Motorized Tester Models ETM-F/A/M

- Indication range 0-50 N, 0-250 N, 0-500 N, 0-1,000 N, 0-3,000 N
- Motor driven with adjustable test speed
- Password protection of operational levels

General Information:

- Re-designed model series for tensile and compressive force measurements with high measurement accuracy and a simple control concept; durable construction.
- Available in three different versions (see overleaf table).
- Tester with motorized drive unit for precise and reliable measurements for test labs, production lines and quality assurance.
- Suitable for testing ready-made supply cables, plugs, components and ceramic work-pieces and also for tensile and compressive force tests in the field of material testing.
- Password protection between operating and programming levels can easily be activated.
- Display and operation via LED backlight QVGA TFT-touchscreen-display with pictograms, ca. 115×86 mm (5.7"). LCD update rate: 60 Hz.
- New maintenance-friendly drive.
- Optimized protection of linear guidance against dust.
- High internal measurement frequency and resolution to ensure the highest degree of accuracy.
- Tare-compensation.
- Set-point specification with acoustical warning (can be deactivated) and a color change of the display.
- 2 Operating modes:
  - Peak mode: displaying the highest measured force value of the entire measurement procedure,
  - Roll mode: displaying the current force value.
- Memory for measured values, including counter.
- Setup menu for parameter setting and adjustment; Several operational levels with password protection.
- Serial and optional Ethernet interface for data output; Interface for PC-Software mavSTATlight, mavSTAT, mavDATAex and mavGRAPH (ETM-M only), mavCALIB for calibrations in combination with a KMG force gauge.
- Optical and acoustical overload indication.
- Emergency break function when resistance is encountered during rewind.
- Shielding of force transducer and AD-converter against electromagnetic radiation (mobile phone interference etc.).
- ETM Testers have a constant or manually adjustable testing speed (depending on model), which is also displayed.
- Universal quick action clamps for tool fixture.

Model Overview ETM-F * ETM-A * ETM-M:

<table>
<thead>
<tr>
<th>Code</th>
<th>Indication Range [N]</th>
<th>Resolution [N]</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0 - 50</td>
<td>0.005</td>
</tr>
<tr>
<td>25</td>
<td>0 - 250</td>
<td>0.025*</td>
</tr>
<tr>
<td>50</td>
<td>0 - 500</td>
<td>0.05</td>
</tr>
<tr>
<td>100</td>
<td>0 - 1,000</td>
<td>0.1</td>
</tr>
<tr>
<td>300</td>
<td>0 - 3,000</td>
<td>0.3</td>
</tr>
</tbody>
</table>

*due to display resolution values are shown as .00; .03; .05; .08

Clamping Tools & Holding Fixtures:

- Clamping cones  SG 40, SG 80(V)
- Turntable  UNI-DT-2K
- Cable tensioner  MK-8, DKS-20
- Quick action clamps  KSH-6, KSP-8, SHA-12/-20, DES-10
- mm-plug gauge  ML1 for cable isolation pull-off testing
- Comb tools  KW 1, KW 2
- Miniature grips  FSEL, KSEL

For other tools, please see the catalogue.
Customized tools upon request.
Motorized Tester Models ETM-F/A/M

- Indication range 0-50 N, 0-250 N, 0-500 N, 0-1,000 N, 0-3,000 N
- Motor driven with adjustable test speed
- Password protection of operational levels

Technical Data:

Model designation: ETM.
Indication range: 0-50/250*/500/1,000/3,000 N.

Test units up to 1,000 N nominal load:
- Capacity: 0 - 50/250/500/1,000 N.
- Dimensions: W × D × H ca. 200 × 655 × 192 mm.
- Weight: ca. 25 kg.

Test unit with 3,000 N nominal load:
- Capacity: 0 - 3,000 N.
- Dimensions: W × D × H ca. 200 × 655 × 192 mm.
- Weight: ca. 25 kg.

Color: blue RAL 5019, cover plates in light grey.

Power supply: 30 V DC, via external power supply.

Drive: Stepping motor with linear drive.

Force Transducer:
- Strain gauge-load cell with integrated 16 bit AD-converter and configurable micro controller.

Evaluation:
- Different software features (see overview).
- Operating modes: roll and peak mode.
- Internal measuring frequency ca. 10,000 Hz.
- Zero point adjustment, tare-compensation.
- Optical and acoustical overload indicator.
- Set-value specification, optical and acoustical note.
- Password protected menu for parameter setting and adjustment.
- Single and list output via serial interface;
- Real-time clock for printouts with date and time.

Display and Operation:
- Multi-Touch- LED-Display, 5.7”, res. 370×240 pixels, LCD Update Rate: 60 Hz. All actuations and inputs via touchscreen. Clear overview of respective operating mode. Operating and programming levels with password protection.

Interface:
- RS232C adjustable 1,200-38,400 baud, 7/8 data bits, 1/2 stop bits, parity: n/e/o. Connector Sub-D (9-pin);
- Ethernet optional.

Additionally for the ETM-A and ETM-M models:
- Freely adjustable testing speed.
- Force pre-selection: 10-100% of device nominal load.
- Break-stop function: Automatic stop and return after breakage of test specimen.
- Cycle function: load slide moves back and forth between 2 end positions.
- The ETM-M model additionally features a precision force-displacement measuring system.

Optional Accessories:
- Tabletop printer including a data cable.
- Software mavDATAex, mavSTAT, mavSTATlight, mavGRAPH for ETM-M, mavCALIB for calibrations with the KMG.
- Control system KMG.
- Machine’s firmware can be updated by operator at no costs.
- Other supplies from the catalogue upon request.

Equipment

<table>
<thead>
<tr>
<th></th>
<th>ETM-F</th>
<th>ETM-A</th>
<th>ETM-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td>Tractive and compressive force measurements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indication</td>
<td>0-50/250*/500/1,000/3,000 N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement resolution</td>
<td>10,000 increments*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative deviation in recommended measuring range</td>
<td>≤ ± 0.25% of measured value +/-1 Digit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended measuring range</td>
<td>10-100% of nominal load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating modes</td>
<td>Peak- and roll-mode</td>
<td></td>
<td></td>
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<tr>
<td>Operation and display</td>
<td>Multi-Touch- LED-Display 5,7&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic zero point correction</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tare-compensation</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-point specification</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial interface for data output</td>
<td>● ● ●</td>
<td></td>
<td></td>
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<tr>
<td>Ethernet interface</td>
<td>- ○ ○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real time clock</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory space</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and listing output</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety components</td>
<td>Emergency stop button &amp; anti-pinch function in fast reverse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Testing speeds for all Models up to 1,000 N

| Adjustable | Freely adjustable | Freely adjustable |
| 25/75/100 | 5-800 | 5-800 |
| 150/600/800 | mm/min | mm/min | mm/min |

Pull/push rearrangement
- Reverse speed must be higher than testing speed; from firmware version 1.45 also via key switch

Linear stroke Max. 150 mm

| Memory (max. saved measured values) | 100 | 4,000 | 4,000 |
| Break-stop function | - ● ● |
| Cycle test | - ● ● |
| Force pre-selection for non-destructive testing | - ● ● |
| Holding under load, preset choices: destruction, back to normal (afterwards) | - 0-200sec 0-200sec |
| Force/displacement measurement | - - ○ |
| Repeat tests between two positions | - ● ○ |
| Software holding time up to max. 2,000 sec. | - - ○ |
| Software repeat test force | - ○ ○ |
| Software webserver | - ○ ○ |
| Software upgrade | to ETM-A |
| Firmware update | ● ● ○ |
| Tabletop printer DPN | ○ ○ ○ |

- not available * ○ optional, surcharge ** Standard

* Due to display resolution ETM25 shows values with: .00, .03, .05, .08.
** Smart speed control limits speed during tests at higher forces automatically for more precise Results

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Motorized Tester Models ETM-F/A/M

- Indication range 0-6,000 N, 0-10,000 N
- Motor driven with adjustable test speed
- Password protection of operational levels

General Information:

- Re-designed model series for tensile and compressive force measurements with high measurement accuracy and a simple control concept; durable construction.
- Available in three different versions (see overleaf table).
- Tester with motorized drive unit for precise and reliable measurements for test labs, production lines and quality assurance.
- Suitable for testing ready-made supply cables, plugs, components and ceramic work-pieces and also for tensile and compressive force tests in the field of material testing.
- Password protection between operating and programming levels can easily be activated.
- Display and operation via LED backlight QVGA TFT-touchscreen-display with pictograms, ca. 115×86 mm (5.7”). LCD update rate: 60 Hz.
- New maintenance-friendlier drive.
- Optimized protection of linear guidance against dust.
- High internal measurement frequency and resolution to ensure the highest degree of accuracy.
- Tare-compensation.
- Set-point specification with acoustical warning (can be deactivated) and a color change of the display.
- 2 Operating modes:
  - Peak mode: displaying the highest measured force value of the entire measurement procedure.
  - Roll mode: displaying the current force value.
- Memory space for measured values, including counter.
- Setup menu for parameter setting and adjustment;
  Several operational levels with password protection.
- Serial and optional Ethernet interface for data output;
  Interface for PC-Software mavSTATlità, mavSTAT, mavDATAex and mavGRAPH (ETM-M only), mavCALIB for calibrations in combination with a KMG force gauge.
- Optical and acoustical overload indication.
- Emergency break function when resistance is encountered during rewind.
- Shielding of force transducer and AD-converter against electromagnetic radiation (mobile phone interference etc.).
- ETM Testers have a constant or manually adjustable testing speed (depending on model), which is also displayed.
- Universal quick action clamps for tool fixture.

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</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>0 - 6,000</td>
<td>0.6</td>
</tr>
<tr>
<td>1,000</td>
<td>0 - 10,000</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Clamping Tools & Holding Fixtures:

- Clamping cones: SG 90
- Quick action clamps: SHA-40
- Interchangeable tool: WW-MAK
- Power strip: SL-BAT for battery cable terminals

For more tools and specifications please see the catalogue. Customized tools upon request.
Motorized Tester Models ETM-F/A/M

- Indication range 0-6,000 N, 0-10,000 N
- Motor driven with adjustable test speed
- Password protection of operational levels

Technical Data:

Model designation: ETM.
Indication range: 0 - 6,000/10,000 N.

Test units with 6,000 N / 10,000 N nominal load:
Capacity: 0 - 6,000/10,000 N.
Dimensions: W × D × H ca. 240 × 725 × 192 mm.
Weight: ca. 37 kg.
Color: blue RAL 5019, cover plates in light grey.
Power supply: 30 V DC, via external power supply.
Drive: Stepping motor with linear drive.

Force Transducer:
Strain gauge-load cell with integrated 16 bit AD-converter and configurable micro controller.

Evaluation:
- Different software features (see overview).
- Operating modes: roll and peak mode.
- Internal measuring frequency ca. 10,000 Hz.
- Zero point adjustment, tare-compensation.
- Optical and acoustical overload indicator.
- Set-value specification, optical and acoustical note.
- Password protected menu for parameter setting and adjustment.
- Single and list output via serial interface;
- Real-time clock for printouts with date and time.

Display and Operation:
Multi-Touch- LED-Display, 5.7”, res. 370x240 pixels, LCD Update Rate: 60 Hz. All actuations and inputs via touchscreen. Clear overview of respective operating mode. Operating and programming levels with password protection.

Interface:
RS232C adjustable 1,200-38,400 baud, 7/8 data bits, 1/2 stop bits, parity: n/e/o. Connector Sub-D (9-pin);
Ethernet optional.

Additionally for the ETM-A and ETM-M models:
- Freely adjustable testing speed.
- Force pre-selection: 10-100% of device nominal load.
- Break-stop function: Automatic stop and return after breakage of test specimen.
- Cycle function: load slide moves back and forth between 2 end positions.
- The ETM-M model additionally features a precision force-displacement measuring system.

Optional Accessories:
- Tabletop printer including a data cable.
- Software mavDATAex, mavSTAT, mavSTATlight, mavGRAPH for ETM-M, mavCALIB for calibrations with the KMG.
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<th>ETM-M</th>
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<tbody>
<tr>
<td>Measurement and drive system</td>
<td>Ttractive and compressive force measurements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indication range</td>
<td>6,000/10,000 N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement resolution</td>
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<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operating modes</td>
<td>Peak- and roll-mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation and display</td>
<td>Multi-Touch- LED-Display 5.7”</td>
<td></td>
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</tr>
<tr>
<td>Automatic zero point correction</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Tare-compensation</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Set-point specification</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Serial interface for data output</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Ethernet interface</td>
<td>-</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Real time clock</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Memory space</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Single and listing output</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Safety components</td>
<td>Emergency stop button &amp; anti-pinch function in fast reverse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing speeds **for all Models 6,000 N - 10,000 N</td>
<td>Adjustable 25/50/75/100/150/250 mm/min</td>
<td>Freely adjustable 5-250 mm/min</td>
<td>Freely adjustable 5-250 mm/min</td>
</tr>
<tr>
<td>Pull/push rearrangement</td>
<td>Reverse speed must be higher than testing speed: from firmware version 1.45 also via key switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear stroke</td>
<td>Max. 150 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory (max. saved measured values)</td>
<td>100</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Break-stop function</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cycle test</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Force pre-selection for non-destructive testing</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Holding under load, preset choices: destruction, back to normal (afterwards)</td>
<td>-</td>
<td>0-200sec</td>
<td>0-200sec</td>
</tr>
<tr>
<td>Force/displacement measurement</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Repeat tests between two positions</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Software holding time up to max. 2000 sec.</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Software repeat test force</td>
<td>-</td>
<td>-</td>
<td>○</td>
</tr>
<tr>
<td>Software webserver</td>
<td>-</td>
<td>○</td>
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<tr>
<td>Software upgrade to ETM-A</td>
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<tr>
<td>Firmware update</td>
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<tr>
<td>Tabletop printer DPN</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

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/** not available * ○ optional, surcharge * ● Standard**

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**Smart speed control limits speed during tests at higher forces automatically for more precise results.**

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