

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

NEW

YOKOGAWA 

High Accuracy & Performance Digital Multimeter

TY700 series Advanced Type TY720/Standard Type TY710

Most Reliable Handheld DMM

Highest Precision

- Basic accuracy 0.020%
- True RMS measurement

New Functions for Electronic and Industrial Use

- Simultaneous measurement and display of DC and AC
- Switchable RMS/MEAN detection*
- Low-pass Filter (LPF)*
- AC50mV range*
- Lo-Power resistance measurement* *TY720 only

Full Support for Data Management

- A large-capacity logging-mode memory TY720: 10,000 data TY710: 1,000 data
- USB communication, application software (Optional DMM communication package)

Safe Design and Wide Temperature Range for Harsh Use

- 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
- Operating temperature range -20 to +55°C
- Storage temperature range -40 to +70°C

Closed Case Calibration



Advanced type
TY720

Standard type
TY710



Yokogawa Meters & Instruments Corporation

LF TY700/TY500-E

Model and Specification Code		Optional Accessories		
Name	Model	Name	Model	Specification
Digital Multimeter	TY710	DMM communication package	92015	USB communication adapter + USB communication cable + Application software
	TY720	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	100V CAT II, 600V CAT III Red/black (1 set)
		Test leads with Alligator Clip	99014	100V CAT III, 600V CAT IV Red/black (1 set)

TY700 General Specifications

Measurement Functions :DC voltage, AC voltage, DCV+ACV, DC current, AC current, DCA+ACA, resistance, frequency, temperature, capacitance, duty cycle, decibel calculation, continuity check, diode test, low-power resistance (TY720 only)
For AC voltage/current, RMS/MEAN detection can be switched (TY720 only).
For AC voltage/current, the low-pass filter can be turned on/off (TY720 only).
Additional Functions :Data hold/auto hold/peak hold (TY720 only), range hold, maximum/minimum/average values resistance, capacitance zero, relative and percentage value calculation, manual-mode memory, logging-mode memory, auto power off, backlight (white LED)
Display :5-digit LCD:7-segment
Digital display:Main display; [50,000] counts
Sub-display; [50,000] counts
Bar graph display:51-segment
Polarity indicator:“-” appears automatically when the polarity is negative
Overrange indicator:“OL”
Low-battery indicator:“” appears at or below the minimum operating voltage.

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.

Range	Resolution	Accuracy TY710, TY720	Input Resistance	Maximum Input Voltage
50mV	0.001mV	0.05+10	Approx. 100MΩ	1000V DC
500mV	0.01mV	0.02+2		
2400mV	0.1mV	0.025+5	10MΩ	1000V rms AC
5V	0.0001V	0.025+5		
50V	0.001V	0.03+2		
500V	0.01V			
1000V	0.1V			

NMR: 80dB or greater for 50/60Hz ± 0.1%At 50mV of range, 70dB or greater for 50/60Hz ± 0.1%
CMR: 100dB or greater for 50/60Hz(Rs=1kΩ) Response time: 0.3 seconds or less

Range	Resolution	Accuracy (Upper: TY710, Lower: TY720, the display of “—” is not specified)					Input Impedance	Maximum Input Voltage
		10 - 20Hz	20Hz - 1kHz	1k - 10kHz	10k - 20kHz	20k - 50kHz		
50mV	0.001mV	2+80 ²	0.4+40 ²	5+40 ²	5.5+40 ²	15+40 ²	11MΩ<50pF	1000V rms AC 1000V DC
500mV	0.01mV							
5V	0.0001V	1.5+30 ¹	0.7+30 ¹	2+50 ²	—	—	10MΩ<50pF	1000V rms AC 1000V DC
50V	0.001V	1+30 ¹	0.4+30 ¹	1+40 ¹	2+70 ²	5+200 ²		
500V	0.01V							
1000V	0.1V							

*1: At 5 to 100% of range *2: At 10 to 100% of range CMR: 80dB or greater for DC to 60Hz(Rs= 1kΩ) Response time: 1 second or less

Range	Resolution	Accuracy TY720			Input Impedance	Maximum Input Voltage
		10 - 20Hz	20 - 500Hz	500 - 1kHz		
50mV	0.001mV	4+80 ²	1.5+30 ²	5+30 ²	11MΩ<50pF	1000V rms AC 1000V DC
500mV	0.01mV					
5V	0.0001V	2+30 ¹	1+30 ¹	3+30 ¹	10MΩ<50pF	1000V rms AC 1000V DC
50V	0.001V					
500V	0.01V					
1000V	0.1V					

*1: At 5 to 100% of range *2: At 10 to 100% of range CMR: 80dB or greater for DC to 60Hz (Rs = 1kΩ) Response time: 1 second or less

Range	Resolution	Accuracy (Upper: TY710, Lower: TY720, the display of “—” is not specified)				Input Impedance	Maximum Input Voltage
		DC, 10 - 20Hz	DC, 20k - 1kHz	DC, 10k - 50kHz	DC, 50k - 100kHz		
5V	0.0001V	1.5+10 ¹	1+10 ¹	2+10 ²	—	11MΩ<50pF	1000V rms AC 1000V DC
50V	0.001V	1.5+10 ¹	0.5+10 ¹	1+10 ¹	2+10 ²		
500V	0.01V				5+20 ²	10MΩ<50pF	1000V rms AC 1000V DC
1000V	0.1V						

*1: At 5 to 100% of range *2: At 10 to 100% of range CMR: 80dB or greater for DC to 60Hz (Rs = 1kΩ) Response time: Approx. 2 seconds

Range	Resolution	Accuracy		Maximum Testing Current	Open-circuit Voltage	Input Protection Voltage
		TY710	TY720			
500kΩ	0.01kΩ	0.1+2 ¹	0.05+2 ¹	<1mA	<2.5V	1000V rms
5kΩ	0.0001kΩ			<0.25mA		
50kΩ	0.001kΩ			<25μA		
500kΩ	0.01kΩ			<2.5μA		
5MΩ	0.0001MΩ			<1.5μA		
50MΩ	0.001MΩ			<0.13μA		

*1: Accuracy after zero calibration Response time: 1 second or less for 500kΩ to 500kΩ, 5 seconds or less for 5MΩ to 50MΩ

Range	Resolution	Accuracy		Maximum Testing Current	Open-circuit Voltage	Input Protection Voltage
		TY720	TY720			
5kΩ	0.001kΩ	0.2+3	0.2+3	<10μA	<0.7V	1000V rms
50kΩ	0.01kΩ			<1.0μA		
500kΩ	0.1kΩ			<0.6μA		
5MΩ	0.001MΩ			<0.05μA		

Range	Resolution	Accuracy		Testing Current	Open-circuit Voltage	Input Protection Voltage
		TY710, TY720	TY720			
500kΩ	0.1kΩ	Buzzer sounds at 100 ± 50kΩ or less.		Approx. 0.5mA	<5V	1000V rms

YOKOGAWA

Yokogawa Meters & Instruments Corporation

World Wide Web site at <http://www.yokogawa.com/MCC>

Tachihli Bld. No.2, 6-1-3 Sakaecho, Tachikawa-shi, Tokyo, 190-8586 Japan
Phone: +81-42-534-1413 Facsimile: +81-42-534-1426

Phone: +1-770-253-7000 Facsimile: +1-770-251-2088
Phone: +31-334-64-1611 Facsimile: +31-334-64-1610
Phone: +65-6241-9933 Facsimile: +65-6241-2606
Phone: +55-11-5681-2400 Facsimile: +55-11-5681-1274/4434
Phone: +82-2-551-0660 Facsimile: +82-2-551-0665
Phone: +61-2-8870-1100 Facsimile: +61-2-8870-1111
Phone: +91-80-4158-6000 Facsimile: +91-80-2852-1441
Phone: +86-21-6880-8107 Facsimile: +86-21-6880-4987
Phone: +973-358100 Facsimile: +973-336100
Phone: +7-095-737-7868 Facsimile: +7-095-737-7869

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[Ed: 01/b]

Printed in Japan:Nov.2008(B)/3000(GT)

Measuring Rate :6 times/sec (Frequency: 1 time/sec, Capacitance: max. 0.03 times/sec (50mF), Resistance: 4 times/sec)
Bar graph display: 15 times/sec

Operating Temp. and Humidity :-20 to 55°C; 80% RH or less (no condensation) 40 to 55°C; 70% RH or less

Storage Temp. and Humidity :-40 to 70°C; 70% RH or less (no condensation)

Temperature Coefficient :Add the accuracy 0.05%/C to the basic accuracy at a temperature within -20 to 18°C and 28 to 55°C. For continuous measurements, add 1 digit/°C for DC voltage (DCV) and DC current (DCA). (Add 3 digits/°C for 50mV, 5A, and 10A ranges)

Power Supply :Four AA (R6) dry cells

Battery Life :Approx. 120 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. 560g (including batteries)

Compliance with Standards :Safety EN61010-1, EN61010-031, 1000V CAT III, 600V CAT IV, pollution level 2, indoor, 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

Range	Resolution	Accuracy TY710, TY720	Voltage Drop	Maximum Input Current
500μA	0.01μA	0.2+5	<0.11mV/μA	440mA fuse-protected
5000μA	0.1μA			
50mA	0.001mA	1+20	<4mV/mA	10A fuse-protected
500mA ^d	0.01mA	0.6+10		
5A	0.0001A	0.6+5	<0.1VA	
10A	0.001A			

Response time: 0.3 seconds or less *3: Maximum testing current at 500mA of range is 440mA

Range	Resolution	Accuracy (Upper: TY710; Lower: TY720; the display of “—” is not specified)			Voltage Drop	Maximum Input Current
		10 - 20Hz	20Hz - 1kHz	1k - 5kHz		
500μA	0.01μA	1.5+20	1+20	—	<0.11mV/μA	440mA fuse-protected
5000μA	0.1μA					
50mA	0.001mA	1+20	0.75+20	1+30	<4mV/mA	10A fuse-protected
500mA ^d	0.01mA					
5A	0.0001A	1.5+20	1+20	—	<0.1VA	
10A	0.001A	1.5+20	1+20	2+30		

Shown above is the accuracy at 5 to 100% of range (10 to 100% for 10A range). Response time: 1 second or less
*3: Maximum testing current at 500mA of range is 440mA.

Range	Resolution	Accuracy TY720			Voltage Drop	Maximum Input Current
		10 - 20Hz	20 - 500Hz	500Hz - 1kHz		
500μA	0.01μA	2+20	1.5+20	2+30	<0.11mV/μA	440mA fuse-protected
5000μA	0.1μA					
50mA	0.001mA				<4mV/mA	10A fuse-protected
500mA ^d	0.01mA					
5A	0.0001A	3+20	2+20	4+30	<0.1VA	
10A	0.001A					

Shown above is the accuracy at 5 to 100% of range (10 to 100% for 10A range). Response time: Approx. second or less
*3: Maximum testing current at 500mA of range is 440mA.

Range	Resolution	Accuracy (Upper: TY710; Lower: TY720; the display of “—” is not specified)				Voltage Drop	Maximum Input Current
		DC, 10 - 20Hz	DC, 20Hz - 1kHz	DC, 1k - 5kHz	DC, 10k - 100kHz		
500μA	0.01μA	2+10	1.5+10	—	<0.11mV/μA	440mA fuse-protected	
5000μA	0.1μA						
50mA	0.001mA	1.5+10	1+10	1.5+10	<4mV/mA	10A fuse-protected	
500mA ^d	0.01mA						
5A	0.0001A	2+10	1.5+10	—	<0.1VA		
10A	0.001A	2+10	1.5+10	3+10			

Shown above is the accuracy at 5 to 100% of range (10 to 100% for 10A range). Response time: Approx. 2 seconds *3: Maximum testing current for 500mA of range is 440mA.

Range	Resolution	Accuracy TY710, TY720	Testing Current (VI = 0.6 V)	Open-circuit Voltage	Input Protection Voltage
2.4V	0.0001V	1 + 2	Approx. 0.5mA	<5V	1000V rms

Range	Resolution	Accuracy TY710, TY720	Input Protection Voltage
-200 - 1372°C	0.1°C	1+1.5°C	1000V rms

Temperature probe: Type K thermocouple sensor (optional)

Range	Resolution	Accuracy TY710, TY720	Input Protection Voltage
5nF	0.001nF	1+5 ¹	1000V rms
50nF	0.01nF		
500nF	0.1nF		
5μF	0.001μF		
50μF	0.01μF		
500μF	0.1μF	2+5	
5mF	0.001mF	3+5	
50mF	0.01mF		

*1: Accuracy after zero calibration

Range (auto-ranging)	Resolution	Accuracy TY710, TY720
2.000 - 9.999Hz	0.001Hz	0.02+1 ¹
9.00 - 99.99Hz	0.01Hz	
90.0 - 999.9Hz	0.1Hz	
9.000 - 9.999kHz	0.001kHz	
9.00 - 99.99kHz	0.01kHz	

*1: At 10 to 100% of input voltage or current range
*2: At 40 to 100% of input voltage or current range

Range	Resolution	Accuracy TY710, TY720
10 - 90%	1%	± 1% ¹

*1: For input of a square wave with a frequency within 10.00 to 500.0Hz. At 40 to 100% of input voltage or current range

Range	Accuracy TY720	Response Time
DCV, DCA	± 100 digit	>250μs

Model and Specification Code		Optional Accessories		
Name	Model	Name	Model	Specification
Digital Multimeter	TY520	DMM communication package	92015	USB communication adapter + USB communication cable + Application software
	TY530	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)

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
: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.

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.

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	1000V rms AC 1000V DC