

3A400 SERIES 3-AXIS LOAD CELL (U.S. & METRIC)

SPECIFICATIONS

ACCURACY – (MAX ERROR*)		
Nonlinearity – %FS		±0.2
Hysteresis – %FS		±0.5
Creep, in 30 min – %		±0.5
TEMPERATURE		
Effect on Zero – %RO / deg	°C	±0.02
Effect on Output – % / deg	°C	±0.02
Compensated Range	°C	-10 to +70
	°F	+14 to +158
Operating Range	°C	-10 to +85
	°F	+14 to +185
ELECTRICAL		
Rated Output (Nominal) – mV/V		±1
Max. Excitation Voltage – V		10
Zero Balance – mV/V		0.1
Input Resistance, x/y/z axis – Ω		740
Output Resistance, x/y/z axis – Ω		700
Insulation Resistance – Ω		> 5 × 10 ⁹
Electrical Connection		16-PIN Connector. 3 m Cable with 37-PIN Connector.
MECHANICAL		
Rated Capacity (FS)	kN	500
	lbf	112K
Material		Nickel plated steel
Deflection – Fx, Fy	mm	0.3
	in	0.01
Deflection – Fz	mm	0.6
	in	0.02
Total Weight	kg	120
	lbs	264.5
Safe Overload – %RO		150
Ultimate Overload – %RO		300
Protection Level		IP54
ECCENTRICITY AND MOMENT*		
Allowable Moment	Nm	15K
	lbf-in	133K
Crosstalk: x:y / y:x – %		±1
Crosstalk: z:x/y – %		±1
Crosstalk: x/y:z – %		±1
Influence of Eccentric Load to FS – %FS / 500Nm		±1

* Nominal

U.S. dimensions and capacities are provided for conversion only. Standard product will be sold in kN and Metric dimensions. U.S. capacities available upon special request and at an additional cost.

STANDARD CONFIGURATION



Model 3A400 (Shown)

FEATURES & BENEFITS

- 3-Axis – Fx Fy Fz; independent bridges
- 500kN (112K lbf) force range
- Compact size
- Low crosstalk
- IP67 Rating
- Temperature compensated

Interface's 3A400 3-axis load cell measures forces simultaneously in 3 mutually perpendicular axes: X, Y, and Z - tension and compression. Each axis provides a unique mV/V output and requires no mathematical manipulation. The 3-axis load cell is built to minimize eccentric loading effects and crosstalk between axes.

The 3A400 is ideally suited to many industrial and scientific applications, such as aerospace, robotics, automotive and medical research (orthopedics and bio-mechanical).

The load cell is provided in various capacity ranges and sizes with each of the three axes providing the same capacity.

We are happy to work with your design needs – providing a custom design if warranted for varying capacities (between X, Y, and Z), higher temperature capability, or OEM/private labeling if needed.

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CHARACTERISTICS

Capacity	500kN
Fx (kN)	500
Fy (kN)	500
Fz (kN)	500
Max Bending Moment (Nm)	15
Torque Limit (Nm)	15
Breaking Force %FS	-
Material	Stainless Steel
IP Rating	67

WIRING DIAGRAM

	Description	Wire Color	37-pin D-SUB	16-pin M23
Shield	Shield	Shield	1	N/C
X-Axis	+ Excitation	Brown	20	2
	- Excitation	White	27	1
	+ Output	Green	22	3
	- Output	Yellow	25	4
Y-Axis	+ Excitation	Pink	2	6
	- Excitation	Gray	9	5
	+ Output	Blue	4	7
	- Output	Red	7	8
Z-Axis	+ Excitation	Purple	11	10
	- Excitation	Black	18	9
	+ Output	Gray/Pink	13	11
	- Output	Red/Blue	16	12

ACCESSORIES



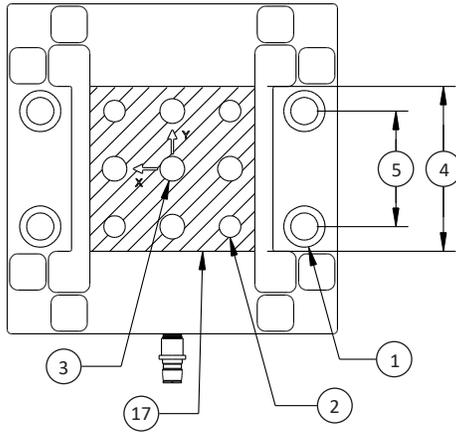
Model BX3-HD44-CAN (Shown)
3-Channel CANbus AND USB Strain Gage Amplifier



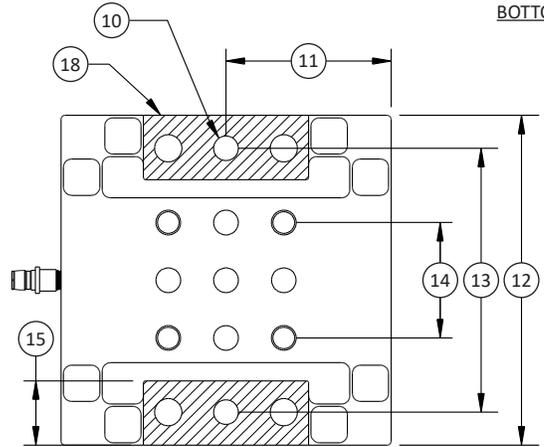
Model BSC4A (Shown)
4-Channel Analog Amplifier

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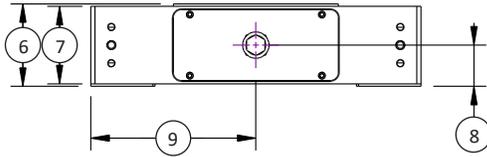
TOP VIEW



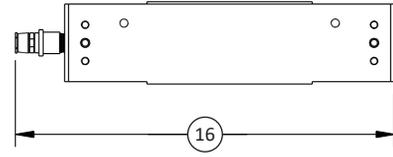
BOTTOM VIEW



FRONT VIEW



SIDE VIEW



DIMENSIONS

See Drawing	Metric	U.S.
	mm	in
(1)	4 x \varnothing 33 THRU, \sqcup \varnothing 50 \downarrow 36	4 x \varnothing 1.3 THRU, \sqcup \varnothing 2.0 \downarrow 1.4
(2)	4 x (M30x3.5) THRU	4 x (M30x3.5) THRU
(3)	5 x \varnothing 30 E7 THRU	5 x \varnothing (1.1835/1.1827) THRU
(4)	200	7.9
(5)	140	5.5
(6)	100	3.9
(7)	94	3.7
(8)	50	2.0
(9)	200	7.9
(10)	2 x \varnothing 30 E7 \downarrow 40	2 x \varnothing (1.1835/1.1827) \downarrow 1.6
(11)	200	7.9
(12)	400	15.7
(13)	320	12.6
(14)	140	5.5
(15)	78	3.1
(16)	460 (+5)	18.1 (+0.2)
(17)	Bolting Surface / Measuring Platform	
(18)	Bolting Surface	

Datasheet 3A400 v3.4 12-01-2025

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