interface
FORCE MEASUREMENT SOLUTIONS

3AR100 ROUND 3-AXIS LOAD CELLS (U.S. & METRIC)

SPECIFICATIONS

ACCURACY – (MAX ERROR)		
Nonlinearity – %FS		± 0.2
Hysteresis – %FS		± 0.2
Nonrepeatability – %RO		± 0.2
Creep, in 20 min – %		± 0.1
TEMPERATURE		
Effect on Zero – %RO / deg	°C	± 0.01
Effect on Output – % / deg	°C	± 0.01
Compensated Range	°C	-10 to +70
	°F	+14 to +158
Operating Range	°C	-10 to +85
	°F	+14 to +185
ELECTRICAL		
Rated Output x and y axis - mV/V		1.5
Rated Output z axis - mV/V		0.8
Excitation - V MAX		10
Zero Balance - mV/V		<0.05
Input Resistance x and y axis – Ω		700
Input Resistance z axis – Ω		1400
Output Resistance x and y axis – Ω		700
Output Resistance z axis – Ω		1400
CROSSTALK		
x into y - %FS		2
y into x - %FS		2
z into x - %FS		1
z into y - %FS		1
x into z - %FS		1
y into z - %FS		1
MECHANICAL		
Environmental Rating		IP65
Safe Overload – %CAP		150
Ultimate Overload – %RO		300
Cable Length	m	5
	ft	16.4
Connector		M12, 12-pin

APPLICATIONS

- Robotics
- Medical Technology
- Measurements in Automation Technology
- Mounting and Assembling of Parts in Production Lines
- 6-Axis Force/Torque Platforms Consisting of 4x 3AR Sensors
- Research and Testing

Interface's 3AR100 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 3AR Series 3-axis load cell 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.

STANDARD CONFIGURATION

Model 3AR100 (Shown)

FEATURES & BENEFITS

- 3-Axis - Fx Fy Fz; independent bridges
- Capacities - 2kN/10kN, 5kN/20kN, 10kN/30kN, 20kN/60kN (450lbf/2.2Klbf, 1.1Klbf/4.5Klbf, 2.2Klbf/6.7Klbf, 4.5Klbf/13.5Klbf)
- Compact size
- Low crosstalk
- Temperature compensated
- Optional BSC4A Amplifier can provide scaled analog outputs for all 3 channels simultaneously
- Optional BX3-HD44-CAN 3-Channel CANbus and USB Strain Gage Amplifier can log, graph and display data for all 3 channels simultaneously

CABLE CONNECTION OPTIONS (Included with purchase)

- M12 to 37-Pin D-Sub
- M12 to M16 24-pin
- M12 to 44-pin High Density D-Sub

U.S. dimensions and capacities are provided for conversion only. Standard products have International System of Units (SI) capacities and dimensions.

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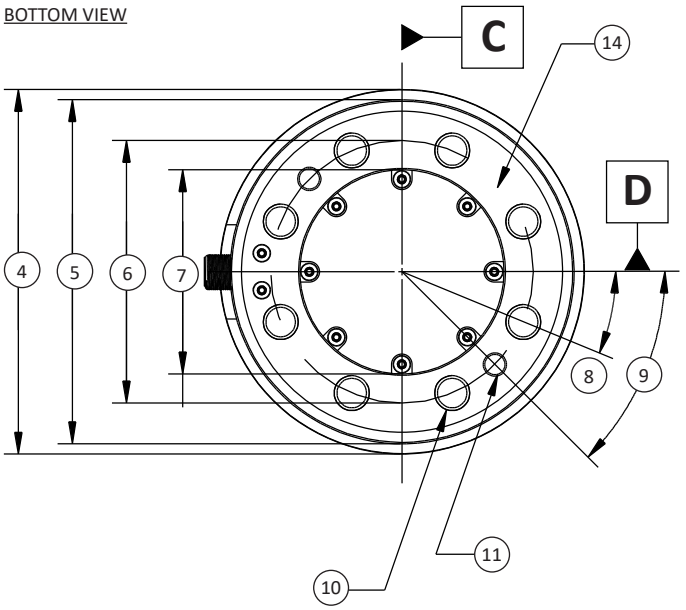
CHARACTERISTICS

	B	C	D	E
Fx (N)	2K	5K	10K	20K
Fy (N)	2K	5K	10K	20K
Fz (N)	10K	20K	30K	60K
Diameter (mm)	Ø100	Ø100	Ø100	Ø100
Height (mm)	72	72	72	72
Weight (g)	2.5K	2.5K	2.5K	2.5K
Material	Tool Steel			
Housing Material	Black Anodized Aluminum			
Protection (IP)	65	65	65	65
Max Bending Moment	0.5KNm	0.5KNm	0.5KNm	0.5KNm
Torque Limit	1.5kNm	1.5kNm	1.5kNm	1.5kNm

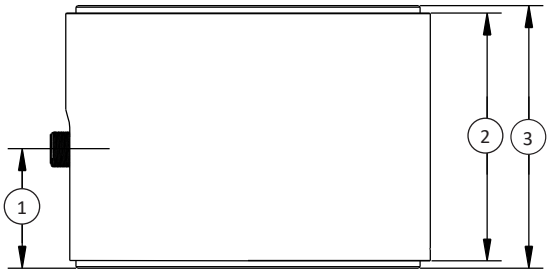
DIMENSIONS

See Drawing	Metric	U.S.
	mm	in
(1)	35	1.38
(2)	68	2.68
(3)	72	2.83
(4)	Ø100 - 0.2	Ø3.94 - 0.008
(5)	Ø90	Ø3.54
(6)	Ø75 ± 0.1	Ø2.95 ± 0.004
(7)	Ø55 H8 ↧ 4	Ø2.17 H8 ↧ 4
(8)	22.5°	22.5°
(9)	45°	45°
(10)	8 x M10 x 1.5 ↧ 12 ⌵ 118°	8 x M10 x 0.06 ↧ 0.47 ⌵ 118°
(11)	6 x Ø6E7 ↧ 10 ⌵ 118° ⌖0.02/C/D	6 x Ø6E7 ↧ 0.39 ⌵ 118° ⌖0.0008/C/D
(12)	6 x Ø6E7 ↧ 10 ⌵ 118° ⌖0.02/A/B	6 x Ø6E7 ↧ 0.39 ⌵ 118° ⌖0.0008/A/B
(13)	Live End / Measuring Surface	
(14)	Dead End	

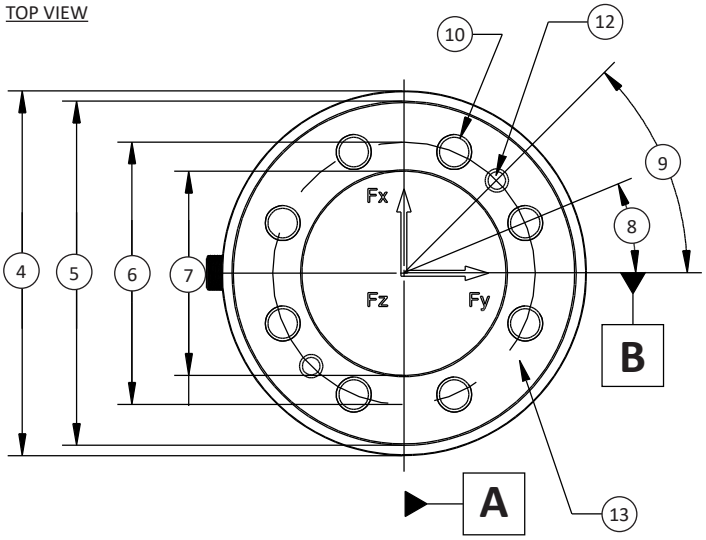
BOTTOM VIEW



SIDE VIEW



TOP VIEW



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