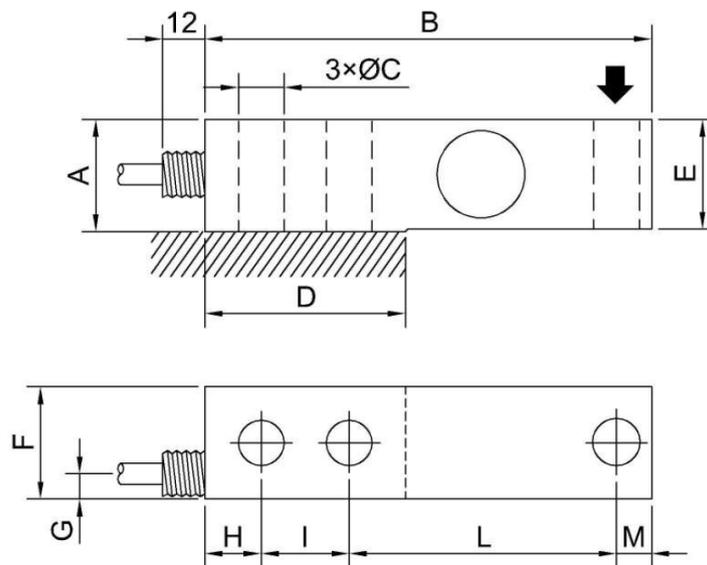
Please refer to **Page 5** for detailed information regarding the mounting kit.

## Typical Specification

PARAMETER	VALUE		UNITS
Capacities Range	350, 500	1000, 2000, 3000, 5000, 7500	KG
Rated Output	2		mV/V
Nominal Sensitivity	0.1%		$\pm\%$ of Rated Output
Combined Error	0.024		$\pm\%$ of Rated Output
Non-Repeatability	0.012		$\pm\%$ of Rated Output
Zero Return AFTER 30 MINUTES	0.028		$\pm\%$ of Rated Output
Creep NOMINAL LOAD OVER 30 MINUTES	0.026		$\pm\%$ of Rated Output
Creep NOMINAL LOAD OVER 20 AND 30 MINUTES	0.012		$\pm\%$ of Rated Output
Temperature Effect ON ZERO	0.026		$\pm\%$ of Rated Output/ $^{\circ}$ C
Temperature Effect ON OUTPUT	0.020		$\pm\%$ of Rated Output/ $^{\circ}$ C
Input Resistance	420 $\pm$ 20		$\Omega$
Output Resistance	350 $\pm$ 2		$\Omega$
Insulation Resistance	>5		G $\Omega$
Zero Balance	1		$\pm\%$ of Rated Output
Excitation RECOMMENDED SUPPLY	10		Volts AC or DC
Excitation NOMINAL RANGE	1-15		Volts AC or DC
Excitation MAXIMUM	18		Volts AC or DC
Temperature Range NOMINAL	-10 to +40		$^{\circ}$ C
Temperature Range COMPENSATED	-20 to +80		$^{\circ}$ C
Temperature Range OPERATING	-20 to +70		$^{\circ}$ C
Mechanical Limit SERVICE LOAD	120		% of Rated Output
Mechanical Limit SAFE OVERLOAD	150		% of Rated Output
Mechanical Limit ULTIMATE OVERLOAD	>300		% of Rated Output
Mechanical Limit MAXIMUM TRANSVERSE LOAD	50		% of Rated Output
Mechanical Limit MAXIMUM DYNAMIC LOAD	50		% of Rated Output
Displacement at Nominal Load	~0.2 to ~0.5		mm

PARAMETER	VALUE		UNITS
Cable Length	5		m
Sensor Construction Material	Stainless Steel		-
Environmental Protection	IP68		-
Weight	~1.1	~2.6	~KG

**Outline Dimensions in millimetres**



CAPACITY (KG)	A	B	ØC	D	E	F	G	H	I	L	M
350, 500, 1000, 2000	32.2	127	13	57	31.5	32.6	7	16	25	76	10
3000, 5000, 7500	45	180	21	85	45	Ø57.2	12	18	38.1	105.9	18

*If the dimensions or specification do not suit, PCM has an in-house design team that should be able to satisfy your requirements.*

**Fixing Screw Specification**

	350, 500, 1000, 2000KG	3000, 5000, 7500KG
<b>DIAMETER</b>	M12	M20
<b>RESISTANCE CLASS</b>	12.9	12.9
<b>TIGHTENING TORQUE (Nm)</b>	150	160

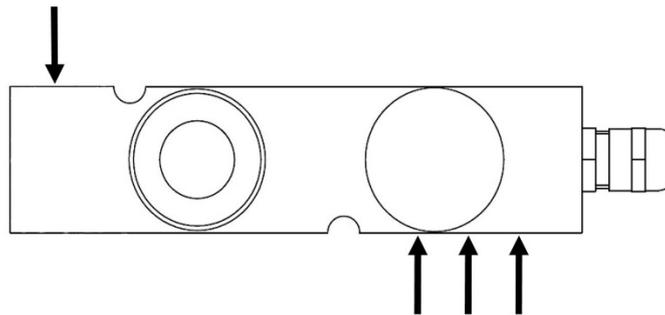
**Ordering Codes**

CAPACITY (KG)	ORDERING CODE
350	CFT1350KC25
500	CFT1500KC25
1000	CFT11TC25
2000	CFT12TC25
3000	CFT13TC25
5000	CFT15TC25
7500	CFT17T5C25

**Wiring Details**

LOAD CELL	OUTPUT	CABLE
	EXCITATION +	Red
	EXCITATION -	Black
	OUTPUT +	White
	OUTPUT -	Yellow
	-----	Shield

**Loading Mode**



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## Shear Beam Load Cell with Built-In Amplifier

### Description

The SB-FT1-AMP is of the same design as the standard SB-FT1 load cell, this version also features a built-in amplifier which can offer 4-20mA output. The specification, where different to the standard FT1 load cell can be found below.

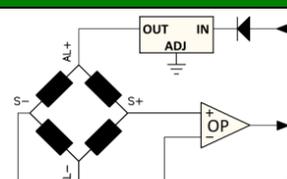
If you are interested in a FT1-AMP load cell, please choose the ordering code relevant to the capacity required, referring to **Page 2** of this datasheet.

### Typical Specification

PARAMETER	VALUE	UNITS
Capacities Range	350, 500, 1000, 2000, 3000, 5000, 7500	KG
Rated Output	4-20mA (3-wire)	-
Sensitivity Tolerance	0.1%	±% of Rated Output
Non-Linearity	0.05	±% of Rated Output
Non-Repeatability	0.02	±% of Rated Output
Temperature Effect ON ZERO	0.03	±% of Rated Output/°C
Temperature Effect ON OUTPUT	0.02	±% of Rated Output/°C
Loading Resistance	0-470	Ω
Insulation Resistance	>2	GΩ
Zero Balance	1	±% of Rated Output
Response Frequency	0.5-1	kHz
Excitation NOMINAL SUPPLY	10-28	Volts DC
Maximum Absorption NO LOAD APPLIED	30	mA

### Electrical Connections

**WARNING:** Protect Excitation + by using an external 100-200mA fast-blow fuse.

4-20mA OUTPUT	OUTPUT	CABLE
	EXCITATION +	RED
	EXCITATION -	BLACK
	SIGNAL +	WHITE
	NOT CONNECTED	YELLOW
	-----	SHIELD

PVC 105°C shielded cable, 5.2mm Ø with 4 tinned 0.35mm<sup>2</sup> Ø conductors. Shield connected to the body of the transducer.

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**SB-FT1 Shear Beam Load Cell Mounting Kit**

**Description**

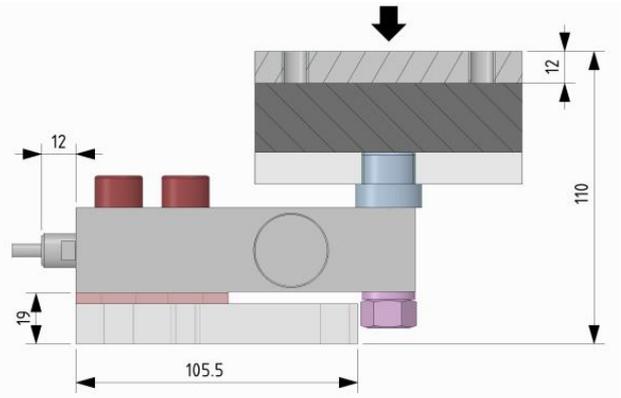
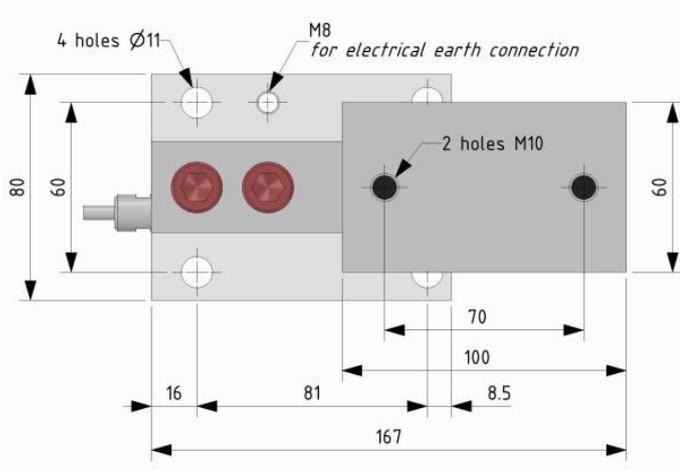
The UPFT1 mounting kit for the SB-FT1 load cell is designed to refine the installation of the FT1 load cell in weighing and batching system applications in tanks, silos, and hoppers. It is suitable for static or vibrating applications.

Made from stainless steel, the UPFT1 is provided with an elastomer bearing to preserve excellent features even in event of settlements, thermal dilation, positioning error, transverse thrusts and deformations or vibrations of structures.

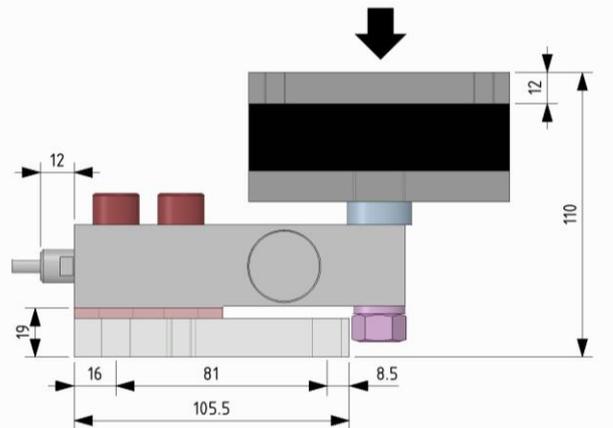
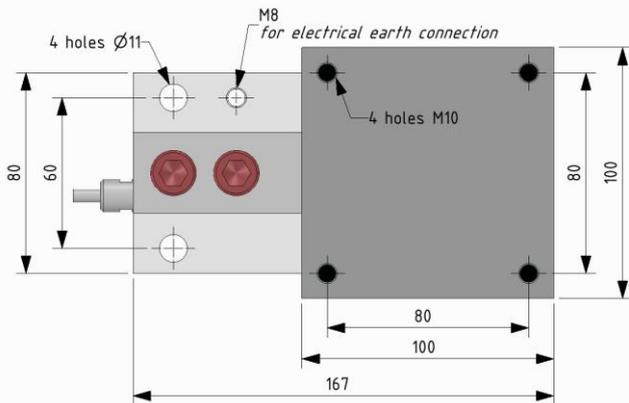


**Outline Dimensions in millimetres**

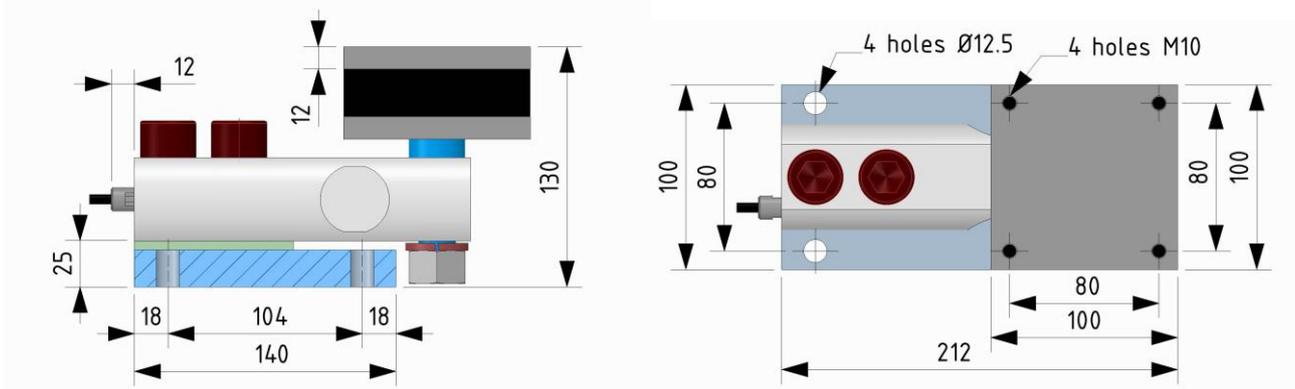
**350KG – 1000KG...**



**2000KG...**

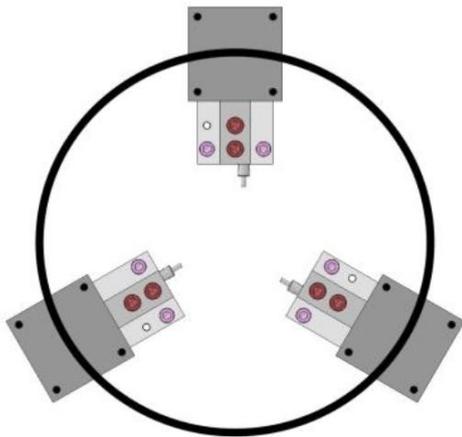


**3000KG – 5000KG...**

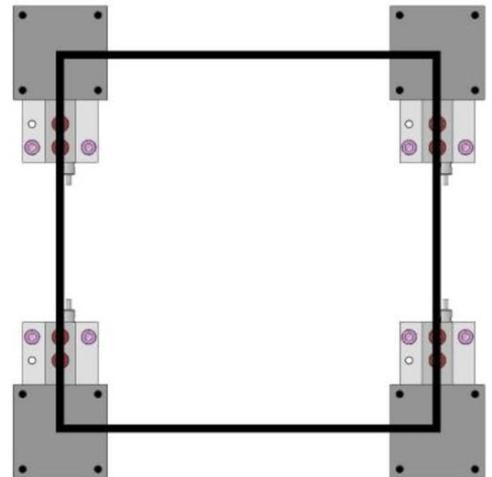


## Assembly Instructions

- 1) Fix the lower plates of the unit to the floor using M10 or M12 bolts according to the UPFT1 part code.
- 2) Fix the weighing system to the upper plates of the unit using M10 bolts.
- 3) Connect the weighing units in use to the electrical earth, in accordance with plant design regulations.



*Circular system with 3 supporting points.*



*Square system with 4 supporting points.*

## Installation Tips

- Take care to avoid accidental overloads while assembling the unit.
- Make sure the load cell is not subject to any electrical current.
- While welding, connect the ground clamp to the top of the weighing unit.

## Ordering Codes

RATING (KG)	ORDERING CODE
350 – 1000	CUPFT1EL1T
2000	CUPFT1EL
3000 – 5000	CUPFT1EL3E5T

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