

LFM-A

Compact 6-Component Force Transducers

● Compact & Lightweight ● 1 kN & 3 kN



NEW

Enables simultaneous measurement of 3 forces (F_x , F_y , F_z) in 3 axial directions orthogonal to the transducer and 3 moments (M_x , M_y , M_z) around the axes. An 8-channel measuring instrument amplifies the transducer's 8 output components in strain quantity and calculates 6-component force.

In addition, real-time measurement is possible by connecting PC and PCD-300B. (Measurement software PCD-6A is required.)

Features

- Compact
- Center hole type
- High sensitivity

Specifications

Performance

Rated Capacity: See table below.

Nonlinearity: Within $\pm 0.5\%$ RO

Hysteresis: Within $\pm 0.5\%$ RO

Interference: $\pm 1.5\%$ RO (after correction by interference correction coefficient stated in Calibration Sheet)

Rated Output: See table below.

Environmental Characteristics

Safe Temperature Range: -10 to 70°C (noncondensing)

Compensated Temperature Range: 0 to 60°C (noncondensing)

Temperature Effect on Zero Balance: Within $\pm 0.05\%$ RO/ $^\circ\text{C}$

Temperature Effect on Output: Within $\pm 0.05\%$ / $^\circ\text{C}$

Electrical Characteristics

Safe Excitation Voltage: 12 VAC or DC

Recommended Excitation Voltage: 1 to 5 VAC or DC

Input/Output Resistance: $350\ \Omega \pm 3\%$

Cable: 16-conductor ($0.11\ \text{mm}^2$) twisted pair vinyl shielded cable, 6.6 mm diameter by 55 cm long, bared at the tip (Shield wire is not connected to mainframe)

Mechanical Properties

Safe Overload Rating: 150%

Material

Main unit

LFM-A-1KN: Aluminum (metallic finish)

LFM-A-3KN: SUS (metallic finish)

Cover: Black anodic oxide coating aluminum

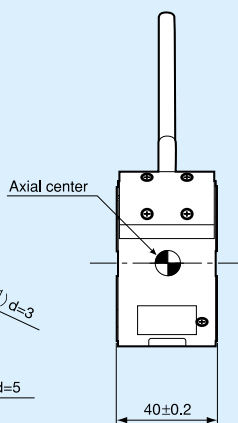
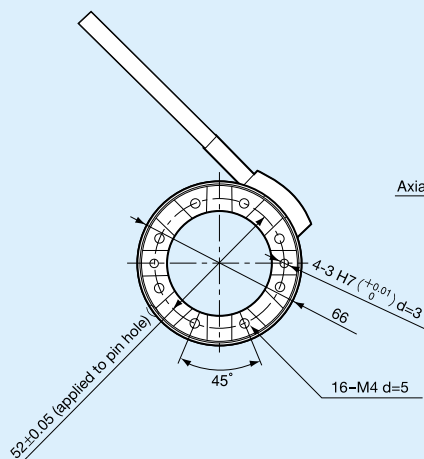
Cable holder: Anodic oxide coating aluminum

Weight: See table below.

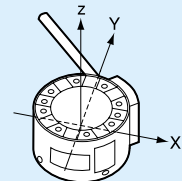
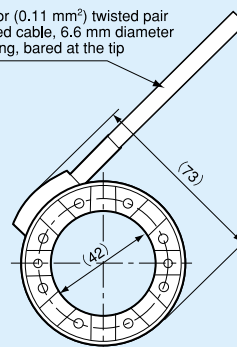
Protection Rating: IP40

Model	Rated Capacity	Rated Output	Weight (Approx.)
LFM-A-1KN	F_x : $\pm 1000\ \text{N}$ F_y : $\pm 1000\ \text{N}$ F_z : $\pm 1000\ \text{N}$ M_x : $\pm 50\ \text{N}\cdot\text{m}$ M_y : $\pm 50\ \text{N}\cdot\text{m}$ M_z : $\pm 25\ \text{N}\cdot\text{m}$	F_x : $\pm 1.5\ \text{mV/V}$ or more F_y : $\pm 1.5\ \text{mV/V}$ or more F_z : $\pm 1.8\ \text{mV/V}$ or more M_x : $\pm 4.0\ \text{mV/V}$ or more M_y : $\pm 4.0\ \text{mV/V}$ or more M_z : $\pm 2.4\ \text{mV/V}$ or more	160 g
LFM-A-3KN	F_x : $\pm 3000\ \text{N}$ F_y : $\pm 3000\ \text{N}$ F_z : $\pm 3000\ \text{N}$ M_x : $\pm 100\ \text{N}\cdot\text{m}$ M_y : $\pm 100\ \text{N}\cdot\text{m}$ M_z : $\pm 50\ \text{N}\cdot\text{m}$	F_x : $\pm 1.6\ \text{mV/V}$ or more F_y : $\pm 1.6\ \text{mV/V}$ or more F_z : $\pm 1.6\ \text{mV/V}$ or more M_x : $\pm 2.4\ \text{mV/V}$ or more M_y : $\pm 2.4\ \text{mV/V}$ or more M_z : $\pm 1.6\ \text{mV/V}$ or more	360 g

Dimensions



16-conductor ($0.11\ \text{mm}^2$) twisted pair vinyl shielded cable, 6.6 mm diameter by 55 cm long, bared at the tip



Original point and moment center of x-, y- and z-axes coincide with transducer height and circumferential center.

Note: The center hole (42 mm diameter) is to pass wires and the like. But do not contact wires or any metal part with the inner wall. Such contact deteriorates the performance characteristics while damaging the protective tape of the inner wall and the internal components of the transducer.