

# Specifications

## Voltage Source Section

Range	Source Range	Resolution	24-Hour Stability ±(% of setting + $\mu$ V)	90-Day Stability ±(% of setting + $\mu$ V)	90-Day Accuracy ±(% of setting + $\mu$ V)	1-Year Accuracy ±(% of setting + $\mu$ V)	Temperature Coefficient ±(% of setting + $\mu$ V)/°C
10 mV	±12.0000 mV	100 nV	0.002 + 3	0.014 + 4	0.018 + 4	0.025 + 5	0.0018 + 0.7
100 mV	±120.000 mV	1 $\mu$ V	0.003 + 3	0.014 + 5	0.018 + 10	0.025 + 10	0.0018 + 0.7
1 V	±1.20000 V	10 $\mu$ V	0.001 + 10	0.008 + 50	0.010 + 100	0.016 + 120	0.0009 + 7
10 V	±12.0000 V	100 $\mu$ V	0.001 + 20	0.008 + 100	0.010 + 200	0.016 + 240	0.0008 + 10
30 V	±32.000 V	1 mV	0.001 + 50	0.008 + 200	0.010 + 500	0.016 + 600	0.0008 + 30

24-hour stability values are for 23°C ±1°C and power fluctuation within ±5%.

90-day stability and 90-day and 1-year accuracy values are for 23°C ±5°C.

Add the temperature coefficient for 90-day and 1-year accuracy values for 5°C to 18°C and for 28°C to 40°C.

Range	Maximum Output Current	Output Resistance	Output Noise		CMRR (50/60 Hz)
			DC to 10 Hz	DC to 10 kHz (Reference)	
10 mV	—	App. 2 $\Omega$	3 $\mu$ Vp-p	30 $\mu$ Vp-p	≥120 dB
100 mV	—	App. 2 $\Omega$	5 $\mu$ Vp-p	30 $\mu$ Vp-p	
1 V	±200 mA	≤2 m $\Omega$	15 $\mu$ Vp-p	60 $\mu$ Vp-p	
10 V	±200 mA	≤2 m $\Omega$	50 $\mu$ Vp-p	100 $\mu$ Vp-p	
30 V	±200 mA	≤2 m $\Omega$	150 $\mu$ Vp-p	200 $\mu$ Vp-p	≥100 dB

## Current Source Section

Range	Source Range	Resolution	24-Hour Stability ±(% of setting + $\mu$ A)	90-Day Stability ±(% of setting + $\mu$ A)	90-Day Accuracy ±(% of setting + $\mu$ A)	1-Year Accuracy ±(% of setting + $\mu$ A)	Temperature Coefficient ±(% of setting + $\mu$ A)/°C
1 mA	±1.20000 mA	10 nA	0.0015 + 0.03	0.016 + 0.1	0.02 + 0.1	0.03 + 0.1	0.0015 + 0.01
10 mA	±12.0000 mA	100 nA	0.0015 + 0.3	0.016 + 0.5	0.02 + 0.5	0.03 + 0.5	0.0015 + 0.1
100 mA	±120.000 mA	1 $\mu$ A	0.004 + 3	0.016 + 5	0.02 + 5	0.03 + 5	0.002 + 1
200 mA	±200.000 mA	1 $\mu$ A	0.004 + 20	0.016 + 30	0.02 + 30	0.03 + 30	0.002 + 5

24-hour stability values are for 23°C ±1°C and power fluctuation within ±5%.

90-day stability and 90-day and 1-year accuracy values are for 23°C ±5°C.

Add the temperature coefficient for 90-day and 1-year accuracy values for 5°C to 18°C and for 28°C to 40°C.

Range	Maximum Output Voltage	Output Resistance	Output Noise		CMRR (50/60 Hz)
			DC to 10 Hz	DC to 10 kHz (Reference)	
1 mA	±30 V	≥100 M $\Omega$	0.02 $\mu$ Ap-p	0.1 $\mu$ Ap-p	≥100 nA/V
10 mA	±30 V	≥100 M $\Omega$	0.2 $\mu$ Ap-p	0.3 $\mu$ Ap-p	
100 mA	±30 V	≥10 M $\Omega$	2 $\mu$ Ap-p	3 $\mu$ Ap-p	
200 mA	±30 V	≥10 M $\Omega$	10 $\mu$ Ap-p	15 $\mu$ Ap-p	

## Limiter Section

Setting	Range	Resolution
Current limiter (only during voltage generation)	1 mA to 200 mA	1 mA
Voltage limiter (only during current generation)	1 V to 30 V	1 V

## Response Time (Typical)

10 ms or less for all voltage source and current source ranges.

(Response time is the time from the point when the source begins to change until it reaches within 0.1% of the final value at maximum output, maximum load (pure resistive load), and with no limiter operation.)

## Maximum Capacitive and Inductive Loads

Capacitive load: 10  $\mu$ F

Inductive load: 1 mH

## Voltage and Current Monitoring Feature (Optional)

### Voltage monitoring feature (only during current generation)

Range	Measurement Range	Resolution	Input Resistance	1-Year Accuracy (1 PLC) ±(% of reading + mV)	Temperature Coefficient ±(% of reading + mV)/°C
30 V	±30.000 V	1 mV	≥10 MΩ	0.02 + 2	0.002 + 0.1

### Current monitoring feature (only during voltage generation)

Range	Measurement Range	Resolution	Input Resistance	1-Year Accuracy (1 PLC) ±(% of reading + μA)	Temperature Coefficient ±(% of reading + μA)/°C
200 mA	±200.00 mA	10 μA	≤2 mΩ	0.03 + 300	0.003 + 30

Integration time	1 to 25 PLC
Trigger source*	Internal timer (0.1 s to 3600.0 s), READY, communication, and immediate
Measurement delay (the delay from the trigger point)	0 to 999999 ms (1 ms resolution)
Other features	Auto zero, NULL computation, and data storage
	*Measurement trigger source
	Internal timer For monitoring. 0.1 s to 3600.0 s (0.1 s resolution)
	READY For curve tracing during program operation. The timing when READY signals are produced.
	Comm. For controlling the GS200 from a PC. Trigger generation through the *TRG command.
	Immediate Trigger generation at the end of measurement.

## Programming Feature

Maximum number of steps	10000
Trigger	External, internal timer, step input, measurement end
Slope	0 s to 3600.0 s (0.1 s resolution)

## External Input and Output

BNC input/output	IN: TRIG IN, OUTPUT IN OUT: TRIG OUT, OUTPUT OUT, READY OUT																					
External synchronization I/O	<table border="1"> <thead> <tr> <th>PIN No.</th> <th>SYNC IN</th> <th>SYNC OUT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OUTPUT IN</td> <td>OUTPUT OUT</td> </tr> <tr> <td>2</td> <td>N.C.</td> <td>N.C.</td> </tr> <tr> <td>3</td> <td>TRIG IN</td> <td>TRIG OUT</td> </tr> <tr> <td>4</td> <td>GND</td> <td>GND</td> </tr> <tr> <td>5</td> <td>N.C.</td> <td>READY OUT</td> </tr> <tr> <td>6</td> <td>N.C.</td> <td>N.C.</td> </tr> </tbody> </table>	PIN No.	SYNC IN	SYNC OUT	1	OUTPUT IN	OUTPUT OUT	2	N.C.	N.C.	3	TRIG IN	TRIG OUT	4	GND	GND	5	N.C.	READY OUT	6	N.C.	N.C.
PIN No.	SYNC IN	SYNC OUT																				
1	OUTPUT IN	OUTPUT OUT																				
2	N.C.	N.C.																				
3	TRIG IN	TRIG OUT																				
4	GND	GND																				
5	N.C.	READY OUT																				
6	N.C.	N.C.																				

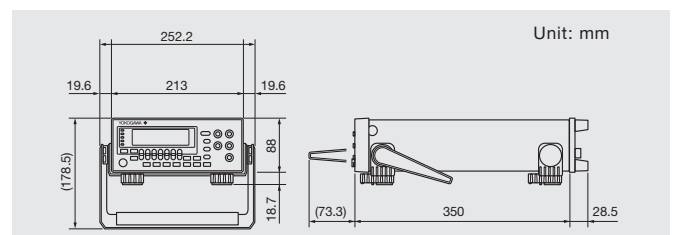
## Communication Interface

GP-IB	Electrical and mechanical specifications Conforms to IEEE Standard 488.2-1978
	Functional specifications SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0
	Protocol Conforms to IEEE Standard 488.2-1992
	Addresses 0 to 30 7651-command-compatible mode available
USB interface	Ports 1
	Connector Type B
	Electrical and mechanical specifications Conforms to USB 2.0
Ethernet (optional)	Ports 1
	Connector RJ-45
	Electrical and mechanical specifications Conforms to IEEE 802.3
	Transmission system 100BASE-TX/10BASE-T
	Protocol FTP server, HTTP server, VXI-11 server, DHCP client, command socket

## General Specifications

Display	256 × 64 dot vacuum fluorescent display
Internal memory	4 MB (non-volatile; stores setup files and output pattern files)
Warm-up time	At least 60 minutes
Operating environment	5 to 40°C, 20 to 80% RH
Rated supply voltage	100 VAC, 120 VAC, 230 VAC (±10% of each rated voltage, 50/60 Hz)
Rated supply frequency	50/60 Hz
Maximum power consumption	Approx. 80 VA
Allowable input voltage	32 V between the high and low terminals 42 V <sub>peak</sub> between the low and ground terminals 0.5 V between the output and sense terminals 250 V <sub>peak</sub> between the ground terminal and the case
Weight	Approx. 5 kg
External dimensions	Approx. 213 (W) × 88 (H) × 350 (D) mm (excluding protrusions)

## External dimensions



## Model and Suffix code

Model	Suffix code	Description
GS210		DC voltage/current source (front panel output terminals)
GS211		DC voltage/current source (rear panel output terminals)
Supply Voltage	-1	100 VAC, 50/60 Hz
	-4	120 VAC, 50/60 Hz
	-7	230 VAC, 50/60 Hz
Power cord	-D	UL/CSA standard
	-F	VDE standard
	-R	AS standard
	-Q	BS standard
	-H	GB standard
Options	/MON	Voltage and current monitoring
	/C10	Ethernet interface

## Standard Accessories

GS210, GS211	Power cord, rubber feet (2 pieces), user's manuals (1 set), fuse
GS210 only	Measurement leads 758933 (1 set of red and black leads), small alligator clip adapters 758922 (1 set of red and black leads)
GS211 only	Terminal plug

## Rack Mount Kits

Model	Product	Description
751533-E2	Rack mount kit	For EIA single mount
751533-J2	Rack mount kit	For JIS single mount
751534-E2	Rack mount kit	For EIA dual mount
751534-J2	Rack mount kit	For JIS dual mount

## Related product

### GS610

#### Source Measure Unit

Wide-range source and measurement function  
Source and measurement range:  
±110 V, ±3.2 A



### GS820

#### Multi Channel Source Measure Unit

2-channel source & sink operation  
Source and measurement range:  
±18 V, ±3.2 A (18 V range model)  
±50 V, ±1.2 A (50 V range model)



## Accessories

Model	Name	Description	
758933	Measurement lead	1 m safety terminal cable with 2 leads (red and black) in a set	
758917	Measurement lead	0.75 m safety terminal cable with 2 leads (red and black) in a set	
758922	Small alligator clip adapter	Safety terminal-alligator clip adapter, containing 2 pieces (red and black) in a set	
758929	Large alligator clip adapter	Safety terminal-alligator clip adapter, containing 2 pieces (red and black) in a set	
758921	Fork terminal adapter	Safety terminal-fork terminal adapter, containing 2 pieces (red and black) in a set	
758924	Conversion adapter	BNC-binding post adapter	
366924	BNC cable	BNC-BNC cable 1 m	
366925	BNC cable	BNC-BNC cable 2 m	
758923*	Safety terminal adapter	Spring clamp type 2 adapters (red and black) in a set	
758931*	Safety terminal adapter	Screw-in type 2 adapters (red and black) in a set	
751512	Conversion adapter	Banana male to binding post adapter	
758960	Synchronization operation cable	RJ11 6-pin, 1 m	

**⚠** Due to the nature of this product, it is possible to touch its metal parts. Therefore, there is a risk of electric shock, so the product must be used with caution.

\*Wire diameter of cables that can connect to the adapter  
758923 Core wire diameter: 2.5 mm or less, covering diameter: 5.0 mm or less  
758931 Core wire diameter: 1.8 mm or less, covering diameter: 3.9 mm or less

### NOTICE

- Before operating the product, read the user's manual thoroughly for proper and safe operation.

■ Any company's names and product names mentioned in this document are trade names, trademarks or registered trademarks of their respective companies.

### Yokogawa's Approach to Preserving the Global Environment

- Yokogawa's electrical products are developed and produced in facilities that have received ISO14001 approval.
- In order to protect the global environment, Yokogawa's electrical products are designed in accordance with Yokogawa's Environmentally Friendly Product Design Guidelines and Product Design Assessment Criteria.

This is a Class A instrument based on Emission standards EN61326-1 and EN55011, and is designed for an industrial environment.  
Operation of this equipment in a residential area may cause radio interference, in which case users will be responsible for any interference which they cause.

# YOKOGAWA

<https://tmi.yokogawa.com/>

YMI-KS-MI-SE07

## YOKOGAWA TEST & MEASUREMENT CORPORATION

Global Sales Dept. /Phone: +81-422-52-6237 E-mail: tm@cs.jp.yokogawa.com  
Facsimile: +81-422-52-6462

## YOKOGAWA CORPORATION OF AMERICA

### YOKOGAWA EUROPE B.V.

### YOKOGAWA TEST & MEASUREMENT (SHANGHAI) CO., LTD.

### YOKOGAWA ELECTRIC KOREA CO., LTD.

### YOKOGAWA ENGINEERING ASIA PTE. LTD.

### YOKOGAWA INDIA LTD.

### YOKOGAWA ELECTRIC CIS LTD.

### YOKOGAWA AMERICA DO SUL LTDA.

### YOKOGAWA MIDDLE EAST & AFRICA B.S.C(c)

Phone: +1-800-888-6400

Phone: +31-88-4641429

Phone: +86-21-6239-6363

Phone: +82-2-2628-3810

Phone: +65-6241-9933

Phone: +91-80-4158-6396

Phone: +7-495-737-78-68

Phone: +55-11-3513-1300

Phone: +973-17-358100

E-mail: tmi@us.yokogawa.com

E-mail: tmi@nl.yokogawa.com

E-mail: tmi@cs.cn.yokogawa.com

E-mail: TMI@kr.yokogawa.com

E-mail: TMI@sg.yokogawa.com

E-mail: tmi@in.yokogawa.com

E-mail: info@ru.yokogawa.com

E-mail: tm@br.yokogawa.com

E-mail: help.ymatmi@bh.yokogawa.com

Facsimile: +86-21-6880-4987

Facsimile: +82-2-2628-3899

Facsimile: +65-6241-9919

Facsimile: +91-80-2852-1442

Facsimile: +7-495-737-78-69

Facsimile: +973-17-336100

The contents in this catalog is as of April 2019. Subject to change without notice.

Copyright © 2019, Yokogawa Test & Measurement Corporation

[Ed: 01/b]

Printed in Japan, 903(KP)