

The ESM-DC is an advanced motorized test stand offering all the mechanical specifications of the ESM. The stand has a capacity of 200 lbF, and is configurable in many positions to accommodate a wide variety of sample shapes and sizes. A manual fine adjustment knob allows for fine positioning of the crosshead position, and a stepper motor prevents speed variation with load, making testing more precise and repeatable.

The ESM-DC's controller adds a significant amount of sophistication, including an extended speed range, PC control capability, programmable cycling, auto return, overload protection, and other features.

## Features / Specifications

Maximum force: 200 lb [1kN]
Maximum travel: 13" [330 mm]
Speed range: 0.02 - 36 in/min [0.5 - 900 mm/min]
Speed accuracy: $\pm 0.2\%$ of setting, $\pm 0\%$ variation with load
Universal power supply: 80-250 VAC
Remote controller
Manual travel knob
Mounting holes for bench mounting
Removable base plate with 25 #10-32 threaded holes for fixture mounting
Base may be removed for alternative mounting
CE mark



The ESM-DC is shown in a typical tensile testing application, with Series 5 digital force gauge, digital travel display, limit switch kit, and wedge grips

## Optional Hardware

### ■ Digital travel display

6" [150 mm] travel, 0.0005" [0.01 mm] resolution, 0.001" [0.03 mm] accuracy, SPC output for automated data collection. For output of travel data to a PC, the following items are required: 09-1066 cable and MRS100A communication adapter.

### ■ Limit switch kit

Set of upper and lower adjustable solid state limit switches. Repeatable to within 0.001" [0.03 mm].

### ■ Column extensions

Available in 6 in (150 mm), 12 in (300 mm), 24 in (600 mm), and custom lengths

### ■ Multi-function cable, Series 5 or BG gauge to controller

Connects a Series 5 or Series BG force gauge to the controller. This single cable is used to transmit set points, overload signals, and force data.

### ■ Serial cable, controller to PC

Bi-directional communication with a PC for computer control. Also sends force data from the controller to a PC.

### ■ Serial cable, gauge to PC

Connects a Series 5 or Series BG force gauge with a PC. Bypasses the controller.

» Limit switch kit



» Digital travel display



## Controller Features

### ■ Computer Control

An RS-232 port is provided to interface with a PC. The ESM-DC accepts a number of commands pertaining to test stand motion and force gauge functions\*. The following additional items are required for PC control:

- Series 5 or Series BG force gauge
- 09-1056 serial cable (see Optional Equipment)
- 09-1143 multi-function cable (see Optional Equipment)

### ■ Overload Protection

Protects a force gauge against overload (requires a Series 5 or Series BG force gauge and 09-1143 multi-function cable). The user programs the desired percentage of full scale of the gauge. Adjustable analog output voltage setting allows the test stand to interface with virtually any force gauge with analog output.

### ■ Auto-return

The crosshead moves to a limit switch or force set point (requires a Series 5 or Series BG force gauge), stops, and reverses direction at maximum speed to the other limit switch or set point.

### ■ Cycling / Dwell Time

The crosshead moves up and down between limit switches or force set points (requires a Series 5 or Series BG force gauge). Configurable up to 99,999 cycles. Dwell time allows the operator to program the amount of time, up to 9,999.9 seconds, in 0.1 second intervals, for which the crosshead pauses at limits.

### ■ Programmable UP / DOWN Button Functions

UP and DOWN button operation can be configured in three user-configurable modes: Maintained: a short push produces continuous motion until STOP is pressed, Momentary: crosshead moves only while the button is pressed, and Auto: short push produces maintained motion, while holding down the button will produce momentary motion.

### ■ Independent Up and Down Speeds

Programmable independent speeds for up and down directions

### ■ Selectable Speed Units of Measurement (in/min & mm/min)

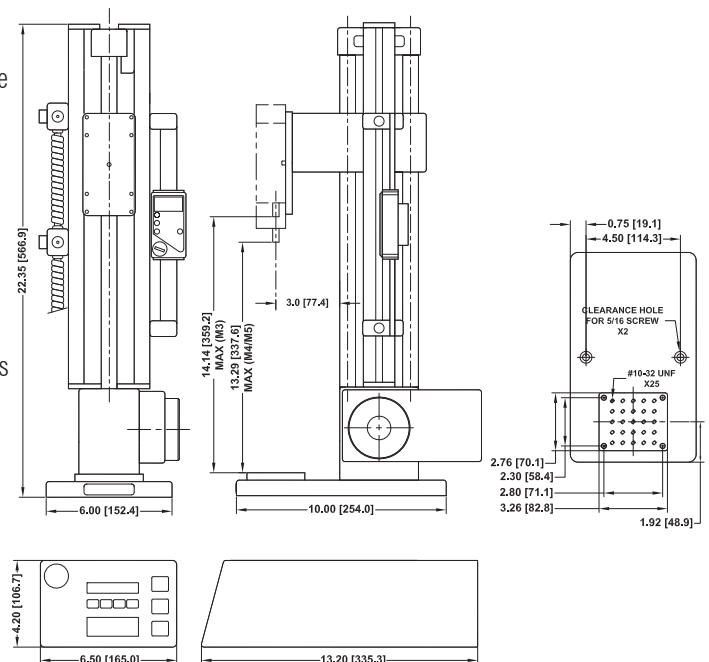
### ■ Password Protection

Prevents unauthorized changes to test parameters

\* Contains no integrated travel measurement. Travel information available only through the external ESM001 digital travel display, requiring an additional serial port on the PC. For an integrated solution with full PC control, including travel distance, see test stand model ESM301.

## Dimensions

in [mm]



## Ordering Information

Model No.	Description
ESM-DC	Motorized test stand, 110 V
ESM-DCE	Motorized test stand, 220 V
ESM001	Digital travel display
ESM002	Limit switch kit
ESM003-1	Column extension, 6"
ESM003-2	Column extension, 12"
ESM003-3	Column extension, 24"
09-1143	Multi-function cable, gauge to controller
09-1056	Serial cable, controller to PC
09-1048A	Serial cable, force gauge to PC
09-1066	Cable, travel display Mitutoyo
MRS100A	Communication adapter, Mitutoyo to RS-232

The ESM-DC is supplied with a tool kit, extension rod, small hook, medium hook, #10-32 coupler, and 2" dia. compression plate.