

**NEW**

**YOKOGAWA** 

# Reliable and Convenient for Maintenance Digital Multimeter

**TY500 series Built-in Memory Type TY530/Standard Type TY520**

## Based on Safe Design, Supporting Various Maintenance Applications

### •High Precision

- Basic accuracy 0.09%
- True RMS measurement

### •Ensured Field Site Safety

- Conforms to safety standards EN61010-1  
1000V CAT. III, 600V CAT. IV
- Safety shutters for preventing erroneous insertion  
of test leads into current measurement terminals

### •New Functions for Yokogawa Middle Class DMMs

- Current direct reading function provided by current clamp sensor (optional)
- Low-pass Filter (LPF)
- Logging-mode memory for 1600 data\*
- USB communication, application software\*  
(Optional DMM communication package)  
\*TY530 only

### •Closed Case Calibration



Built-in Memory Type

**TY530**



Standard type

**TY520**

Yokogawa Meters & Instruments Corporation

LF TY700/TY500-E

## Model and Specification Code

Name	Model
Digital Multimeter	TY520
	TY530

## Optional Accessories

Name	Model	Specification
DMM communication package	92015	USB communication adapter + USB communication cable + Application software
Communication package for printer	97016	Printer adapter + Printer cable
Printer	97010	Thermal printer Paper width 112mm
AC adapter for printer	94005	AC 100V ± 10%
	94006	For Printer, Europe
Thermal printing paper	97080	10 rolls (1 set)
Test leads	98015	1000V CAT III, 600V CAT IV Red/black (1 set)
Test leads with Alligator Clip	99014	1000V CAT III, 600V CAT IV Red/black (1 set)
Fuse	99015	440mA/1000V (1 piece/1 unit)
	99016	10A/1000V (1 piece/1 unit)
TC-K temperature probe	90050	-50 to 600°C (For liquids)

Name	Model	Specification
TC-K temperature probe	90051	-50 to 600°C (For liquids)
	90055	-20 to 250°C (For surfaces)
	90056	-20 to 500°C (For surfaces)
Current clamp probe	96001	For 400A, AC Output: 10mV/A, AC
	96030	200A, AC
	96031	500A, AC
	96032	700A, AC
	96033	50A, AC
	96034	3000A, AC
	96035	3000A, AC
Carrying case	93029	Hard type (Houses the DMM, the test leads and communication cable)

## TY500 General Specifications

**Measurement Functions** :DC Voltage, AC voltage, DC current, AC current, resistance, frequency, temperature, capacitance, continuity check, diode test For AC voltage/current, RMS/MEAN detection can be switched (TY530 only).  
Low-pass filter can be switched on/off

**Additional Functions** :Data hold/auto hold/range hold, maximum/minimum/average values (TY530 only), resistance, relative and percentage value calculation, memory function (TY530 only), communication function (TY530 only), logging-mode memory (TY530 only), auto power off, backlight

**Display** :3.5-digit LCD: ..... 7-segment  
Digital display: ..... {6000} counts  
Bar graph display: ..... 31-segment  
Polarity indicator: ..... "-" appears when the polarity is negative  
Overrange indicator: ..... "OL"  
Low-battery indicator: ..... "+" appears at or below the minimum operating voltage.

**Measuring Rate** :5 times/sec (Frequency: 1 time/sec, Capacitance: max. 0.14 times/sec (1000µF), Resistance: 2.5 times/sec, Temperature: 0.7 times/sec), Bar graph display: 25 times/sec (DC voltage, diode test: 5 times/sec)

**Operating Temp. and Humidity** :-10 to 55°C; 80% RH or less (no condensation) 40 to 55°C; 70% RH or less

**Storage Temp. and Humidity** :-30 to 70°C; 70% RH or less (no condensation)

**Temperature Coefficient** :Add the accuracy 0.1%/°C to the basic accuracy at a temperature within -10 to 18°C and 28 to 55°C.

**Power Supply** :Four AA (R6) dry cells

**Battery Life** :Approx. 300 hours (for continuous DC voltage measurement with alkaline cells)

**Withstanding Voltage** :6.88kV for 5 seconds (between input terminals and casing)

**Dimensions** :Approx. 90(W) x 192(H) x 49(D) mm

**Weight** :Approx. 570g (including batteries)

**Compliance with Standards** :Safety EN61010-1, EN61010-031, 1000V CAT III, 600V CAT IV, pollution level 2, 2000m max. above sea level  
EMC: EN61326-1 Class B, EN55011 Class B Group 1

**Standard Accessories** :AA (R6) dry cells: 4, Test lead set (98015): 1, Fuse (installed) 440mA/1000V and 10A/1000V, Instruction manual: 1

## Performance

**Test conditions: Temperature and humidity = 23 ± 5°C, 80% RH or less; Accuracy = ± (% rdg + dgt).**  
**Note: A response time is the time required for achieving the accuracy specified for the corresponding range.**

### DC Voltage Measurement (≒V)

Range	Resolution	Accuracy TY520, TY530	Input Resistance	Maximum Input Voltage
600mV	0.1mV	0.09+2	10MΩ	1000V DC 1000V rms AC
6V	0.001V		11MΩ	
60V	0.01V		10MΩ	
600V	0.1V			
1000V	1V	0.15+2		

NMRR: 60dB or greater for 50/60Hz ± 0.1%  
CMRR: 120dB or greater for 50/60Hz (Rs = 1kΩ) Response time: 1 second or less

### AC Voltage Measurement (≈V)

Range	Resolution	Accuracy		Input Impedance	Maximum Input Voltage
		50/60Hz	40-500Hz		
600mV	0.1mV	0.5+5	1+5	10MΩ, <200pF	1000V rms AC 1000V DC
6V	0.001V			11MΩ, <50pF	
60V	0.001V			10MΩ, <50pF	
600V	0.01V				
1000V	0.1V				

Shown above is the accuracy at 5 to 100% of range (200 to 1000V for 1000V range, peak 1500V or less). Response time: 2 seconds or less  
Add accuracy = ±(2% of reading + 2% of F.S.), except for sinusoidal wave. CMRR: 60dB or greater for DC to 60Hz (Rs = 1kΩ), 4 counts or less is corrected to 0.

### Resistance Measurement (Ω)

Range	Resolution	Accuracy	Maximum Testing Current	Open-circuit Voltage	Input Protection Voltage
600Ω	0.1Ω	0.4+1*	<1.2mA	<3.5V	1000V rms
6kΩ	0.001kΩ		<110µA		
60kΩ	0.01kΩ		<13µA		
600kΩ	0.1kΩ		<1.3µA		
6MΩ	0.001MΩ	0.5+1	<130mA	<1.3V	1000V rms
60MΩ	0.01MΩ	1+2(0-40MΩ) 2+2(40-60MΩ)			

\*1: Accuracy after zero calibration for 600Ω to 6kΩ range. Response time: 2 seconds or less for 600Ω to 600kΩ, 10 seconds or less for 6MΩ to 60MΩ.

### Frequency Measurement (Hz)

Range (auto-ranging)	Resolution	Accuracy	Input Voltage Range
10.00 - 99.99Hz	0.01Hz	0.02+1	0.2 - 600V rms
90.0 - 999.9Hz	0.1Hz		0.4 - 600V rms
0.900 - 9.999Hz	0.001kHz		0.8 - 100V rms
9.00 - 99.99kHz	0.01Hz		

AC coupling, Maximum effective display: 9999

### DC Current Measurement (≈A)

Range	Resolution	Accuracy	Voltage Drop	Maximum Input Current
600µA	0.1µA	0.2+2	<0.12mV/µA	440mA fuse-protected
6000µA	1µA		<3.3mV/mA	
60mA	0.01mA		0.5+5	<0.1V/A
600mA	0.1mA			10A fuse-protected
6A	0.001A			
10A	0.01A			

Maximum testing current at 600mA of range is 440mA. Response time: 1 second or less.

### AC Current Measurement (≈A)

Range	Resolution	Accuracy		Voltage Drop	Maximum Input Current
		50/60Hz	40Hz - 1kHz		
600µA	0.1µA	0.75+5	1.5+5	<0.12mV/µA	440mA fuse-protected
6000µA	1µA			<3.3mV/mA	
60mA	0.01mA			<0.1V/A	
600mA	0.1mA				
6A	0.001A				
10A	0.01A				

Shown above is the accuracy at 5 to 100% of range (2 to 10A for 10A range). Response time: 3 seconds or less

Add accuracy = ±(2% of reading + 2% of F.S.), except for sinusoidal wave. 4 counts or less is corrected to 0.

### Diode Test(▷)

Range	Resolution	Accuracy	Testing Current (Vf=0.6V)	Open-circuit Voltage	Input Protection Voltage
2V	0.001V	1+2	Approx. 0.5mA	<3.5V	1000V rms

### Continuity Check(⊘)

Range	Resolution	Accuracy	Testing Current (Vf=0.6V)	Open-circuit Voltage	Input Protection Voltage
600Ω	0.1Ω	Buzzer sounds at 50+30Ω or less	Approx. 1.2mA	<3.5V	1000V rms

### Capacitance(▶)

Range	Resolution	Accuracy	Input Protection Voltage
10nF	0.01nF	2+10*	1000V rms
100nF	0.1nF		
1µF	0.001µF	2+5	
10µF	0.01µF		
100µF	0.1µF	3+5	
1000µF	1µF		

\*1: Accuracy after zero calibration for 10nF to 1µF range.

### Temperature Measurement (TEMP)

Range	Resolution	Accuracy	Input Protection Voltage
-50 - 600°C	0.1°C	2+2°C	1000V rms

Temperature probe: Type K thermocouple sensor (optional)

## TY Series Common Accessories



92015 DMM communication package (TY720, TY710, TY530)



97016 Communication package for printer (TY720, TY710, TY530)



98015 Test leads



99014 Test leads with Alligator Clip



97010 Printer



90055 TC-K temperature probe



96001 Current clamp probe



93029 Carrying case

## Current Clamp Probes

Name	96036	96033	96030	96031	96032	96034	96035
Current Clamp Probe							
Measurable Conductor Diameter	dia. 40mm	dia. 18mm	dia. 30mm	dia. 30mm	dia. 65mm	dia. 65 x 100mm	dia. 170mm
Measurement Range	2A, AC	50A, AC	200A, AC	500A, AC	700A, AC (1000A for 5 minutes)	1000A, 2000A, 3000A, AC	300 - 3000A, AC
Output Voltage	50mV, AC	500mV, AC	500mV, AC	500mV, AC	250mV, AC	500mV, AC	500mV, AC
Accuracy	±0.5% of rdg	±0.5% of rdg	±0.5% of rdg	±0.5% of rdg	±1.0% of rdg	±1.0% of rdg	±1.0% of rdg
Frequency Range	20Hz - 5kHz	20Hz - 20kHz	20Hz - 20kHz	20Hz - 5kHz	45Hz - 66Hz	10Hz - 20kHz	10Hz - 20kHz
Maximum Circuit Voltage	50V, AC	300V, AC	600V, AC	600V, AC	600V, AC	600V, AC	1000V, AC (pri)