LFX-A

●With built-in amplifier ●1 & 3 kN

Compact 6-component Force Transducer with Built-in Amplifier

Compact
Built-in amplifiers
ϕ4 center hole for wiring

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. It outputs 6 voltage signals proportionated to 6 detected components.
By importing multiplication and addition operations into the control program using the attached interference correction factor via an AD converter, the device is able to support advanced and extensive applications such as drive control of test equipment, etc.
It measures the voltages of 6 components and outputs them to an Excel file after measurement, allowing the physical quantities of 6 components to be obtained.
(Simplified output value conversion Excel file is attached.)

Specifications

Performance

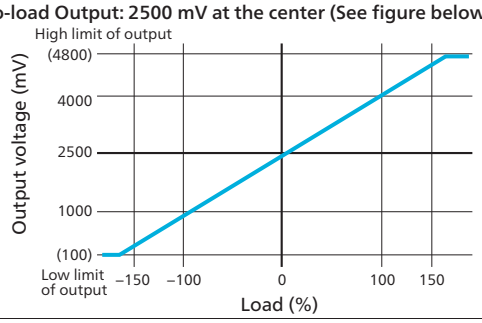
Rated Capacity	See table below.
Nonlinearity	Within ±0.5% RO
Hysteresis	Within ±0.5% RO
Interference	Within ±1.5% RO (After correction by interference compensated coefficients stated in the Test Data Sheet)
	*Output voltage signals of 6-component force should be compensated by using the interference compensated coefficients. The output interfere with each other.
Rated Output	Approx. 1500 mV (From 2500 mV output with no load at the center, after compensation)

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

No-load Output: 2500 mV at the center (See figure below.)



Cutoff Frequencies of AMP	500 Hz (Amplitude ratio at cutoff point -3 ±1 dB)
Power Supply	5 VDC ±10%, 160 mA or less
Cable	16-conductor (0.11 mm²) twisted pair vinyl shielded cable, 6.6 mm diameter by 55 cm long, bared at the tip (9 conductors) (Shield wire is not connected to the case.)

Mechanical Properties

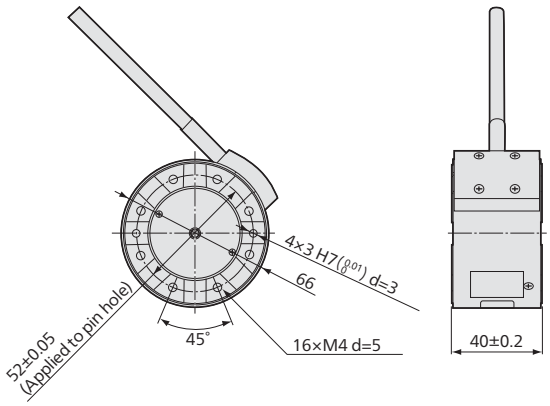
Safe Overloads	150%
Material	Main unit LFX-A-1KN: Aluminum Main unit LFX-A-3KN: SUS Cover: Black anode oxidized coated aluminum Cable holder: Anode oxidized coated aluminum
Weight	See table below.
Degree of Protection	IP40 (IEC 60529)

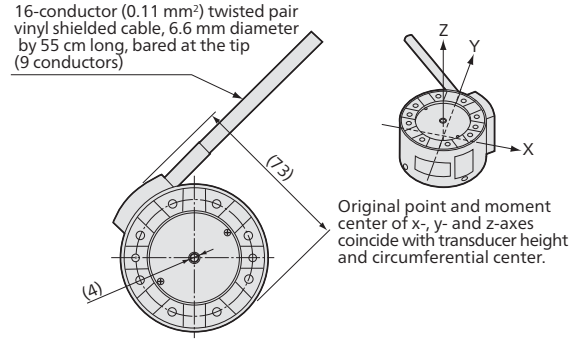
*To obtain the rated output of ±1500 mV for each of 6-component force, zero drift due to installation conditions including tightening and loading should be made within ±200 mV.

Models	Rated Capacity	Weight* (Approx.)
●LFX-A-1KN	Fx: ±1 kN Fy: ±1 kN Fz: ±1 kN Mx: ±40 N·m My: ±40 N·m Mz: ±25 N·m	210 g
●LFX-A-3KN	Fx: ±3 kN Fy: ±3 kN Fz: ±3 kN Mx: ±100 N·m My: ±100 N·m Mz: ±50 N·m	420 g

●For delivery date, please contact us. *Excluding cable

■Dimensions





To Ensure Safe Usage

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