

FMD Series

Force Measurement Test Frames - Dual Column

The FMD Series are dual column, bench-top testing systems that operate with our L2 Force Measure software; S2 Spring Test software; and L2 Plus Force Analysis software. L2 and S2 systems operate using a tablet computer and are ideal for high-volume, repetitive testing applications. L2 Plus systems operate using an all-in-one computer. The FMD test frames are available in three load capacities: 10kN, 30kN and 50kN. They can be used for tensile, compressive, cyclic, flexural, shear, creep and other common force measurement methods. FMD testers feature a granite base with all-metal columns and pre-loaded ball screws making them inherently stiff. Deflection compensation is included in our software so that extension control and measurements are precise, accurate and repeatable. Magnetic travel limits are adjustable to prevent over travel situations. Communication between the test frame and user interfaces is USB. Frames feature optional digital I/O. Data sampling is selectable between 5-1000Hz. FMD test frames may use ULC, MLC or FLC load cell sensors. Sensors are IEEE 1451.4 compliant. Frames may be fitted with optional splinter shield.

Features & Specifications

- Ideal for tension, compression, flexural, cyclic and shear testing applications
- Use with Starrett L2 Force Measure software or S2 Spring Measurement software on our Windows®-based tablet PC
- Use with Starrett L2 Plus Force Analysis software on our Windows®-based all-in-one computer
- Excellent load, displacement, speed and position accuracies
- Superior frame stiffness and position control
- ULC, MLC and FLC load cell sensors are IEEE 1451.4 compliant and supplied with a factory Certificate of Calibration
- Optional digital I/O
- Data sampling from 1 to 2000 Hz
- USB Communications
- Wide selection of test fixtures and accessories



FMD-50K Test Frame
Shown with optional test fixture and load cell sensor

Specifications

| FMD Series Force Measurement Frames | | | | |
|--|--------|--|--|--|
| Model Number | | FMD-10K | FMD-30K | FMD-50K |
| Load Capacity | kN | 10 | 30 | 50 |
| | kgf | 1000 | 3000 | 5000 |
| | lbf | 2250 | 6750 | 11,250 |
| Minimum Speed | mm/min | 0.05 | 0.05 | 0.05 |
| | in/min | 0.002 | 0.002 | 0.002 |
| Maximum Speed | mm/min | 1525 | 1525 | 752 |
| | in/min | 60 | 60 | 30 |
| Position Control Resolution | µm | 0.05 | 0.025 | 0.025 |
| | µin | 1.9 | 0.9 | 0.9 |
| Frame Axial Stiffness | kN/mm | 72 | 150 | 161 |
| | lb/in | 412,844 | 855,513 | 918,367 |
| Vertical Test Space ¹ | mm | 1270 | 1245 | 1220 |
| | in | 50 | 49 | 48 |
| Column Space | mm | 424 | 424 | 424 |
| | in | 16.7 | 16.7 | 16.7 |
| Total Crosshead Travel | mm | 1162 | 1137 | 1111 |
| | in | 45.75 | 44.75 | 43.75 |
| Accuracy Load Measurement | | Load Cell Sensor Dependent (See Notes) | | |
| Accuracy Position Measurement ² | | ±0.001 inch (±20 µm) | | |
| Accuracy Crosshead Speed | | +/-0.1% of set speed | | |
| Data Sampling | Hz | 5 to 2000 | | |
| Digital I/O (optional) | | 12 total channels Channel 1 & 2 for Power (5-24V) Channels 3 thru 10 for either digital inputs or outputs Channels 11 & 12 for Ground | | |
| Analog Inputs (optional) | | 1 channel @ +/- 10V | | |
| Analog Outputs (optional) | | 2 channels @ 0-10V | | |
| Electrical Phase | | 1 | 1 | 1 |
| Power Requirements | | 100, 120, 220, 230, 240Vac 10% | Single Phase Voltage (Vac) ±10% 220-240V | Single Phase Voltage (Vac) ±10% 220-240V |
| Maximum Power (VA) | Watts | 900 | 1250 | 1250 |
| Frequency | Hz | 50/60 | | |
| Operating Temperature | °C | +10° to +38°C | | |
| | °F | +50° to 100°F | | |
| Storage Temperature | °C | -40° to +66°C | | |
| | °F | -40° to 150°F | | |
| Humidity | | +10% to +90%, non-condensing | | |
| Total Height | mm | 1626 | 1626 | 1626 |
| | in | 64 | 64 | 64 |
| Total Width | mm | 787 | 787 | 787 |
| | in | 31 | 31 | 31 |
| Total Depth | mm | 736 | 736 | 736 |
| | in | 29 | 29 | 29 |
| Weight | kg | 136 | 192 | 225 |
| | lb | 300 | 425 | 500 |

Notes:

Load Measurement Accuracy

+/-0.1% of full scale supplied with factory Certificate of Calibration. May be calibrated on-site to +/-0.5% of reading down to 1/100 of load cell capacity per ASTM E4, ISO 7500/1 and EN 10002-2.

Compliance

Starrett test systems conform to all relevant European standards and carry the CE mark.

Specifications are subject to change without notice.

Notes

- Total vertical space is the distance from the top surface of the base plate to the bottom surface of the crosshead, excluding load cell sensor, test fixtures, and clevis adapter.
- Assumes Linear Error Correction and Deflection Compensation has been performed on test frame.

