LFM-A

●Compact & lightweight ●1 & 3 kN

Compact 6-component Force Transducer

Compact
High sensitivity
Center hole type of 6-component force transducers

Enables simultaneous measurement of 3 components of force (Fx, Fy, Fz) in 3 axial directions orthogonal to the transducer and 3 moments (Mx, My, Mz) around the axes.
An 8-channel measuring instrument amplifies the transducer's 8 output components in strain quantity and calculates 6-component force. (Simplified output value conversion Excel file is attached.)
No special limits in the selection if the strain measurement device is able to output the measurement values to an Excel file. By using a dynamic recording software (DCS-100A) and basic arithmetic operations (DCS-101A) and setting the calculation formula*1, matrix operations (interference correction) can be carried out in real time. This is suitable for relatively simple test applications e.g. when setting a variety of test conditions for comparison purposes, etc.

*1 The equation is described in the instruction manual of LFM-A.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within ±0.5% RO
Hysteresis	Within ±0.5% RO
Interference	Within ±1.5% RO (After correction by interference compensated coefficients stated in the Test Data Sheet)
Rated Output	See table below.

Environmental Characteristics

Safe Temperature	-10 to 70°C (Non-condensing)
Compensated Temperature	0 to 60°C (Non-condensing)
Temperature Effect on Zero	Within ±0.05% RO/°C
Temperature Effect on Output	Within ±0.05%/°C

Electrical Characteristics

Safe Excitation	12 V AC or DC
Recommended Excitation	1 to 5 V AC or DC
I/O Resistance	350 Ω ±3%
Cable	16-conductor (0.11 mm²) twisted pair vinyl shielded cable, 6.6 mm diameter by 55 cm long, bared at the tip (Shield wire is not connected to the case.)

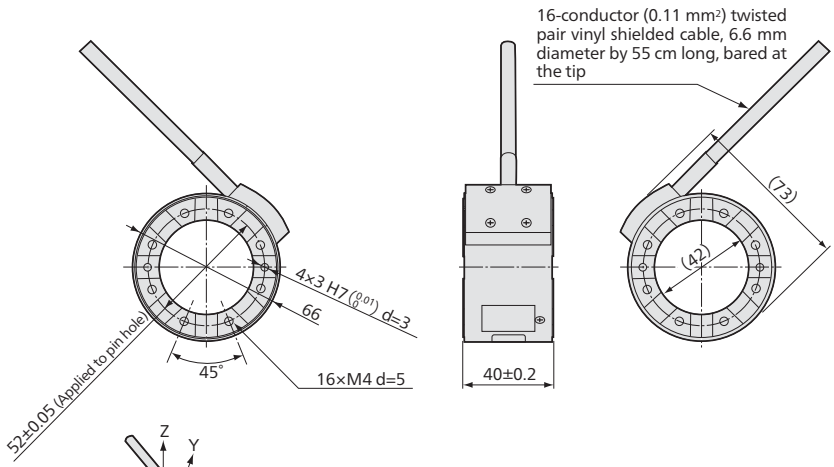
Mechanical Properties

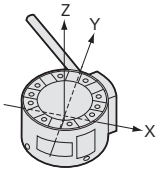
Safe Overloads	150%
Material	Main unit LFM-A-1KN: Aluminum
	Main unit LFM-A-3KN: SUS
	Cover: Black anode oxidized coated aluminum
	Cable holder: Anode oxidized coated aluminum
Weight	See table below.
Degree of Protection	IP40 (IEC 60529)

Models	Rated Capacity	Rated Output	Natural Frequencies (Approx.)	Weight* (Approx.)
●LFM-A-1KN	Fx: ±1 kN Fy: ±1 kN Fz: ±1 kN Mx: ±50 N·m My: ±50 N·m Mz: ±25 N·m	Fx: 1.5 mV/V or more Fy: 1.5 mV/V or more Fz: 1.8 mV/V or more Mx: 4.0 mV/V or more My: 4.0 mV/V or more Mz: 2.4 mV/V or more	5 kHz	160 g
●LFM-A-3KN	Fx: ±3 kN Fy: ±3 kN Fz: ±3 kN Mx: ±100 N·m My: ±100 N·m Mz: ±50 N·m	Fx: 1.6 mV/V or more Fy: 1.6 mV/V or more Fz: 1.6 mV/V or more Mx: 2.4 mV/V or more My: 2.4 mV/V or more Mz: 1.6 mV/V or more	5 kHz	360 g

●For delivery date, please contact us. *Excluding cable
*The rated output is interference compensated output.

■Dimensions





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

Note: The hole ϕ42 at center is for the cable to pass by. However, make sure not let the cable and others contact the inner surface of the hole. Otherwise, may down the performance of the LFM-A or even damage it.

To Ensure Safe Usage

Prepare a plate for installing the LFM-A with sufficient strength. It is recommendable that LFM-A-3KN should be applied on the steel plate whose thickness is more than 10 mm. With same reason, we recommend as follows. LFM-A-1KN should be applied on an aluminum alloy board which is not less than 15 mm thick. If the LFM-A is installed on a low rigid mounting plate, interference may be increased.