

MTS-1030 CONDENSED SPECIFICATIONS

Power Supply

- 120 VAC/60 Hz version: Input range 100-130 VAC at 50-70 Hz
- 240 VAC/50/60 Hz version: Input range 220-260 VAC at 47-70Hz
- Internal 12VDC battery pack for 7-hour operation

Frequency Measurement

- Resolution:** 0.001 Hz for 8.000-9.999 Hz input
0.01 Hz for 10.00-99.99 Hz input
±0.1 Hz for 100.0-500.0 Hz input
- Accuracy:** ±0.01 Hz (low scale), ±0.1 Hz (high scale)
- Range:** 8.00 - 99.99 Hz (low scale)
8.0 - 500.0 Hz (high scale)
- Speed:** Measurement speed is dependent on input frequency
For 60 Hz inputs:
2 readings/sec in normal mode
7.5 readings/sec in high speed mode
For 50 Hz inputs:
1.6 readings/sec in normal mode
6.3 readings/sec in high speed mode

Time Measurement

Time (Seconds) Measurement

- Resolution:** 0.1 milliseconds
- Accuracy:** ±0.5 milliseconds (0-10 seconds)
±0.01% ± 1 LSD (10-9999 seconds)
- Range:** 0.0 ms - 9999sec, autoranging at the end of each decade

Time (Cycles) Measurement

- Resolution:** 0.1 cycles (lowest scale)
- Accuracy:** ± 0.1 cycles (lowest scale)
- Range:** 0.0 - 9999 cycles, autoranging at 999.9 cycles

Phase Measurement

- Resolution:** 0.01 degree for readings from -9.99° to 10.00°,
0.1 degree otherwise
- Accuracy:** ±0.5 deg down to 2V / 200 mA, reduced accuracy readings available to below 1V / 100 mA. 24 db/octave digital input filters maintain rated accuracy for signals with high harmonic content
- Range:** 0.0 to 360.0 degrees or ±180.0
- Speed:** Measurement speed is dependent on input frequency
For 60 Hz inputs:
2 readings/sec in normal mode
7.5 readings/sec in high speed mode
For 50 Hz inputs:
1.6 readings/sec in normal mode
6.3 readings/sec in high speed mode

Current Measurement

Any phase value, or phase-to-phase vector, as selected by front panel colour coded push buttons. True RMS, AC coupled via low-burden current transformers.

- Accuracy:** ±0.4% of reading ±0.15% of scale
- Range:** 0 - 2/20/200A, auto-ranging at 1.999, 19.99A
- Resolution:** 0.001/0.01/0.1A
- Max. Input:** 75 amps sustained, 125 amps for 5 seconds
- Speed:** 3 readings/sec, 30 readings/sec in high speed mode

Voltage Measurement

Any combination of phase-to-phase or phase-to-ground voltages, selected by front panel colour coded push buttons. True RMS, DC coupled. ABC/ACB phase rotation indicator LEDs included.

- Accuracy:** ±0.4% of reading ±0.15% of scale
- Range:** 0-20/200/2000V, autoranging at 19.99, 199.9V
- Resolution:** 0.01/0.1/1V
- Max. input:** 600 VAC sustained input
- Input impedance:** 2 megohms
- Speed:** 3 readings/sec, 30 readings/sec in high speed mode

Power Measurement

Power measurements are calculated by the internal microprocessor from the current, voltage and phase angle measurements.

Kilowatts

- Resolution:** up to 0.001 kWatt
- Accuracy:** ±0.8% at P.F. = 1
- Range:** -63.0 to +63.0 kW

Kilovars

- Resolution:** up to 0.001 kVAR
- Accuracy:** ±0.8% at P.F. = 0
- Range:** -63.0 to +63.00 kVAR

Kilovoltamperes

- Resolution:** up to 0.001 kVA
- Accuracy:** ±0.8%
- Range:** 0.0 - 63.00 kVA

Power Factor

- Resolution:** 0.001
- Accuracy:** ±0.004 for sinusoidal inputs
- Range:** -1.000 to 1.000

External Trigger

- Floating three terminal inputs for START and STOP triggers
- Change of state detection for contact or AC/DC voltage (30-300V).
- Contact inputs protected to 300V AC/DC
- Input impedance 60 kOhm minimum
- Selectable audio tone for continuity indication of stop trigger
- START trigger operation starts timer, increases update frequency of V, I, phase, and frequency readings
- STOP trigger stops timer, freezes all measurement reading

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RS-232C Serial Communications Port

Connector: Standard 25-pin female DB-25, DCE configuration
Data Format: 8 bits, no parity, 1 start bit, 1 stop bit
Speed: Standard rates from 110 to 9600 baud

- ✓ Facilitates communication with printers, terminals, computers, and other RS-232C devices
- ✓ Permits automated output and recording of all measurements
- ✓ Permits control of all meter functions for fully automated or semi-automated testing

Physical Characteristics

- ✓ Aluminum case and frame
- ✓ Moulded ABS plastic front/rear covers
- ✓ Integrated carry handle/tilt stand
- ✓ Large rear feet allow vertical operation
- ✓ Size: 14" W x 6" H x 10.5" D (35.56 cm W x 15.36 cm H x 26.88 cm D)
- ✓ Weight: 22.2 lbs/10.1 kg including battery

Options

- Option 01*** Cordura carry case
Padded case with shoulder strap and pockets for leads and manuals.
- Option 02** Snap-on lead case
Attractive, Cordura case snaps onto the top of the meter to carry leads, cords and accessories.
- Option 03** Impedance measurement
Direct display of impedance, based on $Z=V \div I$, $Z=V \div 2I$, or $Z=V \div \sqrt{3}I$ Replaces kVAR, kVA and P.F. display.
- Option 06** IEEE-488 interface.
- Option 08** W, VAR, VA display
Replaces kW, kVAR, kVA display with W, VAR, VA readings. Only display resolution is improved, not accuracy.
- Option 09** Ratio measurement
Replaces kVAR display with Channel 1/Channel 2 ratio measurement. This allows measurement of impedance (V/I), admittance (I/V), voltage ratio (V/V) and current ratio (I/I). The V/V and I/I measurements are useful for measuring turns ratio and gain.
- Option 10*** Synchrocheck
Provides an extra high speed phase measurement mode for checking phase angle when testing synchrocheck and synchronizing relays. The maximum reading speed is one reading per cycle, for 20 - 60 Hz inputs.
- Option 14*** Slip frequency measurement
Measures the difference in frequency between the Channel 1 & 2 inputs with up to 0.001Hz resolution. Useful for synchrocheck relay applications.

Options continued

- Option 15** Wh measurement
Replaces kVA display with Wh measurement for testing watt-hour meters.
- Option 17** Signal processing
Adds three measurement capabilities;
- 1) Low pass filter for Channel 1, inserts 5th order low pass filter in signal path to attenuate signals above 60 Hz at 30 db/octave. Eliminates all higher order harmonics from signal.
 - 2) Average response AC measurement on Channel A. Useful alternative to True RMS response, for such tests as second harmonic restraint and current transformer excitation.
 - 3) Peak hold and peak responding measurement for Channels 1 and 2. Captures and holds positive or negative peak signal with 1 millisecond response time. Can be calibrated for peak value or RMS equivalent. Extremely fast response useful for transient tests such as inrush measurement.
- Option 18*** Extended low level phase measurement
Extends 0.5 degree measurement accuracy for phase angle down to 4.5% of scale (0.9V or 0.09A minimum).
- Option 20** Hard-shell shipping case.
- Option 21** 10V Triggers
Reduced trigger voltage threshold to 10V (Standard is 30V).
- Option 22** 0-20amp input
Replaces high current input capability with 20A for improved accuracy of current measurement down to 20mA.
- Option 23** 240V, 50Hz Input.
- Option 24** Extra Manual.
- Option 25** 1 Year Extended Warranty
Additional year for a total of 2 years.

** These options are included at no cost on all new meters*