

Model 3A60A

MODEL 3A SERIES 3-AXIS LOAD CELL

- 3-Axis – Fx Fy Fz; Independent Bridges
- 20N to 500kN Force Range
- Compact Size
- Low Crosstalk
- Temperature Compensated

Interface's 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 3A Series 3-axis load cell is ideally suited to many industrial and scientific applications, such as aerospace, robotics, automotive and medical research (orthopedics and biomechanical).

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.

Accessories

BSC4A 4-Channel Analog Amplifier

BSC4D 4-Channel USB Digital Amplifier

Capacity Comparison

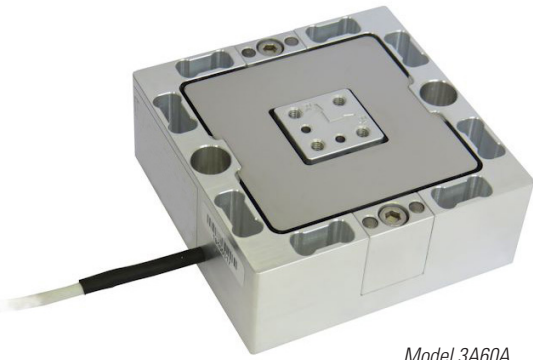
MODEL	CAPACITY (N)	MATERIAL
3A60A	20	Aluminum
	50	
	100	Stainless
	200	
	500	
3A120	50	Aluminum
	100	
	200	
	500	
	1K	Stainless
	1K	
	2K	
3A160	2K	Nickel Plated Steel
	5K	
	10K	
	20K	
	50K	
3A300	50K	Nickel Plated Steel
	100K	
	200K	
3A400	500K	Nickel Plated Steel

Wiring

	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
3A60A	+ Output	Orange	13	11
	- Output	Transparent	16	12
3A120, 3A160, 3A300, & 3A400	+ Output	Gray/Pink	13	11
	- Output	Red/Blue	16	12

MODEL 3A60A 3-AXIS LOAD CELL

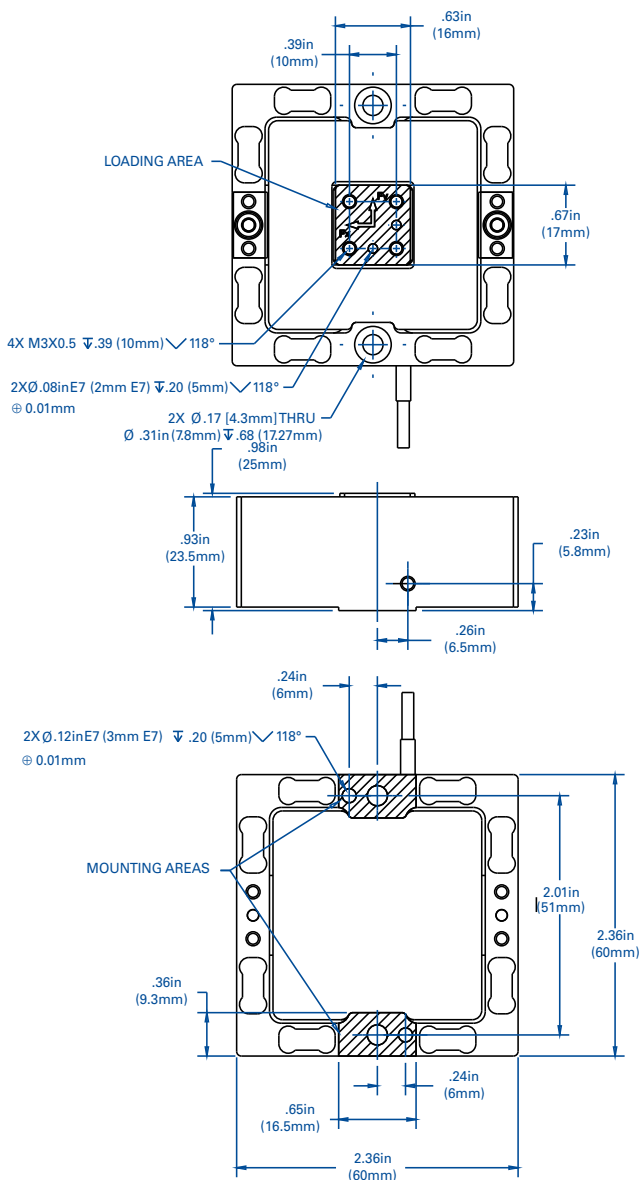
The 3A60A is a new and improved version of the original 3A60 with revised mounting holes and extended capacity ranges. The 3A60A is NOT backward compatible with the old 3A60.



Model 3A60A

Dimensions

Specifications



ACCURACY (Max. Error*)						
Nonlinearity - %FS	±0.2					
Hysteresis - %FS	±0.02					
Creep (30 min) - %	±0.1					
MECHANICAL DATA						
Rated Capacity (FS) - N	10	20	50	100	200	500
Material	Aluminum			Stainless		
Deflection - Fx, Fy - mm	0.1			0.2		
Deflection - Fz - mm	0.15					
Total Weight - kg	.110			0.2		
Safe Overload - %RO	150					
Ultimate Overload - %RO	300					
Protection Level	IP 54					
ELECTRICAL DATA						
Rated Output (Nom.) - mV/V	±0.5					
Max. Excitation Voltage - V	10					
Zero balance - mV/V	0.1					
Input resistance, x/y axis - Ω	395 ±5			375 ±5		
Output resistance, z axis - Ω	355 ±5					
Insulation Resistance - Ω	> 5 × 10 ⁹					
Electrical Connection	3m Cable with 37-PIN Connector. Includes Mate					
TEMPERATURE						
Operating Range - °C	-10 to 85					
Compensated Range - °C	-10 to 70					
Effect on zero - %RO / °C	± 0.02					
Effect on output - % / °C	± 0.02					
ECCENTRICITY AND MOMENT*						
Allowable moment - Nm	5			10		
Crosstalk: x:y / y:x - %	± 2					
Crosstalk: z:x/y - %	± 2					
Crosstalk: x/y:z - %	± 2					
Eccentric Load Sensitivity - %FS @ 20mm	± 1					

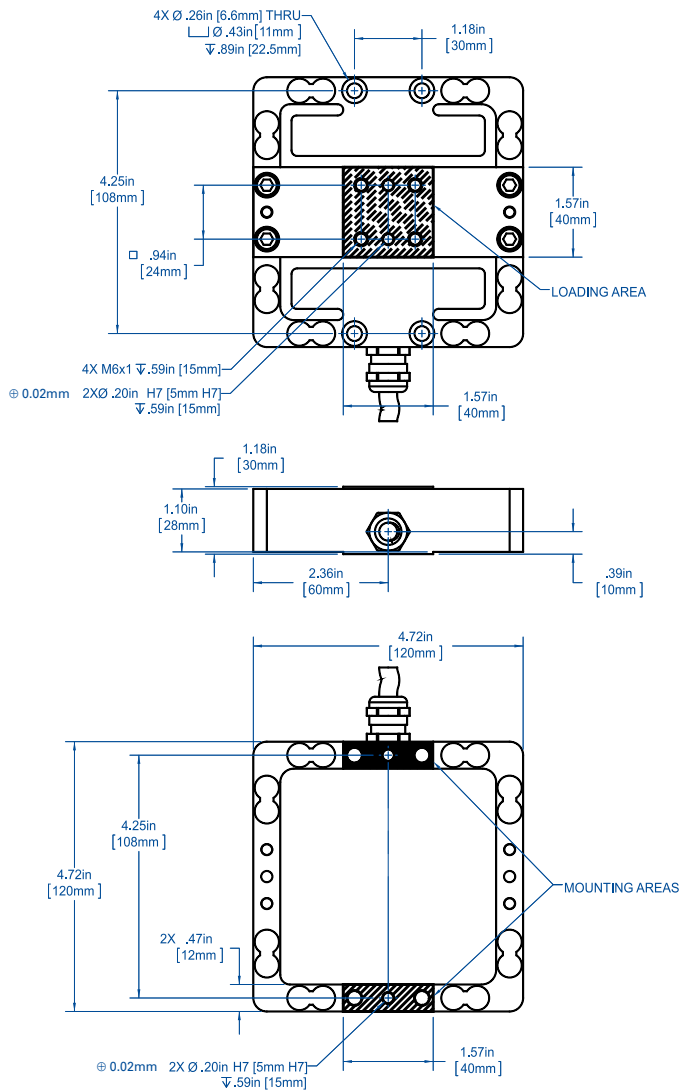
*Nominal

MODEL 3A120 3-AXIS LOAD CELL



Model 3A120

Dimensions



Specifications

ACCURACY (Max. Error*)								
Nonlinearity - %FS	±0.2							
Hysteresis - %FS	±0.02							
Creep (30 min) - %	±0.1							
MECHANICAL DATA								
Rated Capacity (FS) - N	50	100	200	500	1K	1K**	2K	5K
Material	Aluminum				Stainless Steel			
Deflection - Fx, Fy - mm	0.1							
Deflection - Fz - mm	0.15		0.11	0.06	0.1	0.13	0.15	0.14
Total Weight - kg	1.1				2.0			
Safe Overload - %RO	150							
Ultimate Overload - %RO	300							
Protection Level	IP 54 (OPTION IP68)							
ELECTRICAL DATA								
Rated Output (Nom.) - mV/V	±0.5	±1						
Max. Excitation Voltage - V	10							
Zero balance - mV/V	0.1							
Input resistance, x/y axis - Ω	780 ±5				740 ±5			
Output resistance, z axis - Ω	700 ±5							
Insulation Resistance - Ω	> 5 × 10 ⁹							
Electrical Connection	3m Cable with 37-PIN Connector. Includes Mate							
TEMPERATURE								
Operating Range - °C	-10 to 85							
Compensated Range - °C	-10 to 70							
Effect on zero - %RO / °C	± 0.02							
Effect on output - % / °C	± 0.02							
ECCENTRICITY AND MOMENT*								
Allowable moment - Nm	100				200			
Crosstalk: x:y / y:x - %	± 2							
Crosstalk: z:x/y - %	± 2							
Crosstalk: x/y:z - %	± 2				± 5			
Eccentric Load Sensitivity - %FS @ 100mm	± 1							

*Nominal

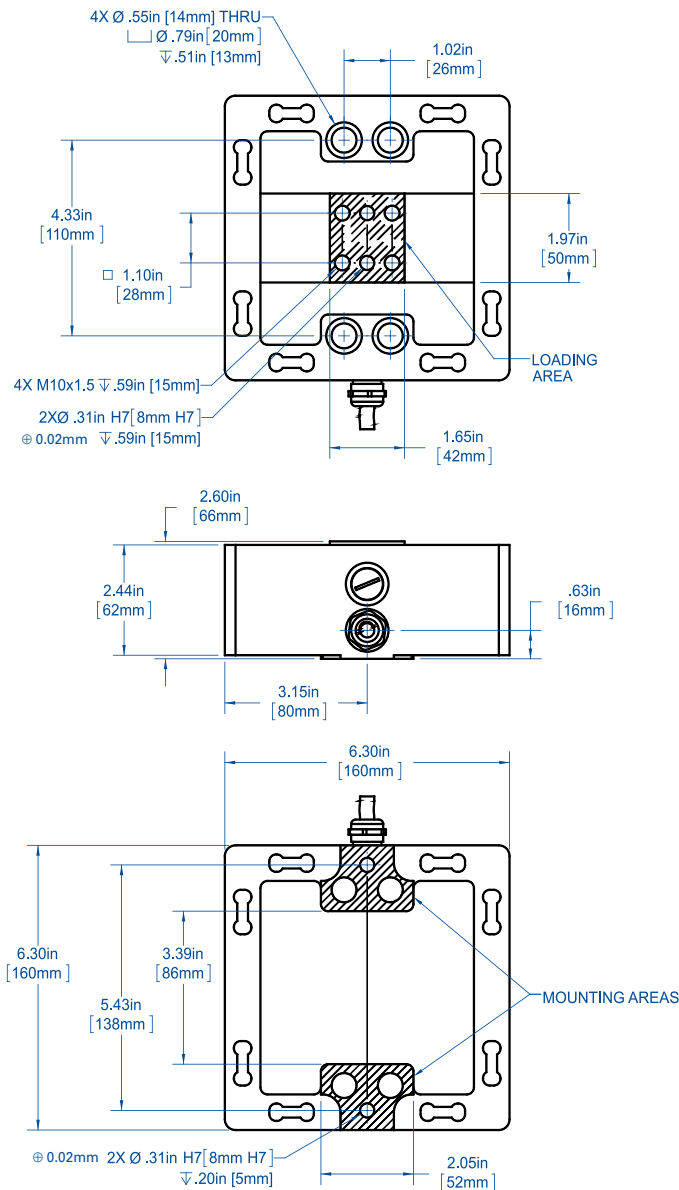
**Stainless Version denoted by 3A120S-1KN

MODEL 3A160 3-AXIS LOAD CELL



Model 3A160

Dimensions



Specifications

ACCURACY (Max. Error*)					
Nonlinearity - %FS	±0.2				
Hysteresis - %FS	±0.1				
Creep (30 min) - %	±0.05				
MECHANICAL DATA					
Rated Capacity (FS) - N	2K	5K	10K	20K	50K
Material	Nickel Plated Steel				
Deflection - F _x , F _y - mm					
Deflection - F _z - mm	0.16	0.1	0.07	0.05	0.03
Total Weight - kg	8.2				
Safe Overload - %RO	150				
Ultimate Overload - %RO	300				
Protection Level	IP 54				
ELECTRICAL DATA					
Rated Output (Nom.) - mV/V	±1				
Max. Excitation Voltage - V	10				
Zero balance - mV/V	0.1				
Input resistance, x/y axis - Ω	740 ±5				
Output resistance, z axis - Ω	700 ±5				
Insulation Resistance - Ω	> 5 × 10 ⁹				
Electrical Connection	3m Cable with 37-PIN Connector. Includes Mate				
TEMPERATURE					
Operating Range - °C	-10 to 85				
Compensated Range - °C	-10 to 70				
Effect on zero - %RO / °C	± 0.02				
Effect on output - % / °C	± 0.02				
ECCENTRICITY AND MOMENT*					
Allowable moment - Nm	500	1000	2000		
Crosstalk: x:y / y:x - %	± 1				
Crosstalk: z:x/y - %	± 2				
Crosstalk: x/y:z - %	± 2				
Eccentric Load Sensitivity - %FS @ 50mm	± 1				

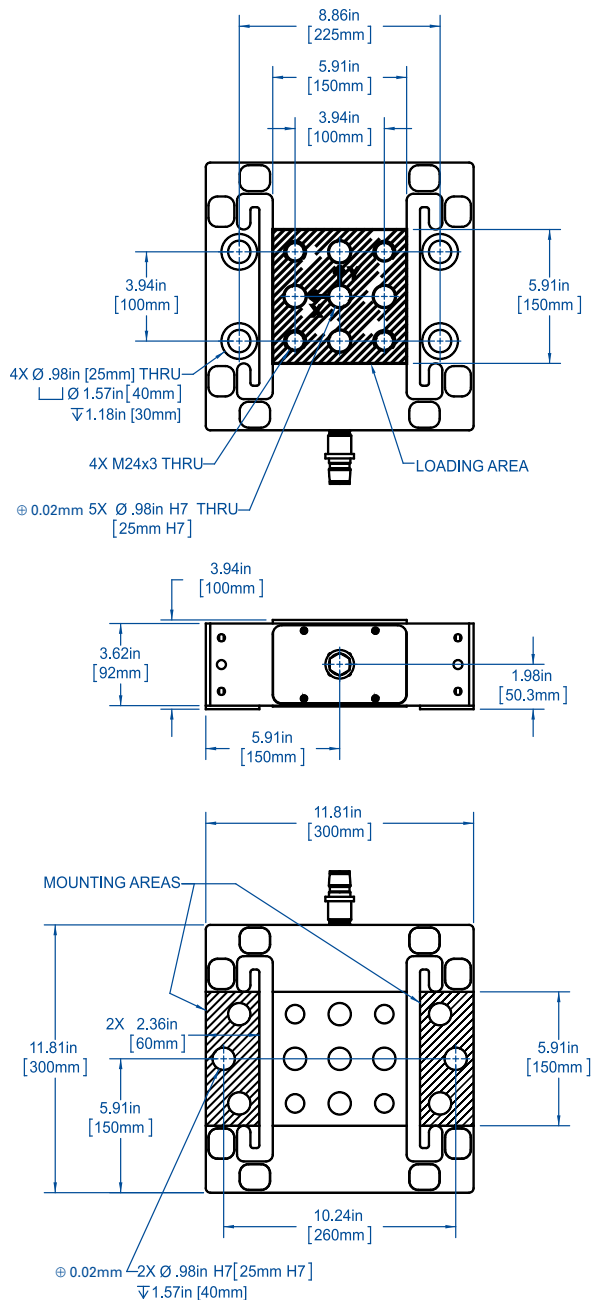
*Nominal

MODEL 3A300 3-AXIS LOAD CELL



Model 3A300

Dimensions



Specifications

ACCURACY (Max. Error*)			
Nonlinearity - %FS	±0.2		
Hysteresis - %FS	±0.1		
Creep (30 min) - %	±0.05		
MECHANICAL DATA			
Rated Capacity (FS) - N	50K	100K	200K
Material	Nickel Plated Steel		
Deflection - Fx, Fy - mm			
Deflection - Fz - mm			
Total Weight - kg			
Safe Overload - %RO	150		
Ultimate Overload - %RO	300		
Protection Level	IP 54		
ELECTRICAL DATA			
Rated Output (Nom.) - mV/V	±1		
Max. Excitation Voltage - V	10		
Zero balance - mV/V	0.1		
Input resistance, z axis - Ω	740 ±5		
Output resistance, z axis - Ω	700 ±5		
Input resistance, x/y axis - Ω	370 ±5		
Output resistance, x/y axis - Ω	350 ±5		
Insulation Resistance - Ω	> 5 × 10 ⁹		
Electrical Connection	16-PIN Connector. Includes 3m mating cable with 37-PIN connector		
TEMPERATURE			
Operating Range - °C	-10 to 85		
Compensated Range - °C	-10 to 70		
Effect on zero - %RO / °C	± 0.02		
Effect on output - % / °C	± 0.02		
ECCENTRICITY AND MOMENT*			
Allowable moment - Nm	4000	8000	16000
Crosstalk: x:y / y:x - %	± 1		
Crosstalk: z:x/y - %	± 1		
Crosstalk: x/y:z - %	± 10		
Eccentric Load Sensitivity - %FS @ 100mm	± 1		

*Nominal

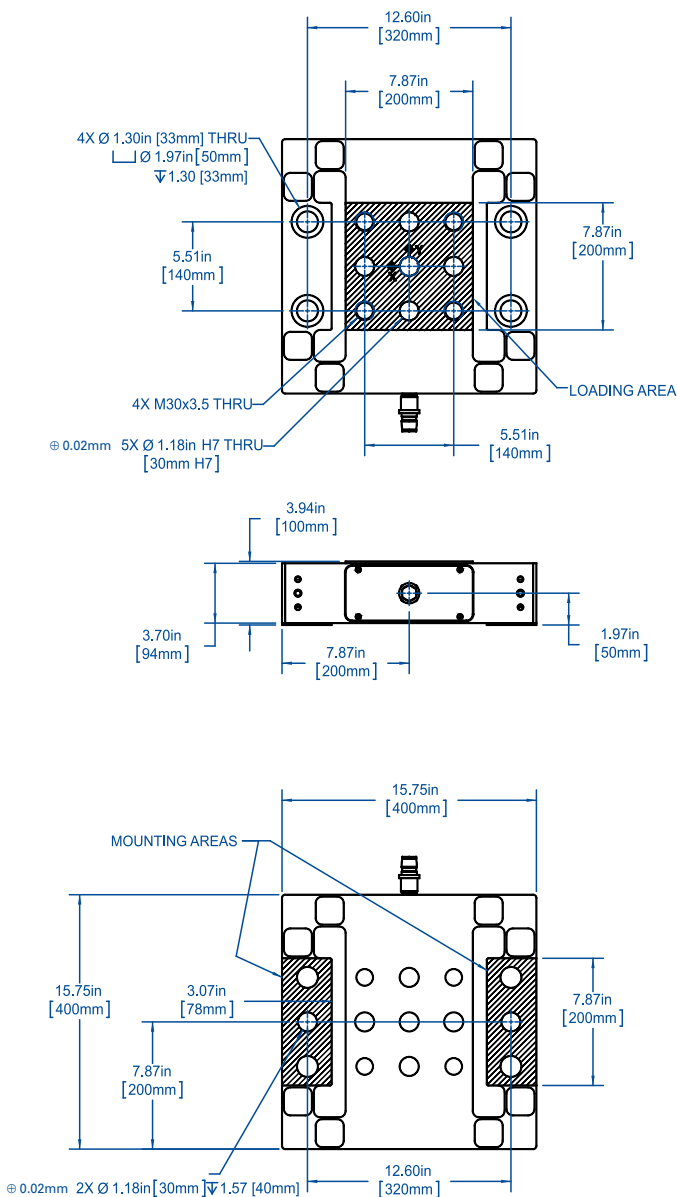
MODEL 3A400 3-AXIS LOAD CELL



Model 3A400

Dimensions

Specifications



ACCURACY (Max. Error*)	
Nonlinearity - %FS	±0.2
Hysteresis - %FS	±0.1
Creep (30 min) - %	±0.05
MECHANICAL DATA	
Rated Capacity (FS) - N	500K
Material	Nickel Plated Steel
Deflection - Fx, Fy - mm	0.1
Deflection -Fz - mm	
Total Weight - kg	
Safe Overload - %RO	150
Ultimate Overload - %RO	300
Protection Level	IP 54
ELECTRICAL DATA	
Rated Output (Nom.) - mV/V	±1
Max. Excitation Voltage - V	10
Zero balance - mV/V	0.1
Input resistance, x/y axis - Ω	370 ±5
Output resistance, z axis - Ω	340 ±5
Insulation Resistance - Ω	> 5 × 10 ⁹
Electrical Connection	16-PIN Connector. Includes 3m mating cable with 37-PIN connector
TEMPERATURE	
Operating Range - °C	-10 to 85
Compensated Range - °C	-10 to 70
Effect on zero - %RO / °C	± 0.02
Effect on output - % / °C	± 0.02
ECCENTRICITY AND MOMENT*	
Allowable moment - Nm	25000
Crosstalk: x:y / y:x - %	± 1
Crosstalk: z:x/y - %	± 1
Crosstalk: x/y:z - %	± 5
Eccentric Load Sensitivity - %FS @ 100mm	± 1

*Nominal