

YOKOGAWA

WT210

The Yokogawa WT210 is a high-performance, single-phase digital power meter designed for measuring small currents and power in industrial, consumer electronics, and research environments. With a wide current range starting at 5 mA up to 20 A direct input, and 0.1% basic accuracy, it delivers precise power, voltage, current, and integration measurements from DC and 0.5 Hz to 100 kHz. Highly compact and rack-mountable, the WT210 supports optional harmonic measurements and versatile connectivity like GP-IB and RS-232, making it an industry-standard fallback for efficiency and standby power testing.

SPECIFICATIONS

General

Interfaces	GP-IB (optional) / RS-232 (optional)
Display	4-screen 5-digit LED display

Physical

Power Supply	100 V AC to 240 V AC, 50/60 Hz, maximum 15 VA
Operating Temperature	5 to 40 °C °C
Dimensions (W×H×D)	213 mm × 88 mm × 379 mm mm
Weight	3.0 kg kg

Input Specifications

Number of Input Elements	1
Input Terminal Type	Safety terminals
Voltage Ranges (Crest Factor 3)	15 V, 30 V, 60 V, 150 V, 300 V, 600 V
Voltage Ranges (Crest Factor 6)	7.5 V, 15 V, 30 V, 75 V, 150 V, 300 V
Current Ranges (Direct Input, CF 3)	0.5 mA, 1 mA, 2 mA, 5 mA, 10 mA, 20 mA, 50 mA, 100 mA, 200 mA, 500 mA, 1 A, 2 A, 5 A, 10 A, 20 A
Current Ranges (Direct Input, CF 6)	0.25 mA, 0.5 mA, 1 mA, 2.5 mA, 5 mA, 10 mA, 25 mA, 50 mA, 100 mA, 250 mA, 0.5 A, 1 A, 2.5 A, 5 A, 10 A
External Current Sensor Input Ranges (CF 3)	2.5 V, 5 V, 10 V
External Current Sensor Input Ranges (CF 6)	1.25 V, 2.5 V, 5 V
Input Impedance (Voltage Input)	Approx. 2 M Ω , 13 pF in parallel
Input Impedance (Current Input, Low Ranges)	Approx. 500 m Ω (for 0.5 mA to 500 mA ranges)
Input Impedance (Current Input, High Ranges)	Approx. 6 m Ω (for 1 A to 20 A ranges)
Maximum Input Voltage	1000 Vrms
Maximum Input Current	26 Arms
Continuous Maximum Allowed Overload (Voltage)	1000 Vrms
Continuous Maximum Allowed Overload (Current)	26 Arms
Crest Factor Capability	3 or 6 (selectable)
Measurement Frequency Bandwidth	DC, 0.5 Hz to 100 kHz
Line Filter Cutoff Frequency	5.5 kHz

Measurement Parameters & Functions

Measured Parameters	U, I, P, S, Q, λ , ϕ , f, Wh, Ah
Active Power Accuracy	$\pm(0.1\%$ of reading + 0.1% of range)
Voltage Accuracy	$\pm(0.1\%$ of reading + 0.1% of range)
Current Accuracy	$\pm(0.1\%$ of reading + 0.1% of range)
Frequency Measurement Range	0.5 Hz to 100 kHz
Frequency Measurement Accuracy	$\pm(0.1\%$ of reading + 1 digit)
Sampling Rate	Approx. 51.2 kHz
A/D Converter Resolution	16-bit
Influence of Temperature	$\pm 0.03\%$ of range/ $^{\circ}\text{C}$ (voltage/current), $\pm 0.05\%$ of range/ $^{\circ}\text{C}$ (active power)
Influence of Common Mode Voltage	$\pm 0.01\%$ of range or less (600 V at 50/60 Hz)
Influence of Power Factor	$\pm 0.15\%$ of apparent power (S) at PF = 0

Integration (Energy) Function

Integration Modes	Standard, Continuous, Real-Time
Integration Timer Range	0000:00:00 to 10000:00:00
Integration Accuracy	±(Power/Current Accuracy + 0.02% of reading)
Watt-Hour Integration Range	0.0000 mWh to 999999 MWh
Ampere-Hour Integration Range	0.0000 mAh to 999999 MAh
Integration Auto-ranging	Supported

Harmonic Measurement

Harmonic Order Range	1st to 50th order (with optional /HRM)
FFT Window Points	1024 points (with optional /HRM)
THD Calculation Modes	Total / Fundamental (with optional /HRM)

Interfaces & Outputs

D/A Output Channels	12 channels (with optional /DA12)
D/A Output Voltage Range	±5 V Full Scale
D/A Output Resolution	12-bit
Remote Control Capability	Supported via GP-IB or RS-232

Display & User Interface

Number of Displayed Digits	5 digits per screen
Display Update Rate	0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s (selectable)
Simultaneous Parameter Display Limit	4 parameters
Display Hold Function	Supported
Key Lock Function	Supported

Physical & Power Specifications

Warm-up Time Requirement	Approx. 30 minutes
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Environmental & Compliance

Operating Humidity Range	20% to 80% RH (non-condensing)
Storage Temperature Range	-25 °C to 60 °C
Storage Humidity Range	20% to 80% RH (non-condensing)
Maximum Operating Altitude	2000 m
Safety Standards	Complies with EN61010-1
EMC Standards	Complies with EN61326-1
Insulation Resistance	50 MΩ or more (at 500 V DC between power supply and case)
Withstanding Voltage	1500 V AC for 1 minute (between power supply and case)

Safety & Compliance

Maximum Common Mode Voltage	600 Vrms (CAT II), 300 Vrms (CAT III)
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Measurement Functions

VT Ratio Range	0.001 to 9999.999
CT Ratio Range	0.001 to 9999.999
SF (Scaling Factor) Range	0.001 to 9999.999
Phase Angle Display Range	180.0 Lag to 180.0 Lead
Phase Angle Resolution	0.1°

Signal Processing

Averaging Type	Exponential average or moving average
Exponential Averaging Attenuation Constant	2, 4, 8, 16, 32, 64
Moving Average Count	8, 16, 32, 64
Frequency Filter Cutoff Frequency	500 Hz

Power Supply

Power Consumption	Approx. 15 VA (without options), max. 40 VA (with options)
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Measurement Specifications

Integration Timer Accuracy	±0.005%
Effective Input Range	1% to 110% of measurement range (CF 3), 2% to 110% of measurement range (CF 6)

Interfaces

GP-IB Interface Option	Option /C1 (IEEE-488.2 compliant)
RS-232-C Interface Option	Option /C2
RS-232-C Baud Rates	1200, 2400, 4800, 9600 bps
GP-IB Address Range	0 to 30

Measurement Options

Harmonic Measurement Option	Option /HR5
D/A Output Option	Option /DA4 (4 channels)
Harmonic Fundamental Frequency Range	40 Hz to 440 Hz (with Option /HR5)

Inputs

External Current Sensor Input Impedance	Approx. 1 MΩ
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Display

Display Type	7-segment LED
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TECHNOLOGY

Digital Sampling

APPLICATIONS

Electrical Power Measurement

