Torque Meter

840062

Instruction Manual

SPER
SCIENTIFIC   *Environmental Measurement Instruments*

CONTENTS

I. INTRODUCTION

This portable meter is used for bolt torquing, torque wrench calibration, switch or contact closure measurement and other industrial, QC, and materials testing applications. Features three units of measure as well as hold, peak, min-max, fast/ slow sampling, hi/low resolution auto power off and an RS232 computer interface.

II. METER DESCRIPTION
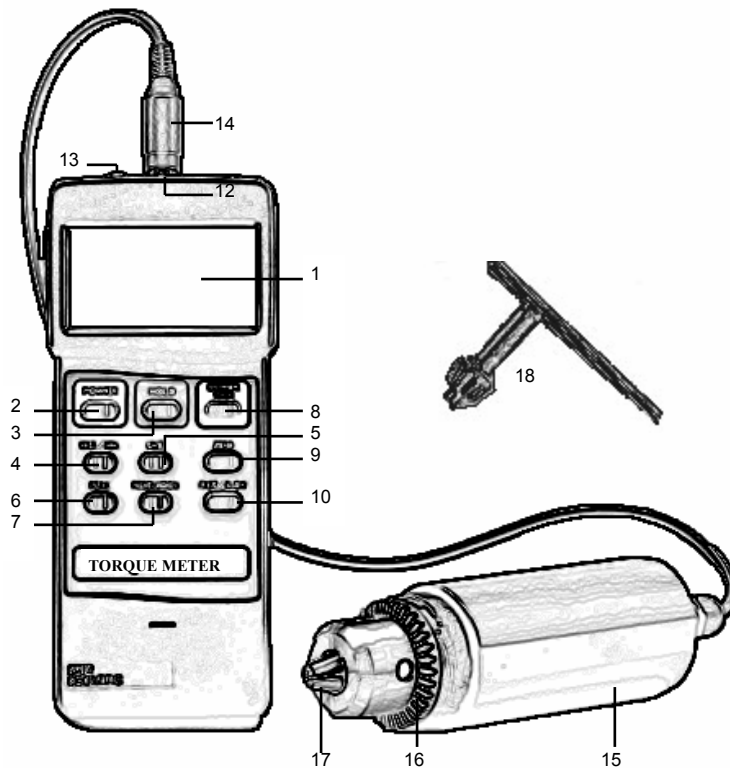
1. LCD Display	7. RESOLUTION Button	13. RS232 Output
2. POWER Button	8. SENSOR TYPE Button	14. Sensor Cable Plug
3. HOLD Button	9. ZERO Button	15. Torque Sensor Body
4. MAX/MIN Button	10. FAST/SLOW Button	16. Gear
5. UNIT Button	11. Battery Compartment	17. Cramp
6. PEAK Button	12. Sensor Input Socket	18. Pinion

III. OPERATING INSTRUCTIONS

1. Measurement Procedures

- Plug the **SENSOR CABLE PLUG** into the **SENSOR INPUT SOCKET.**

- Turn on the meter by pressing the **POWER** button.

- Press the **SENSOR TYPE** button to check that the meter's sensor type matches the external torque sensor. (ie: the LCD displays 15Kg cm.)

- Press the **UNIT** button to select the unit of measure: Kg cm, LB inch or Newton cm.

- Press the **RESOLUTION** button to select High or Low resolution.

| Unit of Measure	Max Range	High Res.	Low Res.	Accuracy
Kg cm	15	0.01	0.1	
Lb in	12.99	0.01	0.1	±1.5% + 5d
Newton cm	147.1	0.1	1	

- Press the **FAST/SLOW** button to select the sampling time. "F" is displayed for fast, "S" is displayed for slow.

- Connect the **CRAMP** to the object to be measured. Use the **PINION** to lock the **GEAR.**

- Before making your measurement, the LCD should display "0." If not, use the ZERO button to tare the unit.

- Apply the torque force. The LCD will indicate the measured value.

- Press the **PEAK button** to display and hold the peak value. The sampling time defaults to FAST and "F" will be displayed.

- During the measurement procedure, press the **HOLD** button to freeze the current measured value. The LCD will display the word: "HOLD." Press the **HOLD** button again to exit this function.

- Recording the Maximum and Minimum Readings

  - Press the **MAX/MIN** button once. "REC" appears on the LCD.

  - Press the **MAX/MIN** button again. "REC Max" and the maximum measurement appear on the LCD.

  - Press the **MAX/MIN** button again. "REC Min" and the minimum measurement appear on the LCD.

  - To exit the this function, press and hold the **MAX/MIN** button for at least 2 seconds, until the display reverts to the current reading.

2. Automatic Shut-off

Your meter has an automatic shut off function in order to prolong battery life. After approximately 10 minutes without activity (no buttons pushed), the meter will automatically shut off. To disable this feature, press the **MAX/MIN** button once during measurement. "REC" will be displayed.

3. Battery Replacement

Replace the battery when the low battery icon is displayed in the left corner of LCD. In-spec measurements may be made for several hours after the low battery indicator appears. Slide the battery cover away from the instrument, remove the battery and replace with a 9V battery (alkaline or heavy duty type). Close the battery cover.
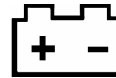
4. RS232 PC Serial Interface

The unit features an RS232 Output (2-2) via a 3.5 mm terminal. The output is a 16 digit data stream which can be adapted to the user's specific application. Optional RS232 Cable 840055, or an RS232 lead with the following connection is required to link the instrument with the computer:

Meter (3.5 mm jack plug)	PC (9W 'D" Connector)
Center Pin	Pin 2
Ground/shield	Pin 5

RS232 Settings:

- Baud Rate 9600
- No parity
- 8 Data bits
- 1 Stop bit

The 16 digits data stream will be displayed in the following format:	
D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0	
Each digit indicates the following status:	
D0	End Word
D1 to D8	Upper display reading, D1 = LSD, D8 = MSD

D9	Decimal point (DP), position 0 = No DP, 1 = 1 DP, 2 = 2 DP, 3 = 3 DP
D10	Polarity for the Display 0 = Positive (+) 1 = Negative (-)
D11 & D12	Anunuciator for upper display 01 = °C, 02 = °F, 08 = m/s, 09 = knot, 10 =Km/h, 11 = ft/min, 12 = mph
D13	Upper display data = 1, Lower display data =2
D14	4
D15	Start word = 02

IV. SPECIFICATIONS

Display	2.4 x 1.3" (61x34mm) 6" (15mm) digit size
Unit of Measure	Kg-cm, LB-inch and Newton-cm
Operating Temperature	32~122°F (0°~50°C)
Operating Humidity	Less than 80%
Power Supply	Alkaline or heavy duty type DC 9V battery
Power Consumption	Approximately DC 12 mA
Weight	Meter ½ lbs (225g), Probe 1½ lbs (665g)
Dimension	Meter 7x3x1½" (180x75x35mm) Probe 2" x 6¼" (48 x 160 mm)
Included Accessories	Hard carrying case, instruction manual, 15 kg/cm torque probe with a 4½' (140 mm) cable, pinion, and 9V battery

V. OPTIONAL ACCESSORIES

840055 - RS232 Cable
840090 - Water Resistant Instrument Pouch
840094 - USB Converter
850080 - Intelligent Software

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