

# MARK-10

## ESM301

- TENSION & COMPRESSION
- CAPACITY: 300 lbf / 150 kgf / 1500 N
- CUSTOMIZED CONFIGURATION
- DIGITAL FORCE & TRAVEL DISPLAY
- OPTIONAL 11.5" OR 18" TRAVEL
- MESURgauge TESTING SOFTWARE



**ESM301**  
Motorized Force Test Stand with  
M5 Digital Force Gauge.

Made in America, the ESM301 provides tension and compression testing to 300 lbf / 150 kgf / 1500 N with many optional features for user selection.

Force Data is displayed by a wide selection of digital force gauges providing USB/RS232 computer data, overload protection and force set points.

Travel Data is displayed on the front panel with RS232 computer data available for data logging and force vs. distance graphing with MESURgauge Software.

- ESM301-BSC - Basic ESM 301 with standard features and option selection.
- ESM301-CPT - Complete with all Controller Options.

**Standard Features** - Included with all ESM301:

- UP, DOWN & STOP display and emergency stop button.
- Selectable speed units - in/min & mm/min.
- Speed Range: 0.5 - 13 in/min [13 - 330 mm/min] standard; others available.
- Stepper motor drive for 0% speed variation under load.
- Integral travel limit switches with added durability.

**Controller Options** - For initial selection or added later by field activation:

- **Travel Display** - The integrated linear scale travel sensor eliminates backlash and non-linearity with front panel display and RS232 data output.
- **Computer Control** - Bi-directional RS232 data transmission to and from a PC controls ESM301 from computer keyboard.
- **Programmable Travel Limits** - Force gauge stops at or cycles between programmed upper and lower limits.
- **Overload Protection** - By adding the 09-1143 Multi-Function Cable, the ESM301 will stop at the force level or % of force gauge capacity specified.
- **Auto-Return** - Force gauge travels to limit switch or programmed limit, stops and reverses at full speed to opposite limit.
- **Cycling/Dwell Time** - Same as Auto-Return, but with up to 100,000 cycles and dwell between cycles to 10,000 seconds.
- **Programmable Buttons** - Selectable up/down movement controls:
  - Continuous until stop is pressed.
  - Movement only on command.
  - Momentary or maintained movement.
- **Independent Up/Down Speeds** - Different or same up/down speeds.
- **Extended Speed Range** - Adds low and high to standard range:
  - Low: 0.02 -13 in/min [0.5 - 330 mm/min]
  - High: 0.5 - 45 in/min [13 - 1100 mm/min]

MODEL	DESCRIPTION	PRICE	MODEL	CONTROLLER OPTIONS	PRICE
ESM301-BSC	Motorized Test Stand 11.5" - Basic	2695*	ESM301-001	Travel Display & RS232 Output	\$750
ESM301L-BSC	Motorized Test Stand 18" - Basic	2995*	ESM301L-001	Travel Display & RS232 Output	950
ESM301-CPT	Motorized Test Stand - 11.5" - Complete	\$5720**	EF010	Bi-directional RS232 Computer Control	950
ESM301L-CPT	Motorized Test Stand 18" - Complete	6120**	EF011	Programmable Travel Set Points	550
09-1162	Cable, Multi-Function - Force Gauge to ESM301	125	EF012	Overload Protection	250
09-1056	Cable, Serial RS232 - ESM301 to PC	30	EF013	Auto Return	175
RSU100	Cable, USB Adapter - RS232 to USB to PC	125	EF014	Cycling / Dwell Time	250
15-1004	MESURgauge Force Testing Software	495	EF015	Programmable Button Operation	150
ESM301-002	Column Extension - 6", 12" Or 24"	275/325/375	EF016	Independent Up / Down Speeds	150
	* Basic - Includes ESM301 with standard speed and option selection.		EF017	Extended Speed Range - Low 0.02 - 13 in/min	175
	** Complete - Includes ESM301, all Cables and all Controller Options.		EF018	Extended Speed Range - High 0.5 - 45 in/min	175

- USB computer operation requires 09-1056 and RSU100 cables.
- ESM301 requires M5 Force Gauge—see next page.

- **Basic** - Options can be selected with initial order or added later by activation code.
- **Complete** - All options are included.

Prices and specifications are subject to change without notice.

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### Construction

- Stainless steel columns and cast aluminum base.
- Column length: 20" [508 mm] or 27" [686 mm].
- Stepper motor for constant speed under load.
- Removable base plate with 25 #10-32 holes.
- Vertical Clearance:
  - ESM301: 2" - 14" [102 - 356 mm]
  - ESM301L: 2" - 20" [102 - 508 mm]
- Maximum Travel:
  - ESM301: 11.5" [292 mm]
  - ESM301L: 18" [457 mm]
- Horizontal Clearance: 3" [76 mm].
- Speed range: 0.5- 13 in/min [13-330 mm/min] standard; others available.

### Power

- Universal input: 80-240 Vac, 50-60 Hz.

### Accessories

- 2" compression plate, small and medium hook, extension rod, force gauge mounting and tool kit.

### Operation

Load capacity: 300 lbf to 24 in/min [610 mm/min]  
200 lbf over 24 in/min [610 mm/min]

- 3 speed ranges.
- Up/Down at standard or selectable speeds.
- Auto-return.
- Selectable movement controls.
- Cycling between force set points, travel limits or limit switches.
- Overload protection of digital force gauge.
- Computer control.

### Accuracy

- Speed setting:  $\pm 0.2\%$  - constant speed under load.
- Limit switch repeatability: 0.001 in [0.03 mm].
- Speed variation under load:  $\pm 0\%$ .

### Weight & Dimensions

- ESM301: 35 lb. [16 kg]      ESM301L: 40 lb. [18 kg]
- ESM301: 25" [635 mm] H x 6.5" [165 mm] W x 13" [330 mm] D
- ESM301L: 32" [813 mm] H x 6.5" [165 mm] W x 13" [330 mm] D

### ESM DIGITAL FORCE GAUGES

### MODEL

### CAPACITY/GRADUATION

### PRICE



**M5**  
Advanced Digital Force Gauge

<b>M5-012</b>	0.12 x 0.00002 lbf	50 x 0.01 gf	0.5 x 0.0001 N	<b>\$1245</b>
<b>M5-025</b>	0.25 x 0.00005 lbf	100 x 0.02 gf	1 x 0.0002 N	<b>1245</b>
<b>M5-05</b>	0.5 x 0.0001 lbf	250 x 0.05 gf	2.5 x 0.0005 N	<b>1245</b>
<b>M5-2</b>	2 x 0.0005 lbf	1 x 0.0002 kgf	10 x 0.002 N	<b>1095</b>
<b>M5-5</b>	5 x 0.001 lbf	2.5 x 0.0005 kgf	25 x 0.005 N	<b>1095</b>
<b>M5-10</b>	10 x 0.002 lbf	5 x 0.001 kgf	50 x 0.01 N	<b>1095</b>
<b>M5-20</b>	20 x .005 lbf	10 x 0.002 kgf	100 x 0.02 N	<b>1095</b>
<b>M5-50</b>	50 x 0.01 lbf	25 x 0.005 kgf	250 x 0.05 N	<b>1095</b>
<b>M5-100</b>	100 x 0.02 lbf	50 x 0.01 kgf	500 x 0.1 N	<b>1095</b>
<b>M5-200</b>	200 x 0.05 lbf	100 x 0.02 kgf	1000 x 0.2 N	<b>1245</b>
<b>M5-500</b>	500 x 0.1 lbf	250 x 0.05 kgf	2500 x 0.5 N	<b>1245*</b>

\* Provides 300 lbf capability, overload protection is recommended – see 09-1143 Multi-Function Cable.

Force gauge mounting is provided for M5 to ESM301.

### MESURgauge - Force vs. Distance Testing Software



**Note:** MESURgauge demonstration CD or online download is available—contact Wagner Instruments.

**MESURgauge** is an innovative **force testing software** providing **easy set-up** and extremely user friendly **data logging and graphing of force vs. distance**. It is particularly useful for tensile testing, spring testing and many other applications.



**MESURgauge** captures RS232 data from force and digital travel gauges and displays it in tabular and graphical format. Force data is graphed versus time or distance with analysis of test results: statistical calculations, data export to Excel, custom reports and pass/fail indicators.

**MESURgauge** provides customized test set-ups and sequences and programs test start and stop for force, time, distance and sample break.

### MODEL

### DESCRIPTION

### PRICE

<b>15-1004</b>	MESURgauge Force Testing Software	<b>\$495*</b>
<b>FDIX/KI</b>	Key Injector Software - PC Software Link	<b>50**</b>

\* Feature rich force testing software - force vs. distance analysis.

\*\*Links data received at PC port to operational software, e.g., Excel, etc.

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