

ESM303 MOTORIZED TEST STAND W/PC CONTROL

The ESM303 is a highly configurable motorized test stands for tension and compression measurements of up to 300 lbF (1.5 kN). The ESM303 offers a travel distance of 18". It can be controlled from the front panel or via a PC. Engineered on a unique modular platform, the stand can be configured in many different ways with its generous array of standard features as well as optional features that can be activated in the field. Integrated travel indication, overload protection, and a host of programmable parameters make the ESM303 the perfect test stand for quick, simple setup and testing in laboratory and production environments.

SPECIFICATIONS

| | |
|------------------------------------|--|
| LOAD CAPACITY: | |
| < 24 in (610 mm)/min: | 300 lbF (1.5 kN) |
| > 24 in (610 mm)/min: | 200 lbF (1 kN) |
| MAXIMUM TRAVEL DISTANCE: | 18 in (457 mm) |
| SPEED RANGE: | |
| Standard: | 0.5 - 13 in/min (13 - 330 mm/min) |
| Optional: | 0.02 - 45 in/min (0.5 - 1,100 mm/min) |
| SPEED SETTING ACCURACY: | ±0.2% |
| SPEED VARIATION WITH LOAD: | ±0% (Stepper motor driven) |
| LIMIT SWITCH REPEATABILITY: | 0.001 in (0.03 mm) |
| TRAVEL ACCURACY: | ±0.002 in (0.05 mm) |
| TRAVEL RESOLUTION: | 0.001 in (0.02 mm) |
| POWER: | 80-240 VAC, 50/60 Hz |
| WEIGHT: | 56 lbs (25.6 kg) |

ORDERING INFORMATION

| Model | Description |
|---------------------------|---|
| Test Stand Options | |
| ESM303 | Motorized test stand; 110 V |
| 09-1214 | Interface cable, gauge / indicator to ESM303 |
| 09-1158 | USB output cable |
| AC1062 | Load cell / indicator mounting kit |
| ESM303-001-1/-2/-3 | Single column extension, 6/12/24 in. (150/300/600 mm) |
| ESM303-002-1/-2/-3 | Double column extension, 6/12/24 in. (150/300/600 mm) |
| Controller Options | |
| AF008 | FollowMe™ force-based manual positioning |
| AF009 | Travel indication, with USB output |
| AF010 | Computer control, via USB |
| AF011 | Programmable travel limits |
| AF012 | Integrated overload protection |
| AF013 | Auto return |
| AF014 | Cycling / dwell time |
| AF016 | Independent up and down speeds |
| AF017 | Extended speed range, low |
| AF018 | Extended speed range, high |
| AF019 | Break detection |
| AF020 | Load holding |
| AF021 | Preload / sample touch |
| AF022 | Profiles |
| AFCOMP | Complete options package (includes all Controller Options, plus 09-1124 and 09-1158 cables) |

- ### STANDARD FEATURES
- **SELECTABLE SPEED SETTING**
 - **UPPER AND LOWER TRAVEL LIMIT SWITCHES**
 - **ADJUSTABLE, REMOVAL CONTROLLER WITH INTUITIVE MENU NAVIGATION**
 - **PASSWORD PROTECTION OF TEST PARAMETERS**
 - **STEPPER MOTOR-DRIVEN, PRODUCING SMOOTH AND QUIET OPERATION WITH NO SPEED VARIATION UNDER LOAD**
 - **USB OUTPUT OF FORCE VS. TIME OR FORCE VS. TRAVEL**
 - **COMPACT FOOTPRINT, SUITABLE FOR CROWDED WORKBENCHES**
 - **ERGONOMIC DESIGN, WITH SMART, CLEAN CABLE MANAGEMENT**
 - **INTEGRATED ELECTRONICS ASSEMBLY, EASILY REMOVED AND TRANSPORTED**



Note: ESM303 contains a universal power supply (80 - 240 V) and includes a power cord with US plug. Add suffix 'E' for Euro plug, 'U' for UK plug, or 'A' for Australian plug. Ex: ESM303E

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| Feature | Part No. | Description | Requirements |
|--------------------------------|----------|--|---|
| FollowMe™ | AF008 | Crosshead movement responds to manually pushing or pulling on the force gauge shaft or load cell. Increasing force produces greater speeds. Ideal for setups and quick positioning. | - Series 7 or 5 gauge or indicator with load cell - 09-1214 interface cable |
| Travel indication | AF009 | Travel is indicated on the control unit display, with output via USB. An internal scale utilizing Renishaw technology produces significantly higher accuracy than with conventional rotary encoderbased designs. Backlash and nonlinearity are virtually eliminated. | - Field hardware installation required. - If data output to a PC is required, add 09-1214 and 09-1158 cables, and a Series 7 or 5 gauge or indicator with load cell. |
| Computer control | AF010 | The ESM303 may be fully controlled by a PC through a custom-written program in any language supporting ASCII communications. Also responds to the legacy Chatillon TCD command set and legacy Nexygen TCD software (not available from Mark-10). | - Series 7 or 5 gauge or indicator with load cell - AF009 travel indication - AF011 programmable travel set points - 09-1214 interface cable - 09-1158 USB output cable |
| Programmable travel limits | AF011 | The stand stops at or cycles between programmable upper and lower travel distances. | - AF009 travel indication option |
| Overload protection | AF012 | Protects a force gauge or force sensor against overload. Program the desired percentage of full scale of the gauge. Adjustable analog voltage setting allows the stand to interface with virtually any gauge with analog output. | - Series 7 or 5 gauge or indicator with load cell - 09-1214 interface cable |
| Auto return | AF013 | The crosshead moves to a limit switch, force set point, travel position, or break, then stops and reverses direction at full speed to the opposite limit. | - If reversing at force set point: Series 7 or 5 gauge or indicator with load cell, and 09-1214 interface cable - If reversing at travel limit: AF011 programmable travel limits option - If reversing at break: AF019 break detection option and 09-1214 interface cable |
| Cycling / dwell times | AF014 | Same as auto return, but with the ability to program up to 100,000 cycles. Programmable dwell time for upper and lower limits (set independently) can be set up for up to 10,000 seconds.. | - Same as auto return, at the same speed in each direction. Add AF016 for independent up and down speeds. |
| Independent up and down speeds | AF016 | Individually configure speeds for the up and down directions. | - |
| Low speed range extension | AF017 | Extends the standard speed range down to 0.02 in/min (0.5 mm/min). | - |
| High speed range extension | AF018 | Extends the standard speed range up to 45 in/min (1,100 mm/min). | |
| Break detection | AF019 | Crosshead stops at a sudden drop in force. Programmable percentage of peak force. | - Series 7 or 5 gauge or indicator with load cell - 09-1214 interface cable |
| Load holding | AF020 | Dynamically adjusts the crosshead position to maintain a programmed load for an indefinite or specified period of time. | - Series 7 or 5 gauge or indicator with load cell - If a specified time is required, add AF014 cycling / dwell time option - 09-1214 interface cable |
| Preload / sample touch | AF021 | Stops the crosshead and/or zeroes the travel display at an initial preload - useful in tensile, compression, spring, elongation, and other applications. Preload is programmable as a percentage of force gauge/load cell full scale. Three modes: (1) stop, (2) stop and zero, and (3) zero without stopping. | - AF009 travel indication - Series 7 or 5 gauge or indicator with load cell - 09-1214 interface cable |
| Profiles | AF022 | Save and recall sets of test parameters, such as speeds, travel limits, preloads, etc. Up to 50 profiles may be stored. | |
| Complete options package | AFCOMP | Includes all functions listed above, plus 09-1214 interface cable and 09-1158 USB cable. Requires a Series 7 or 5 gauge or indicator with load cell. | |

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Dimensions in (mm)

