Quick start guide

Electronics Workstation

Multi-output DC Power Supply

GW INSTEK GPE - 4323

Features

- 1/2/3/4 Independent Isolated Output.
- 4.3 Inch LCD Display.
- Setting & Read Back Resolution 100mV/10mA (*1).
- Output ON/OFF.
- Analog Control (Remote I/O) For Output ON/OFF.
- Set View Function for Checking an Original V/I Setting During Output ON.
- Key Lock Function.
- Tracking Series and Parallel Operation.
- Smart Cooling Fan Achieving Low Noise.
- Optional European Jack Type Terminal.

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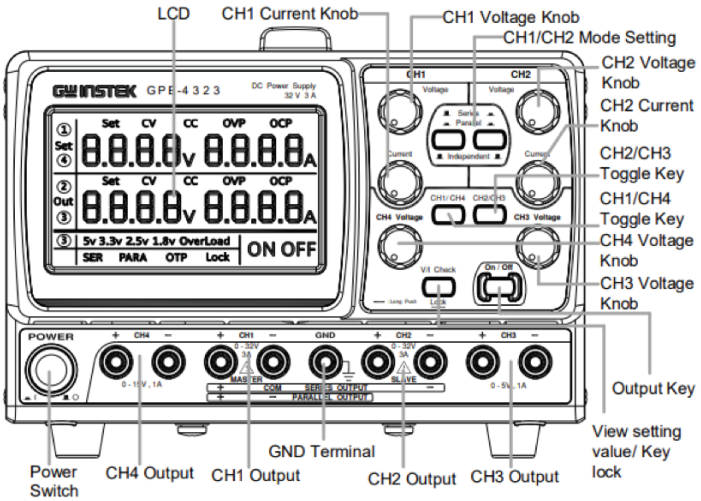
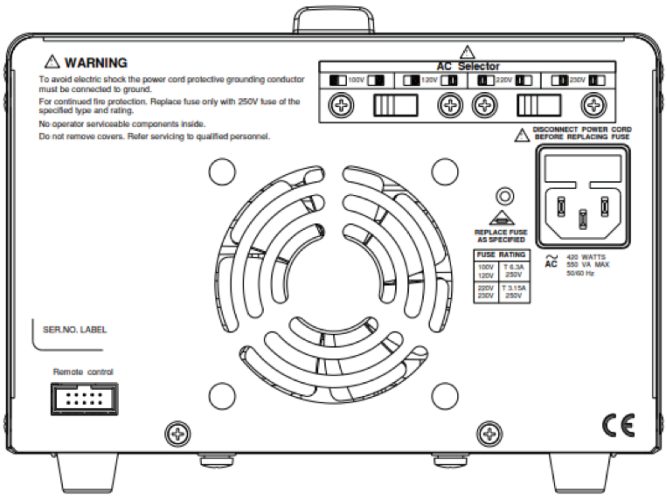
Machine Appearance & Accessories

Font Panel



Back Panel



Applications

- Laboratories and Educational Facilities
- Product Testing and Quality Assurance
- Service Operation and Post-Sales Support
- Product Development and Debugging.

Specifications

Output Ratings	CH1/CH2 Independent	0 ~ 32V / 0 ~ 3A 0 ~ 32V / 0 ~ 6A(GPE-1326)
	CH1/CH2 Series	0 ~ 64V / 0 ~ 3A
	CH1/CH2 Parallel	0 ~ 32V / 0 ~ 6A
	CH3	5V, 5A(GPE-3323) 0~5V, 1A(GPE-4323)
	CH4	0~15V,1A
Voltage Regulation	Line	≤ 0.01% + 3mV
	Load	≤ 0.01% + 3mV (rating current ≤ 3A) ≤ 0.02% + 5mV (rating current > 3A)
	Ripple & Noise	≤ 1mVrms (5Hz ~ 1MHz)
	Recovery Time	≤ 100μs (50% load change, minimum load 0.5A)
	Temperature Coefficient	≤ 300ppm/°C
Current Regulation	Line	≤ 0.2% + 3mA
	Load	≤ 0.2% + 3mA
	Ripple & Noise	≤ 3mArms
Tracking Operation	Tracking Error	≤ 0.1% + 10mV of Master (0~32V) (No Load, with load add load regulation≤100mV))
	Parallel Regulation	Line: ≤ 0.01% + 3mV Load: ≤ 0.01% + 3mV (rating current ≤ 3A) Load: ≤ 0.02% + 5mV (rating current > 3A)
	Series Regulation	Line: ≤ 0.01% + 5mV Load: ≤ 100mV
Meter Resolution	Voltage	10mV or 100mV
	current	1mA or 10mA 2mA or 10mA (GPE-1326)

Display	LCD	4.3" single color LCD display
	Ammeter	3.200A full scale, 4 digits or 3 digits 6.200A full scale, 4 digits or 3digits(GPE-1326)
	Voltmeter	33.00V full scale, 4 digits or 3 digits
Accuracy	Setting/ Read back Accuracy	Voltage: ± (0.1% of reading + 30mV) (4digits) ± (0.1% of reading + 200mV) (3digits) Current: ± (0.3% of reading + 6mA) (4digits) ± (0.3% of reading + 20mA) (3digits) (1326) ± (0.3% of reading + 10mA) (4digits) (1326) ± (0.3% of reading + 20mA) (3digits)
CH3 on the GDE-3323	Output Voltage	5V, ±5%
	Output Current	5A
	Line	≤ 3mV
	Load	≤ 10mV
	Ripple & Noise	≤ 2mVrms (5Hz ~ 1MHz)
Insulation	Chassis and Terminal	20MΩ or above (DC 500V)
	Chassis and AC cord	30MΩ or above (DC 500V)
Operation Environment		Indoor use, Altitude: ≤ 2000m Ambient temperature: 0 ~ 40°C Relative humidity: ≤ 80% Installation category: II Pollution degree: 2
Storage Environment		Ambient temperature: -10 ~ 70°C Relative humidity: ≤ 70%
Power Source		AC 100V/120V/220V±10%, 230V+10%/-6%, 50/60Hz

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Electronics Workstation

Synthesized Function Generator

GW INSTEK SFG 1013

Features

- DDS Technology and FPGA Design
- Frequency Range: 0. 1Hz ~ 3MHz
- High Frequency Accuracy: 20ppm
- High Frequency Stability: 20ppm Max.
- Frequency Resolution: 100 mHz
- Low Distortion Sine Wave: -55dBc, 0.1Hz - 200kHz
- Voltage Display (Only SFG-1013)

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Machine Appearance & Accessories

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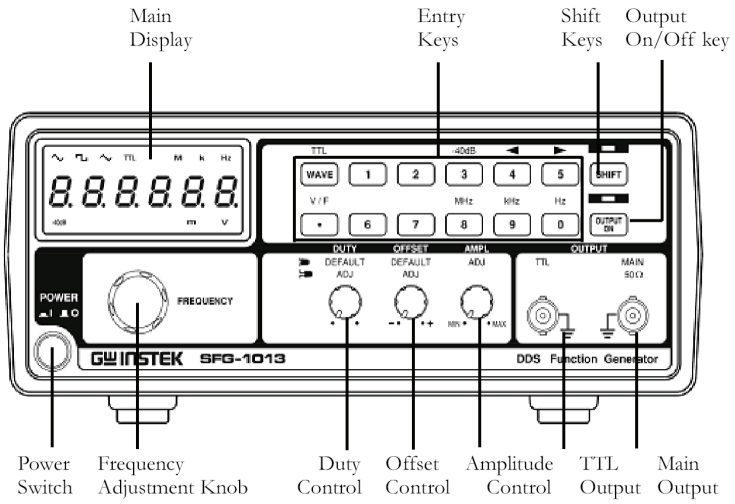
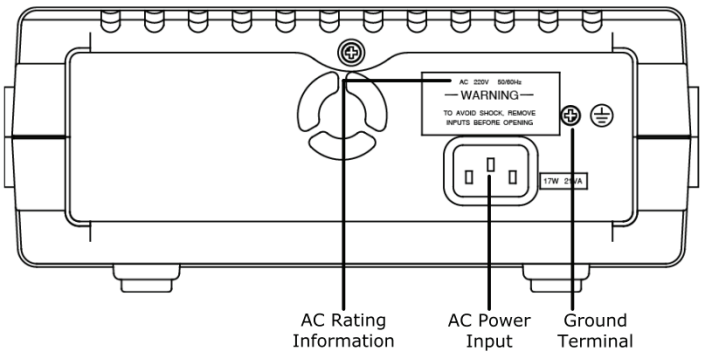


Back Panel



Applications

- Reference Signal for PLL System.
- Trouble-Shooting Signal Source.
- Transistor DC Bias Characteristics Test.
- Amplifier Over-Load & Transient Characteristic Test.
- Logic Circuit Test.
- Speaker Driver Test.
- Impedance Matching Network Test.

Specifications

MAIN	Output Function	Sine, Square, Triangle, TTL
	Frequency Range(For Sine, Square)	0.1Hz – 3MHz
	Frequency Range(For Triangle)	0.1Hz – 1MHz
	Resolution	0.1Hz maximum
	Stability	±20ppm
	Accuracy	±20ppm
	Aging	±5ppm/year
	Amplitude Range	10Vp-p (into 50Ω load)
	Amplitude Accuracy	±20% at maximum position (only SFG-1013)
	Impedance	50Ω±10%
	Attenuator	-40dB±1dBx1
	DC Offset	<-5V – >5V (into 50Ω load)
	Duty Control Range	25% – 75% below 1MHz (for square wave only)
	Display	6-digit LED display
	Output Control	ON/OFF selector
SINE WAVE	Harmonics Distortion	From Amplitude control at maximum position without any attenuation to its 1/10 of any combination setting, TTL OFF ≥ -55dBc, 0.1Hz – 200kHz ≥ -40dBc, 0.2MHz – 2MHz ≥ -35dBc, 2MHz – 3MHz
	Flatness (at maximum amplitude relative to 1kHz)	<±0.3dB, 0.1Hz – 1MHz <±0.5dB, 1MHz – 2MHz <± 1dB, 2MHz – 3MHz
TRIANGLE WAVE	Linear	≥98%, 0.1Hz to 100kHz ; ≥95%, 100kHz to 1MHz
SQUARE WAVE	Symmetry	5% of period 4ns – 0.1Hz – 100kHz
TTL OUTPUT	Rise or Fall Time	≤ 100ns at maximum output. (into 50Ω load)
	Level	≥ 3Vp-p
	Fan Out	20 TTL load
	Rise or Fall Time	≤ 25ns
GENERAL	Power Source	AC 240V,220V,110V 10%, 50/60Hz
	Operation Environment	Indoor use, altitude up – 2000m Ambient Temperature 0℃ – 40℃ Relative Humidity: Up to 80% at 0℃ – 40℃ Up to 70% at 35℃ – 40℃ Installation category II Pollution Degree 2
STORAGE TEMPERATURE	Humidity	-10℃ – 70℃, 70% (Maximum).
ACCESSORIES	GTL-101x1, User manualx1, Power cord	
DIMENSION & WEIGHT	251(W) x 91(H) x 291(D) m/m, Approx. 2.1kg	

Note:

SFG series must be powered for at least 30 minutes within the ambient temperature 18°C~28°C to meet these specifications.

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Electronics Workstation

Mixed Signal Oscilloscope

GW INSTEK GDS1102B

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Features

- 100/70/50MHz Bandwidth Selections, 2 CH input.
- 1GSa/s Max. Sampling Rate.
- 10M Max. Memory Depth for Each Channel.
- 7" 800 x 480 WVGA LCD Display.
- 256 Colour Gradient Display Function to Strengthen Waveform performance.
- 1 Mpts FFT Freq. Domain Signal Display.
- Zero Key Function for Horizontal Time, Vertical Voltage and Triggering.
- Compact and Innovative Exterior Design.

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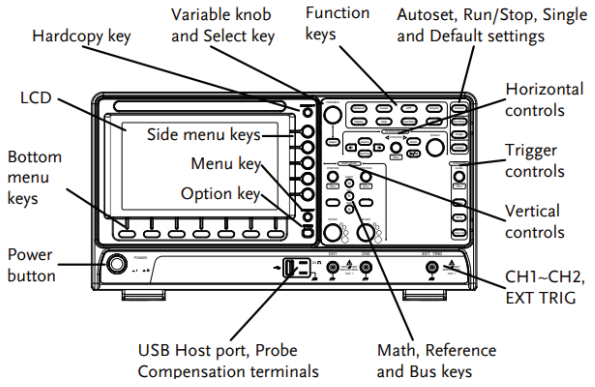
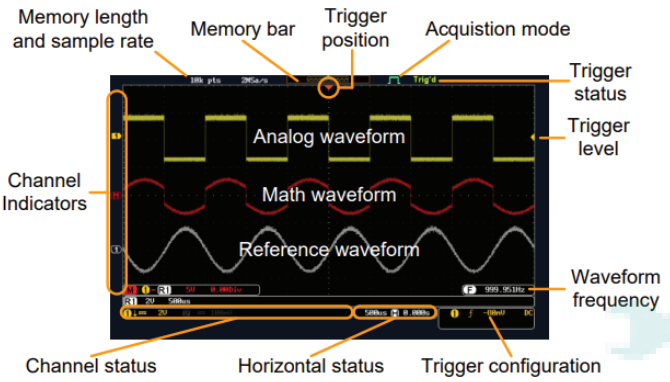
Machine Appearance & Accessories

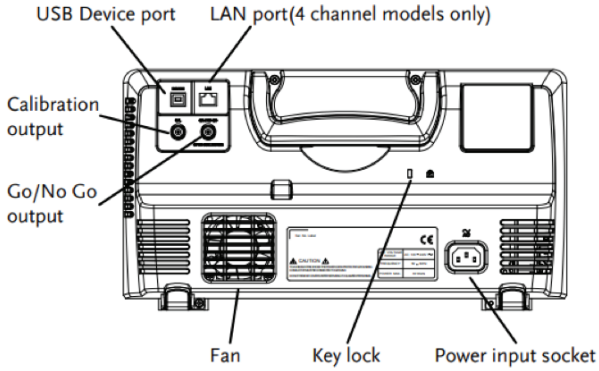
Font Panel



Display



Back Panel



Applications

- Educational Market – General Purpose Instruction.
- Industrial Sector - Fundamental R&D Measurement Applications.

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Specifications

		GDS-1054B	GDS-1072B	GDS-1074B	GDS-1102B	GDS-1104B
VERTICAL	Channels Bandwidth Rise Time Bandwidth Limit	4 DC~50MHz(-3dB) 5ns 20MHz	2 + Ext DC~70MHz(-3dB) 5ns 20MHz	4 DC~70MHz(-3dB) 5ns 20MHz	2 + Ext DC~100MHz(-3dB) 3.5ns 20MHz	4 DC~100MHz(-3dB) 3.5ns 20MHz
	Vertical Sensitivity Resolution Input Coupling Input Impedance DC Gain Accuracy* Polarity Maximum Input Voltage Offset Position Range Waveform Signal Process	8 bit ; 1mV~10V/div AC, DC, GND 1MΩ// 16pF approx. ±3% Normal & Invert 300Vrms, CAT I (300Vrms CAT II with GTP-070A- 4/100A-4 10:1 probe) 1mV/div : ±1.25V ; 2mV/div ~ 100mV/div : ±2.5V ; 200mV/div ~ 10V/div : ±125V +,-, ×, ÷, FFT, FFTrms, User Defined Expression ; FFT: 1Mpts; FFT: Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS ; FFT Window Display : Rectangular, Hamming, Handing, or Blackman-Harris				
TRIGGER	Source Trigger Mode Trigger Type Holdoff range Coupling Sensitivity	CH1, CH2, CH3*, CH4*, Line, EXT** ; *four channel models only. ; **two channel models only Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Sequence Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay (Duration, 4nS~10S), Bus 4ns to 10s AC, DC, LF rej., Hf rej., Noise rej. 1div				
EXTERNAL TRIGGER	Range Sensitivity Input Impedance	±15V DC ~ 100MHz Approx. 100mV ; 100MHz ~ 200MHz Approx. 150mV 1MΩ±3%~16pF				
HORIZONTAL	Time base Range ROLL Pre-trigger Post-trigger Timebase Accuracy Real Time Sample Rate Record Length Acquisition Mode Peak Detection Average	5ns/div ~ 100s/div (1-2-5 increments) 100ms/div ~ 100s/div 10 div maximum 2,000,000 div maximum ±50 ppm over any ≥1 ms time interval 1GSa/s max. Max. 10Mpts Normal, Average, Peak Detect, Single 2nS (typical) selectable from 2 to 256				

X-Y MODE	X-Axis Input Y-Axis Input Phase Shift	Channel 1; Channel 3*(*four channel models only) Channel 2; Channel 4*(*four channel models only) ±3° at 100kHz
CURSORS AND MEASUREMENT	Cursors Automatic Measurement Cursors Measurement Auto Counter	Amplitude, Time, Gating available; Unit : Seconds(s), Hz(1/s), Phase(degree), Ration(%) 36 sets: Pk-Pk, Max, Min, Amplitude, High, Low, Mean, Cycle Mean, RMS, Cycle RMS, Area, Cycle Area, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Frequency, Period, RiseTime, FallTime, +Width, -Width, Duty Cycle, +Pulses, -Pulses, +Edges, -Edges, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF, Phase Voltage difference between cursors (ΔV) Time ; difference between cursors (ΔT) 6 digits, range from 2Hz minimum to the rated bandwidth
CONTROL PANEL FUNCTION	Autoset Save Setup Save Waveform	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo Autoset 20set 24set
DISPLAY	TFT LCD Type Display Resolution Interpolation Waveform Display Waveform Update Rate Display Graticule Display Mode	7" TFT WVGA color display 800 horizontal × 480 vertical pixels (WVGA) Sin(x)/x Dots, vectors, variable persistence (16ms~4s), infinite persistence 50,000 waveforms per second, maximum 8 x 10 divisions YT, XY
INTERFACE	USB Port Ethernet Port(LAN) Go-NoGo BNC Kensington Style Lock	USB 2.0 High-speed host port x1, USB High-speed 2.0 device port x1 RJ-45 connector, 10/100Mbps with HP Auto-MDIX (Only for the GDS-1074B, GDS-1104B.) 5V Max/10mA TTL open collector output Rear-panel security slot connects to standard kensington-style lock
POWER SOURCE		AC 100V ~ 240V , 50Hz ~ 60Hz , Auto selection , Power consumption: 30 Watts
MISCELLANEOUS	Multi-Language Menu Operation Environment Online Help	Available Temperature : 0°C ~ 50°C. Relative Humidity ≤80% at 40°C or below; ≤ 45% at 41°C ~ 50°C Available

Quick start guide

Electronics Workstation

Dual Measurement

GW INSTEK GDM 8341/8342

Features

- 50,000 counts, VFD display
- Dual measurement/Dual display
- Selectable measurement speeds, the maximum: 40 Readings/s for DCV.
- The basic precision of DC voltage: 0.02%.
- Auto/manual Ranging.
- True RMS (AC, AC+DC) measurements.
- 11 different measurement functions.
- Max./Min., REL, MX+B, 1/X, Ref%, Compare, Hold, dB, dBm.
- Standard USB device interface to connect with a computer.
- Temperature measurement function (GDM-8342 only).
- USB storage for Data collection (GDM-8342 only).

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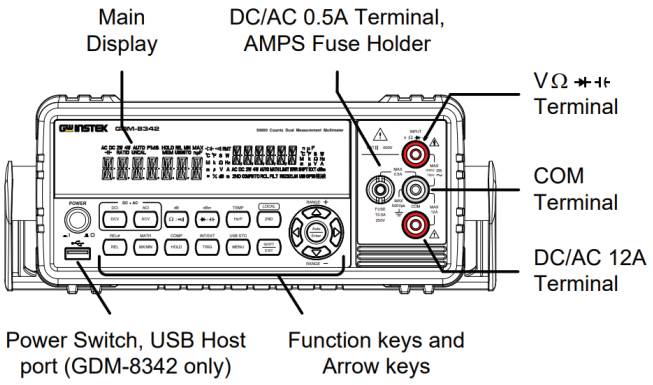
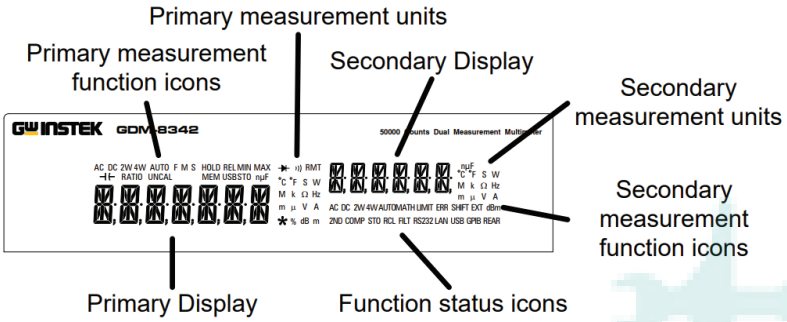
Machine Appearance & Accessories

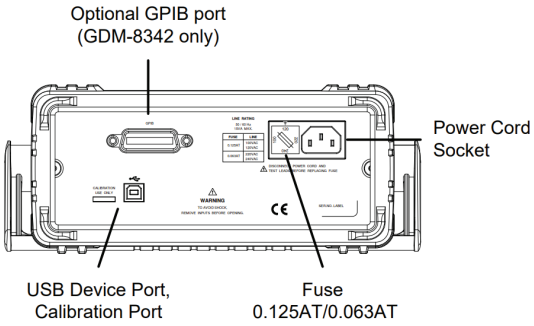
Font Panel



Display Overview



Back Panel



Applications

- AC/DC Voltage and Current Measurement.
- Resistance, Capacitance, Diode Testing.
- Continuity Testing.
- Temperature and Frequency / Period Measurement.
- Dual/Advanced Measurement Overview.
- dBm/dB/W, Max/Min, Math Measurement.
- Relative, Hold, Compare Measurement.

Specifications

Note:

The specifications apply when the GDM-8342 / GDM-8341 is powered on for at least 30 minutes under +18°C~+28°C.

Specification Conditions:
Temperature: 23˚C±5˚C
Humidity: <80%RH, 75%RH for resistance measurement readings greater than 10MΩ.

Operating Environment: (0~50˚C)
Temperature Range: 0~35˚C, Relative Humidity: <80%RH;
>35˚C, Relative Humidity: <70%RH
Indoor use only
Altitude: 2000 meters
Pollution degree 2

Storage Conditions (-10~70˚C)
Temperature Range: 0~35˚C, Relative Humidity: <90%RH;
>35˚C, Relative Humidity: <80%RH

General:
Power Consumption: Max 15VA
Dimensions: 265 mm (W) X 107 mm (H) X 302 mm (D)
Weight: Approximately 2.9 kg