Mastech YQ-MS8360F

MGL MASTECH MS8360F Digital Multimeter User Manual

Model: MS8360F

Introduction

The MGL MASTECH MS8360F is a compact, high-performance digital multimeter designed for professional and home use. It offers a wide range of measurement functions including AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency, Duty Cycle, Diode, Continuity, Transistor hFE, and Non-Contact Voltage (NCV) detection. Its auto-ranging capability simplifies operation, while features like data hold, backlight, and low battery indication enhance usability.

Front view of the Mastech MS8360F Digital Multimeter, showing the display, rotary switch, and input jacks.

Safety Information

WARNING: Read and understand all safety warnings and operating instructions before using this instrument. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always ensure the test leads are properly connected and the function switch is set to the correct range before making any measurements.
- Do not exceed the maximum input values for any range.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as these pose a shock hazard.
- Before measuring current, ensure the circuit is de-energized and the multimeter is connected in series with the load.
- Always disconnect the test leads from the circuit before changing the function switch position.
- Replace batteries when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter if it appears damaged or if the test leads are damaged.

Product Components

The Mastech MS8360F package typically includes the following items:

- Mastech MS8360F Digital Multimeter
- Test Leads (Red and Black)
- 1x 9V 6F22 Battery (included)
- Multi-function Socket (for hFE testing)
- Quick Start Guide
- Calibration Certificate

Image showing the Mastech MS8360F multimeter, test leads, battery, and documentation included in the package.

DIGITAL MULTIMETER

MS8360F

SKU NO.: MS8360FCBGLO
UPC CODE: 810053676783
EAN CODE: 8435394785325

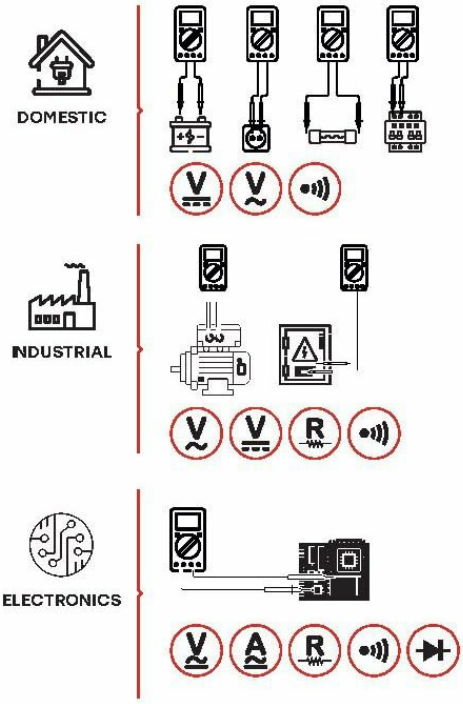
FEATURE

- Auto & Manual Ranging.
- Auto Power Off.
- Relative Measurement.
- Non-Contact Voltage Detector.

SPECIFICATIONS

AC Voltage 600V	DC Voltage 600V	AC Current 10A
DC Current 10A	Resistance 40MΩ	Continuity <50±20Ω
Capacitance 200μF	Frequency 10MHz	Display Counts 4000

MAIN APPLICATIONS



CONTENTS

- 188×92×50mm 7.4"×3.6"×2.0" 380g/0.83lb
- 1×9V 6F22 Battery
- ACCESSORIES: Test leads, Multi-function socket, Battery
- Calibration Certificate
- QSG: Quick Start Guide

PACKAGING INFORMATION

- **Color Box** L165×W70×H225mm
- **Carton Box** 47×37.5×35.5cm
- X 20PCS

Diagram illustrating the main applications and contents of the Mastech MS8360F package.

Setup

Battery Installation

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment cover on the back of the unit.
3. Use a screwdriver to remove the screw securing the battery cover.

4. Carefully remove the cover.
5. Insert the 9V 6F22 battery, observing the correct polarity (+ and -).
6. Replace the battery cover and secure it with the screw.

Rear view of the Mastech MS8360F multimeter, indicating the location of the battery compartment.

Operating Instructions

This section details how to use the Mastech MS8360F for various measurements. Always ensure the meter is set to the correct function and range before connecting to a circuit.

General Operation

- **Power ON/OFF:** Rotate the central switch to the desired function to turn the meter on. Rotate to "OFF" to turn it off.
- **Auto Power Off:** The meter will automatically power off after approximately 15 minutes of inactivity to conserve battery life. Press any button or rotate the function switch to resume operation.
- **Data Hold:** Press the "HOLD" button to freeze the current reading on the display. Press again to release.
- **Backlight:** Press the "LIGHT" button (often combined with another function button) to turn the display backlight on/off.
- **Relative Measurement (REL):** Press the "REL" button to store the current reading as a reference value. Subsequent readings will be displayed as the difference from this reference.
- **MAX/MIN:** Press the "MAX/MIN" button to record the maximum and minimum values during a measurement session.

Measuring DC Voltage (V–)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "V–" position.
3. Connect the test leads across the component or circuit to be measured, observing polarity.
4. Read the voltage value on the display.

Measuring AC Voltage (V–™)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "V–™" position.
3. Connect the test leads across the component or circuit to be measured.
4. Read the voltage value on the display.

Measuring DC Current (mA–, µA–, A–)

1. **IMPORTANT:** Turn off power to the circuit before connecting the meter.
2. For currents up to 400mA, insert the red test lead into the "mA" jack. For currents up to 10A, insert the red test lead into the "10A" jack. Insert the black test lead into the "COM" jack.
3. Rotate the function switch to the appropriate "mA–", "µA–", or "A–" position.
4. Connect the meter in series with the circuit where current is to be measured.
5. Turn on power to the circuit.
6. Read the current value on the display.
7. **IMPORTANT:** Turn off power to the circuit before disconnecting the meter.

Measuring AC Current (mA–™, µA–™, A–™)

1. Follow the same steps as for DC Current, but select the "mA–™", "µA–™", or "A–™" position on the function switch.

Measuring Resistance (Ω)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "Ω" position.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

Measuring Capacitance (F)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "CAP" position.
3. Discharge the capacitor completely before testing.
4. Connect the test leads across the capacitor.
5. Read the capacitance value on the display.

Measuring Frequency (Hz) and Duty Cycle (%)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "Hz%" position.
3. Connect the test leads across the signal source.
4. Read the frequency or duty cycle value on the display. Use the "FUNC" button to toggle between Hz and %.

Diode Test (→|–)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "→|–" position.
3. Connect the red lead to the anode and the black lead to the cathode of the diode.
4. Read the forward voltage drop. Reverse the leads to check for open circuit (OL) for a good diode.

Continuity Test (ᛋ)

1. Insert the red test lead into the "V–™Hz%" jack and the black test lead into the "COM" jack.
2. Rotate the function switch to the "→|–" position. Press the "FUNC" button to select continuity mode (indicated by a buzzer icon).
3. Connect the test leads across the circuit or component.
4. If resistance is less than approximately 50Ω, the buzzer will sound, indicating continuity.

Transistor hFE Test

1. Rotate the function switch to the "hFE" position.
2. Insert the transistor's Emitter, Base, and Collector leads into the corresponding holes in the multi-function socket (NPN or PNP).
3. Read the hFE value on the display.

Non-Contact Voltage (NCV) Detection

1. Rotate the function switch to the "NCV" position.
2. Move the top tip of the multimeter near a live AC voltage source (e.g., an electrical outlet or wire).
3. The meter will beep and the NCV indicator light will flash if AC voltage is detected. The frequency of beeps and flashes increases with stronger voltage.

Maintenance

Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input terminals free of dirt or debris.

Battery Replacement

When the low battery indicator appears on the display, replace the battery immediately to ensure accurate readings. Refer to the "Battery Installation" section under Setup for instructions.

Storage

If the meter is not to be used for a long period, remove the battery to prevent leakage and damage to the meter. Store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.

Troubleshooting

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed battery.	Check battery polarity or replace battery.
"OL" (Overload) displayed.	Input value exceeds selected range or meter's maximum capacity.	Select a higher range or ensure input is within meter's specifications.
Inaccurate readings.	Low battery, incorrect range, or damaged test leads.	Replace battery, select appropriate range, or inspect/replace test leads.
No continuity beep.	Continuity mode not selected, or resistance is too high.	Press FUNC button to select continuity mode. Check resistance value.

Specifications

The following table outlines the key technical specifications for the Mastech MS8360F Digital Multimeter:

Features

- Display 4000 counts
- Auto and Manual Ranging
- Auto Power Off
- Relative Measurement
- Non-Contact Voltage Detector
- Transistor hFE 0~1000
- Diode Open Voltage 1.5V
- Continuity Buzzer <50±20Ω
- Data Hold
- Display Backlight
- Low Battery Display

Specifications	Range	Resolution	Accuracy
DC Voltage	400mV/4V/40V/400V 600V	0.1mV/1mV/10mV/0.1V 1V	±(0.5%+2) ±(0.8%+5)
AC Voltage	400mV 4V/40V/400V 600V	0.1mV 1mV/10mV/0.1V 1V	±(1.2%+20) ±(0.8%+3) ±(1.0%+5)
DC Current	400μA/4000μA/40mA/400mA 10A	0.1μA/1μA/10μA/0.1mA 10mA	±(0.8%+2) ±(1.2%+2)
AC Current	400μA/4000μA/40mA/400mA 10A	0.1μA/1μA/10μA/0.1mA 10mA	±(1.5%+2) ±(2.0%+2)
Resistance	400Ω/4kΩ/40kΩ/400kΩ/4MΩ 40MΩ	0.1Ω/1Ω/10Ω/0.1kΩ/1kΩ 10kΩ	±(1.0%+3) ±(1.2%+15)
Capacitance	5nF/50nF/500nF 5μF/50μF/200μF	1pF/10pF/0.1nF 1nF/10nF/1μF	±(4.0%+15) ±(4.0%+15)
Frequency	10Hz/100Hz/1kHz/10kHz 100kHz/1MHz/10MHz	0.001Hz/0.01Hz/0.1Hz/1Hz 10Hz/0.1kHz/1kHz	±(4.0%+15) ±(4.0%+15)
Duty Cycle	1%~99%	0.1%	±(2.0%+5)

Detailed specifications including range, resolution, and accuracy for various measurement functions.

Feature	Detail
Display	4000 counts
Ranging	Auto and Manual Ranging
Auto Power Off	Yes
Relative Measurement	Yes
Non-Contact Voltage Detector	Yes

Feature	Detail
Transistor hFE	0~1000
Diode Open Voltage	1.5V
Continuity Buzzer	<50±20Ω
Data Hold	Yes
Display Backlight	Yes
Low Battery Display	Yes
Power Source	1x 9V 6F22 Battery
Dimensions (L x W x H)	188 x 92 x 50 mm (7.4 x 3.6 x 2.0 inches)
Weight	380g / 0.83lb
Safety Rating	CAT III 600V

DIGITAL MULTIMETERS

AUTO RANGING

CAT II CAT III CAT IV						
Model	MS8340A	MS8360F	MS8360G	MS8361D	MY68	MY78
Page	75	76	77	78	79	80
Safety Rating	CAT III 1000V	CAT III 600V	CAT III 600V	CAT III 600V	CAT II 1000V CAT III 600V	CAT II 1000V CAT III 600V
Display Counts	6000	4000	4000	4000	4000	4000
Auto Ranging	•	•	•	•	•	•
Auto Power Off	•	•	•	•	•	•
True RMS				•		
DC Voltage	1000V	600V	600V	600V	1000V	600V
AC Voltage	750V	600V	600V	600V	700V	600V
DC Current	10A	10A	10A	10A	10A	10A
AC Current	10A	10A	10A	10A	10A	10A
Resistance	60MΩ	40MΩ	40MΩ	40MΩ	40MΩ	40MΩ
Capacitance	400μF	200μF	4000μF	99.99mF	200μF	200μF
Frequency	10MHz	10MHz	10MHz	10kHz	100kHz	200kHz
Duty Cycle	•	•	•	•		•
Type K Temparature	-10~700°C 14~1292°F		-20~1000°C -4~1832°F			
Battery Test						
Diode	•	•	•	•	•	•
Continuity	•	•	•	•	•	•
Display Backlight	•	•	•	•		
Work Light						
Data Hold	•	•	•	•	•	•
NCV		•	•	•		
Inductance						
hFE Transistor				•	•	•
Dual Display						
MAX						
MAX/MIN	•		•			
MAX/MIN/AVG						
Relative Measurement	•	•	•	•		•
Peak Measurement						
Low Pass Filter	•					
AC/DC Current (For Clamp)						•
Low Impedance						
Bar Graph			•			
Interface				Wireless		

Comparison table of Mastech digital multimeters, highlighting auto-ranging features and safety ratings.

Warranty and Support

The Mastech MS8360F Digital Multimeter comes with a 1-year limited warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or service inquiries, please contact Mastech customer service through their official channels. Refer to the contact information provided in your product packaging or on the official Mastech website.

Please retain your purchase receipt as proof of purchase for warranty purposes.

Product packaging indicating a 1-year limited warranty.

Product Model: MS8360F