Screwdriving Technology
Automation
Air Motors
Air Tools

DEPRAG

Measurement devices for manual use

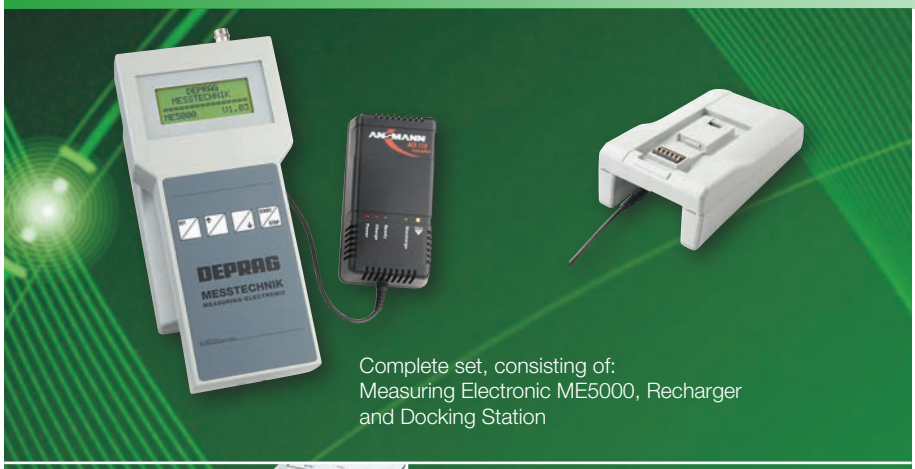
for precise highly dynamic torque measurement

- **precise highly dynamic torque measurement**
- **simple and safe handling**
- **controlled by micro-processor**

All measurement devices of the series ME for manual use in combination with our measurement transducer enable precise highly dynamic torque measurement.

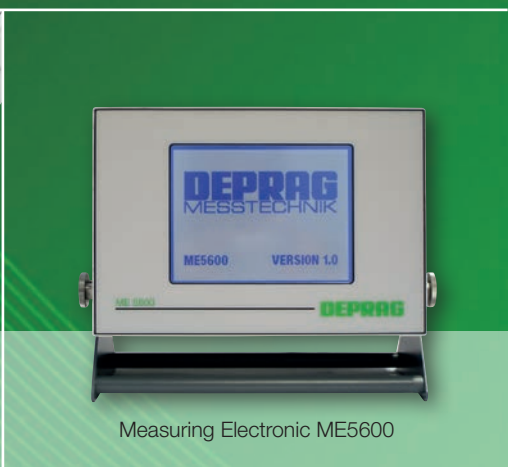
Example applications:
- torque setting, monitoring and control of screwdriving tools
- control and calibration of mechanical torque wrenches
- torque testing for stationary screwdrivers directly in the assembly station with-out removal of the screwdrivers
- inspection and documentation of assembly quality in accordance with standard DIN EN ISO 9001

MEASURING TECHNOLOGY



Complete set, consisting of:
Measuring Electronic ME5000, Recharger and Docking Station

Measuring Electronic ME5500/ ME6000/ME6100



Measuring Electronic ME5600

Operating modes of DEPRAG measurement devices

Our measurement tools can be operated in varying modes:

- **For individual measurement with display of the peak value** all received measurements are recorded and the highest individual value during the entire measurement period is issued as the measurement result.
- During the mode **measurement series** the peak values of several individual measurements are automatically summarised in a measurement series. From the measurement series the essential parameters, such as average X and standard deviation S, are calculated.
- **Individual measurement with display of the current value,** where the current torque measurement is always displayed (see measurement electronic ME5600).

DESCRIPTION

Functional principle of DEPRAG measurement devices

Functional principle of the measurement devices with each torque transducer:

- **Piezoelectric transducer** The electric charge given off by the transducer is transformed into an analogue measurement signal by a specially calibrated charge amplifier.
- **Strain gauge transducer** Measurement devices already have an analogue measurement signal on the transducer.
- **Torque transducer** The torque transducer creates output voltage of 0-5 volt, proportional to the torque.

All our measurement devices of the series ME5... and ME6... include measurement connections for the three above-mentioned transducers. Using a high resolution fast AD converter the torque values are also precisely registered and digitally displayed for highly dynamic tightening procedures.
The signal preparation is based on the new VDI guideline 2647. Of course all relevant measurement parameters are traceable to national standards. For each calibration you receive the relevant calibration certificate in accordance with DIN 17025. We also offer a comprehensive calibration service for regular inspection of your measurement device.
The software on the standard devices enables selection of the measurement unit (metric/inch) as well as the language (German/English).
All measurements can be read from the display and can be printed out (see optional accessories page 4) or read via a superior main computer depending on the version.

Torque measurement device ME5000

The mobile and compact measurement device ME5000 with integrated battery allows torque measurement independent of location or power supply. E.g. ideal to ascertain a screwdriver's optimal setting value directly on the assembly station.
A docking station and battery charger are included with the ME5000. The registered measurement values can be transmitted via a serial port on the docking station to a PC or printed on printer ND 40 (see accessories).

Torque measurement device ME5500

The measurement electronic ME5500 for connection to a PC is the ideal measurement device for stationary laboratory work stations. As well as all torque measurement functions, this software also enables you to carry out detailed screw analysis. This can display the complete cycle procedure "torque over a period of time" for a measurement series. The required graph analysis program is included as standard. The operation of this device, the display and printing of measurement values and the data processing is carried out directly on your PC, which is connected to the measurement device by a USB 2.0 port. Your advantage: You can flexibly process large amounts of data (e.g. with a normal statistic program) – all data is available on your PC as an ASCII-file.
The measurement electronic ME5500 can be used on Windows System 7, 8 and 10.

Torque measurement device ME5600

The measurement electronic ME5600 is the ideal measurement device for use on a mobile measuring station or in a measurement laboratory to carry out inspection and adjustment of screwdriving tools of all kinds on location.
Using the measurement electronic ME5600 the current torque value can be recorded and displayed. Another great advantage of the measurement electronic is the high resolution of the measurement data and the recording of large measurement series of up to 100 values.
All values are graphically displayed on the LC display. The device can be operated easily using the touch screen. Data can be printed on various printers (see accessories).

Torque measurement device ME6000 / ME6100

The measurement electronic ME6000 (measuring range up to 480 N·m) and the ME6100 (measuring range up to 1000 N·m) with a linearity of < 0.5% and accuracy of < ±0.5% FS have been added to the DEPRAG portfolio of torque measurement devices. They are high quality precision measurement devices which even have double the accuracy of the reliable ME5500 and are highly recommended for tasks where measurement accuracy of 0.5 % is desirable. This is imperative for torque below 0.5 N·m (for DEPRAG screwdriver families NANOMAT and MICROMAT).
The high resolution system of 15 bit is suitable for all torque transducers.
Small measurement ranges can be measured with high precision over a large range (min. 1:10).
As well as all functions for torque recording the software can also carry out detailed software analysis, which displays the cycle procedure "torque over period of time" of a measurement cycle. The required graph analysis program is included as standard. The software can be used on 32 and also 64 bit Windows Systems.
The operation of this device, the display and printing of measurement values and the data processing is carried out directly on your PC, which is connected to the measurement device by a USB 2.0 port. Your advantage: You can flexibly process large amounts of data (e.g. with a normal statistics program) – all data is available on your PC as an ASCII-file.

TECHNICAL DATA Measurement electronic ME5000/ME5500/ME5600/ME6000/ME6100

suitable for		PE transducer, strain gauge transducer, torque transducer				
Measuring Instrument	**Type** Part no.	**ME5000 *)** 385484A	**ME5500** 111604A	**ME5600** 201440A	**ME6000** [1)] 385565A	**ME6100** [1)] 106402A
Operating mode:						
– Peak value display		yes	yes	yes	yes	
– Prevailing torque-value display		no	yes	yes	yes	
– Measurement series with statistics X, S		yes (max. 40 series of 100 values each)	yes (up to 1000 values)	yes (up to 100 values)	yes (up to 1000 values)	
Total measuring range	N·m	depending on measuring transducer				
Number of measuring ranges		depending on measuring system				
Display		LC-display alphanumeric 4-lines 16 digits per line	External, standard PC-Monitor	LC-display graphic Touch screen	External, standard PC-Monitor	
Data output (for printer or PC)		SUB-D 9-pin RS 232 (9600 Baud)	ASCII-Data CSV-Data JPG, BMP	SUB-D 9-pin RS 232 (9600 Baud)	ASCII-Data CSV-Data JPG, BMP	
Connection for measuring transducer		8-pin connector / BNC connector				
Linearity	%	< 1	< 1	< 1	< 0.5	
Accuracy	% FS	< ± 1	< ± 1	< ± 1	< ± 0.5	
Electrical power supply		Rechargeable battery	Power unit 100 up to 240 Volt (50 or 60 Hz)	Power supply 85 up to 264 Volt (50 or 60 Hz)	Power unit 100 up to 240 Volt (50 or 60 Hz)	
Dimensions (W x H x D)	mm	106 x 224 x 40	132 x 84 x 194	225 x 200 x 140	132 x 84 x 194	
	in.	4 11/64 x 8 13/16 x 1 9/16	5 13/64 x 3 5/16 x 7 41/64	8 55/64 x 7 7/8 x 5 33/64	5 13/64 x 3 5/16 x 7 41/64	
Weight	kg / lbs	1 / 2.2	1.9 / 4.2	2.8 / 6.2	1.9 / 4.2	

* Software-Languages: German/English (Standard)
English/Czech (part no. 202043) please quote when ordering!

1) Measuring Instrument ME6000 in connection with MP1000PE: measuring range up to 480 N·m
Measuring Instrument ME6100 in connection with MP1000PE: measuring range up to 1000 N·m

Required Accessories:	**Connector cable** (see below) **- Measuring Transducer** (see leaflet D3020E).				
Connector cable to connect					
Measuring instrument with **Measuring Transducer**	**ME5000**	**ME5500**	**ME5600**	**ME6000**	**ME6100**
Piezo electric (PE) **Measurement device** **Measurement platform/wrench:** **MP1PE,** **MP2 PE,** **MP200PE or** **MS25PE-W**	810675 (5 m)	810675 (5 m)	810675 (5 m)	810675 (5 m)	810675 (5 m)
MP1000PE	810629 (1 m)	810629 (1 m)	810629 (1 m)	810629 (1 m)	810629 (1 m)
Strain gauge (DMS) **Measurement device** **Measurement platform/wrench:** **MP2DMS,** **MP7DMS,** **MP25DMS or** **MP160DMS**	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)
MP500DMS	385486A (2 m)* 385486B (4 m)* 385486C (6 m)*	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)
MS2DMS, **MS7DMS,** **MS7DMS-W or** **MS25DMS-W**	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)	385493A (2 m) 385493B (4 m) 385493C (6 m)
Torque transducer **(strain gauge, non-contact):** **V002-E6.3/F6.3,** **V005-E6.3/F6.3,** **V010-E6.3/F6.3 or** **V020-E6.3/F6.3**	385486A (2 m)* 385486B (4 m)* 385486C (6 m)*	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)	385486A (2 m) 385486B (4 m) 385486C (6 m)

* Additionally required: Power Supply part no. 800827 and Power Supply cable 230/115 V part no. 812587 / 812295

OPTIONAL EQUIPMENT

for Measuring Instrument		ME5000	ME5500	ME5600		ME6000/ ME6100
Software:						
DFQ-Interface for QS-STAT	Part no.	on request	on request	on request		on request
PC software	Part no.	832612	—	—		—
Connector cable (ME5000 - RS232)	Part no.	832415	—	—		—
Printer	**Type**	**ND40**		**ND40**	**ND350**	
	Part no.	200715A		200715A	112462A	
Technical Data:						
Print method		8-pin Printer		8-pin Printer	9-pin Printer	
Digits per line		40		40	> 100	
Print speed		approx. 2 lines/sec.	—	approx. 2 lines/sec.	approx. 2 lines/sec.	—
Print storage		0.5 KB		0.5 KB	2 KB	
Interface port		RS 232		RS 232	RS 232 / parallel	
Electrical power supply		5 V		5 V	230 V / 50 Hz	
Dimensions (W x H x D)	mm	160 x 42 x 106		160 x 42 x 106	385 x 135 x 300	
	in.	$6^{5}/_{16}$ x $1^{11}/_{16}$ x $4^{3}/_{16}$		$6^{5}/_{16}$ x $1^{11}/_{16}$ x $4^{3}/_{16}$	$15^{5}/_{8}$ x $5^{5}/_{16}$ x $11^{13}/_{16}$	
Weight	kg / lbs	0.35 / 0.8		0.35 / 0.8	4 / 8.8	
Included in delivery of printer:						
Paper roll (width 114 mm /$4^{31}/_{64}$ in.)	Part no.	200716		200716	–	
Paper		—	—	–	standard	—
Ribbon	Part no.	810633		810633	–	
Power Unit 100 - 240 V	Part no.	200717		200717	–	
Required accessories for printer: (Please order separately)						
Connector cable (measuring instrument – printer)	Part no.	349938B	—	349938B	included in delivery	—

At DEPRAG, we are committed to constantly improving our software solutions. To harness these benefits, we recommend regularly updating to the latest edition. For more information, please contact our service department at service@deprag.de.

Printer ND40

source: www.epson.de

Printer ND350

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