General Specifications

Model GX70SM

Wireless Input Unit

SMARTDAC+

For the US

GS 04L57B01-01EN

■ Overview

The wireless input unit is a compact, battery-driven analog input unit that uses 920 MHz specified low power radio.

It connects to a SMARTDAC+ GX20, GP20, or GM10 coordinator over a multi-hop wireless link, and allows data collection and status display of the wireless input unit on the GX20/GP20/GM10.

Because it is battery-driven, it can collect various types of data in a variety of locations.

(This product can only be used in the US.)

- 2 channels of universal inputs, 1 channel of humidity measurement (/RH option)
- The universal input allows thermocouples, RTDs, DC voltages, analog standard signals, and digital inputs to be configured freely.

  With linear scaling, you can scale the DC voltage signal from various types of sensors and measure it. (Input module version R1.02 and later)

  Input calibration is also possible.
- Measurement is possible at a high speed of 1-second intervals.
- The level of wireless (radio level) can be confirmed.
- A given period of logging data (4500 points or 9000 points (with /DB option)) are stored.
- Wireless terminal authentication function blocks unauthorized access. In addition, communication encryption prevents tampering and wiretapping.
- The battery life is 5 years or 4 years (with /DB option) when the scan interval is set to 5 minutes (standard operating conditions, standard mode). Power supply through the USB port is also possible.
- Extensive self-diagnostics function is available. Device errors, such as drop in the battery voltage and errors in the input, can be detected.
- Wireless Input Unit Configurator (software) can be used to configure and perform maintenance on wireless input units.

  Logging data from the wireless input unit can be saved to a file.
- The enhanced data backup function (/DB option) increases the logging data to 9,000 points.

  It also sends the data within the specified range according to the request of the wirelessly retrieved data (missing data) from GX20/GP20/GM10.

  Wirelessly retrieved data files created using GX20/GP20/GM10 can be combined with missing sections of the GX20/GP20/GM10 recording data (event data) using the Auto Backfill Tool (application software).

  Wirelessly retrieved data files and the backfill files created using the Auto Backfill Tool can be displayed on the SMARTDAC+ Universal Viewer. Signatures can also be attached to backfill files.

  Note) Only data files measured using the advanced security function (/AS option) and whose file type is event can be combined.

■ Wireless Input Unit Specifications

Measuring Function

- Number of inputs: 2 universal inputs, 1 built-in humidity sensor (/RH option)
- Input types: Universal input (DC voltage, thermocouple, RTD, DI (voltage, contact), DC current (using shunt resistor)
- Linear scaling:
  - Span range: Within the measurement range
  - Scale range: -999999 to 999999
  - Decimal place: 0, 1, 2, 3, 4, 5
  - Unit: Up to 6 characters
  - Value on over-range: Free, Over
- Input format: Floating unbalanced, isolation between channels (except the A terminal)
- Send (scan) interval: 1, 2, 5, 10, 20, 30 s, 1, 2, 5, 10, 20, 30, 60 min
- Measurement mode:* Standard, battery-save

  * In standard mode, power frequency noise is rejected.
  Power frequency noise is not rejected in battery-save mode, but the battery lasts 1.3 or 1.2 (with /DB option) times longer than in standard mode.

GS 04L57B01-01EN

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• Measuring range/accuracy:* See the table below.

* Performance at standard operating conditions: 23 ± 2°C, 55 ±10%RH, normal operating conditions for other parameters.
Reference junction temperature compensation accuracy is not included for thermocouples.
No vibrations or other hindrances to performance.

Input type	Range setting	Physical range	Measuring accuracy[6]		Resolution
			Standard mode	Battery-save mode	
Thermocouple	K [1]	-200.0 to 1370.0°C	± (0.15%of rdg + 0.7°C) Except -200.0 to -100.0°C: ±(0.15% of rdg + 1.0°C)	±(0.2%of rdg + 3.5°C) Except -200.0 to -100.0°C: ±(0.2% of rdg + 6.0°C)	0.1°C
	E [1]	-200.0 to 800.0°C	± (0.15%of rdg + 0.5°C) Except -200.0 to -100.0°C: ±(0.15% of rdg + 0.7°C)	± (0.2%of rdg + 2.5°C) Except -200.0 to -100.0°C: ±(2% of rdg + 5.0°C)	
	J [1]	-200.0 to 1100.0°C			
	T [1]	-200.0 to 400.0°C			
	R [1]	0.0 to 1760.0°C	±(0.15% of rdg + 1.0°C) However, For R, S 0.0 to 100.0°C: ±3.7°C 100.0 to 300.0°C: ±1.5°C For B 400.0 to 600.0°C: ±2.0°C Accuracy not guaranteed for temperatures less than 400.0°C	±(0.2% of rdg + 4.0°C) However, For R, S 0.0 to 100.0°C: ±10.0°C 100.0 to 300.0°C: ±5.0°C For B 400.0 to 600.0°C: ±7.0°C Accuracy not guaranteed for temperatures less than 400.0°C	
	S [1]	0.0 to 1760.0°C			
	B [1]	0.0 to 1820.0°C			
	N [1]	-270.0 to 1300.0°C	± (0.15% of rdg + 0.7°C) However, -200.0 to 0.0°C: ±(0.35% of rdg + 0.7°C) Accuracy not guaranteed for temperatures less than -200.0°C	±(0.3%of rdg + 3.5°C) However, -200.0 to 0.0°C: ±(0.7% of rdg + 3.5°C) Accuracy not guaranteed for temperatures less than -200.0°C	
	WRe3-25 [2]	0.0 to 2400.0°C	±(0.2% of rdg + 2.5°C) Except 0.0 to 200.0°C: ±4.0°C	±(0.3% of rdg + 10.0°C) Except 0.0 to 200.0°C: ±18.0°C	
RTD	Pt100 [3]	-200.0 to 600.0°C	± (0.15% of rdg + 0.3°C)	±(0.3% of rdg +1.5°C)	
	JPt100 [4]	-200.0 to 550.0°C			
DC voltage	20 mV	-20.000 to 20.000 mV	± (0.05% of rdg + 12 digits)	± (0.1% of rdg + 40 digits)	1 µV
	60 mV	-60.00 to 60.00 mV	± (0.05% of rdg + 3 digits)	± (0.1% of rdg + 15 digits)	10 µV
	200 mV	-200.00 to 200.00 mV			
	2 V	-2.0000 to 2.0000 V	± (0.05% of rdg + 12 digits)	± (0.1% of rdg + 40 digits)	100 µV
	6 V	-6.000 to 6.000 V	± (0.05% of rdg + 3 digits)	± (0.1% of rdg + 15 digits)	1 mV
	10 V	-10.000 to 10.000 V			
Standard signal	0.4-2 V	0.3200 to 2.0800 V	± (0.05% of rdg + 12 digits)	± (0.1% of rdg + 40 digits)	100 µV
	1-5 V	0.800 to 5.200 V	± (0.05% of rdg + 3 digits)	± (0.1% of rdg + 15 digits)	1 mV
DI	Level		Threshold level (Vth = 2.4 V) accuracy ± 0.1 V		-
	Contact [5]		1 kΩ or less: 1 (ON), 100 kΩ or more: 0 (OFF) (parallel capacitance of 0.01 µF or less)		-

rdg: Reading value

1 R, S, B, K, E, J, T, N: IEC60584-1, DIN EN60584, JIS1602
2 WRe3-25: W-3%Re/W-25%Re (Hoskins Mfg.Co.) ASTM E988
3 Pt100: JIS C 1604, IEC 60751, DIN EN60751
4 JPt100: JIS C1604, JIS C1606
5 DI contact detection current value: approx. 10 µA
6 Use standard mode to supply power through the USB connector.

Measurement accuracy at scaling:

measurement accuracy at scaling (digits) = measurement accuracy (digits) × scaling span (digits) /measurement span (digits) + 1 digit

* Rounding up decimal places

• RJC
Accuracy: Measuring 0°C or more and when the input terminal temperature is balanced (standard mode) (ambient temperature of the device in parentheses)
Type K, E, J, T, N:
±0.5°C (23±2°C), ±0.7°C (0 to 50°C),
±1.0°C (-20 to 70°C)

Type R, S, WRe3-25:
±1.0°C (23±2°C), ±1.4°C (0 to 50°C),
±2.0°C (-20 to 70°C)

Type B: Reference junction compensation is fixed at 0°C.
Mode: Internal or external switchable (each channel) (set the compensation temperature when set to external)
• Temperature unit: °C or °F switchable
• Burnout detection: Upscale, downscale, and off can be specified (for each channel).
Detectable inputs: Thermocouple, resistance temperature detector, standard signal
<Detection conditions>
Thermocouple:
Normal: 2 kΩ or less
Broken: 200 kΩ or less (parallel capacitance 0.01μF or more, detection current: approx. 10μA)

RTD:
Normal: Wiring resistance specifications or less
Broken: 200 kΩ or less (parallel capacitance 0.01μF or more, detection current: approx. 10μA)
Standard signal:
Normal: Within the measuring range
Broken: Less than 0.1 V
• Input bias current: ±10 nA or less (except when burnout detection is set)
• Measurement current (RTD): approx. 500μA
• Input resistance:
10 MΩ or more for thermocouple/DC voltage (200 mV range or lower)
Approx. 1 MΩ for voltage (2 V range or higher)/ standard signal
• Allowable signal source resistance: 2 kΩ or less for thermocouple/voltage (200 mV range or less)
• Effect of signal source resistance:
±10 μV/1 kΩ or less for thermocouple/DC voltage (200 mV range or less)
±0.15% of rdg/1 kΩ or less for voltage (2 V range or higher)/standard signal
• Allowable wiring resistance: 10 Ω or less per line (the same resistance for all three lines) for RTD
• Effect of wiring resistance: ±0.1°C/10 Ω (the same resistance for all three lines) for RTD
• Effects of ambient temperature: Fluctuation per 10°C change
DCV, TC range: Within ±(0.1% of rdg + 0.05% of range) (reference junction compensation accuracy not included)
RTD range: Within ±(0.1% of rdg + 0.2°C)
• Allowable input voltage:
±10 VDC for thermocouple, DC voltage (200 mV range or lower), RTD, DI (contact input)
±30 VDC for voltage (2 V range or higher), DI (level)
• Noise rejection ratio (50/60 Hz)
Can be specified by the measurement mode and power frequency. Select the power frequency for your region.

Measurement mode	Normal mode	Common mode
Standard[1]	40 dB or more[2, 3]	120 dB or more[2, 4]
Battery-save mode	No rejection	80 dB or more[2, 4]

1 Changed with the frequency setting.
2 The RTD range is a value converted to voltage when running the measurement current.
3 50/60 Hz±0.1%.
4 50/60 Hz±0.1%, 500 Ω unbalanced, between the negative measurement terminal and ground

• Normal mode voltage
Thermocouple, DC voltage, DI (voltage): 1.2 times the range rating or less
Standard signal:
0.4-2 V range: 2.4 V
1-5 V range: 6 V
RTD: 5 mV peak
* 50/60 Hz, peak value including the signal component.
• Maximum common mode noise voltage between measurement input channels: 30 VAC rms (50/60 Hz) or ±60 VDC
• Effects of magnetic field: Fluctuation in response to a magnetic field of AC (50/60 Hz) 400 A/m is ±(0.1% of rdg + 0.1% of range) or less
• Input calibration value
Factory default input calibration value is stored. The value can be returned to the factory default input calibration value from the user setting.

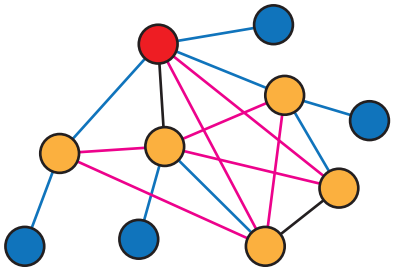
Option

• Humidity measurement (/RH)
Measurement accuracy: ±4%RH (23±2°C, 55 ±10%RH, with the temperature and humidity balanced)
Measuring range: 0 to 90%RH
Hysteresis: ±2%RH
Resolution: 0.1%RH

• Enhanced data backup function (/DB)
Number of data logging points: Max 9000 data
Send (scan) interval: Fastest 30 seconds
Data transmission: It sends the data within the specified range according to the request of the wirelessly retrieved data from GX20/GP20/GM10.

Wireless Function Specifications

- Carrier frequency band: 902.1 MHz to 927.9 MHz
- Frequency band: 600 KHz
- Number of wireless channels: 43ch
- Maximum transmission output: 20 mW
- Wireless data rate: approx. 100 kbps
- Modulation method: GFSK
- Communication format:
  Mesh (connect up to 100 units including routers (repeaters) *)
  Communication route can be set.
  * Up to 20 wireless input units can be connected to a coordinator or repeater. Up to 96 wireless input units can be connected by connecting 4 repeaters to a coordinator.
  However, Up to 50 wireless input units can be connected when the GX70SM with /DB option.
  However, the number of technically possible connections varies depending on the wireless communication condition and the measurement/ transmission interval.



Mesh type

Mesh function	Compatible products
Coordinator	GX20, GP20, GM10
Router/repeater	GM10, UT32A, UT52A
Router (sensor)	GX70SM

- Security function: AES 128 bit encryption
- Send (scan) interval: Same as the scan interval
- Wireless communication configuration: Configured using dedicated software (Wireless Input Unit Configurator)
  Wireless configuration interface: USB 2.0 mini-B type
- Antenna: Internal or external antenna (antenna sold separately)
  SMA connector
- Communication distance [1]:
  Internal antenna: Line-of-sight approx. 300 m
  External antenna: Line-of-sight distance: approx. 800 m
  1 At an antenna height of 1.5 m or more off the ground. Communication distance varies depending on the installation location and environment.
- Firmware version of connectable coordinator and router (repeater) wireless modules: V 4.2.0 and later
  Note) If the firmware version of the coordinator or router (repeater) wireless module is not compatible with the wireless input unit, you need to update it.

- Dedicated external antenna (sold separately)

Item	Type	
	Sleeve antenna	Roof top antenna
Part No.	A1061ER	A1062ER
Installation environment	Indoors	Indoors and outdoors
Cable length	—	2.5 m
Antenna type	Dipole	Monopole
Maximum gain	3 dBi or less	
Directivity	No	
Connector	SMA-R	
Operating temperature range	-20 to 65°C	
Waterproof property	Not waterproof	Water resistant (IPX6)
Dimensions	196 mm (including the connector)	83 mm (including the base stand)
		

Note 1) Can only be used in combination with the dedicated antenna.
Note 2) When using an external antenna, we recommend aligning the direction of the antenna of the peer device and the direction of the antenna of this device to maintain communication quality.
Note 3) To bring out the full performance of the roof top antenna, install it on top of a metal rectangle board that is at least 10 x 20 cm long.
Note 4) Install antennas as far as possible from metal objects and other obstacles. The communication quality may deteriorate if they are close.

Number of Connectible GX70SMs and Recommended Send (scan) Interval

When considering preventing data omissions, we recommend the following send (scan) interval.

The number of connected GX70SM	Send (scan) interval
2 (without repeater)	10 sec or more
5 (without repeater)	20 sec or more
20 (without repeater)	30 sec or more
50 (with repeater)	1 min or more
51 or more (with repeater)	2 min or more

Note 1) The values in the table are guidelines for preventing data loss. Arrival of data is not guaranteed.
Note 2) Use the following as a guide for the setting: Timeout time of the data loss alarm > Send (scan) interval × 2.
Note 3) This can change depending on the number of repeaters and other conditions.
Note 4) The table is a guide based on wireless communication module vd1.3 (coordinator, router vf4.4).

Power Supply

- Battery-driven
  Compatible battery: CR123A, CR17345 (Lithium primary battery, 3.0 V/1,400 mAh or more) x 2 pieces
  Note: Batteries are not included. Please obtain them separately (recommended battery manufacturer: Panasonic).

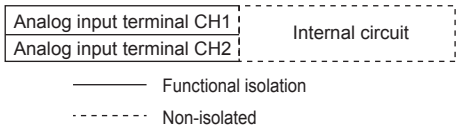
Estimated battery life
Under the following conditions, the battery runs for about 5 years or about 4 years (with /DB option) in standard mode and about 7 years or about 5 years (with /DB option) in battery-save mode.*

Conditions: Ambient temperature 23±2°C
Send (scan) interval: 5 minutes
LED display: Off
* The battery life varies depending on the environmental conditions such as ambient temperature and vibration.

- USB power
  Compatible USB AC/DC adapter: 5 V DC±5% / 500 mA
  Connector: USB2.0 mini-B connector

Isolation

- Withstand voltage
  Functional isolation between channels: 200 V AC (50/60 Hz) (except the A terminal)
- Isolation diagram



Standards Compliance

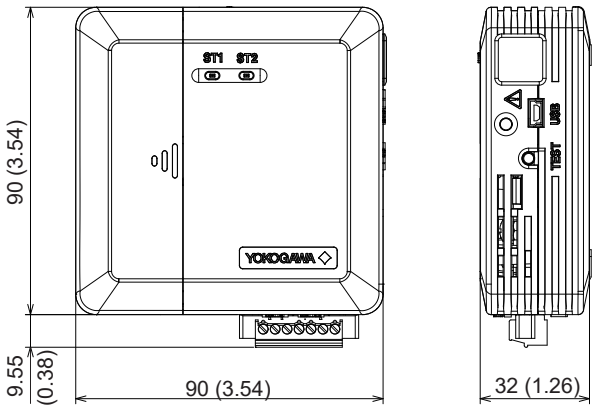
- US: FCC Part15 Subpart C compliant (15.247)
- Wireless communication standard: IEEE 802.15.4g
- CSA C22.2 No. 61010-1,
  CSA-C22.2 No. 61010-2-030
  Overvoltage Category I, Pollution Degree 2,
  Measurement Category O
- UL 61010-1, UL Std. No. 61010-2-030 (CSA NRTL/C)
  Overvoltage Category I, Pollution Degree 2,
  Measurement Category O

Construction

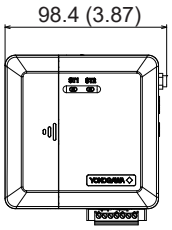
- Case: Polycarbonate
- Degrees of protection: IP20
- Connector: 7-pin clamp terminal
- Installation methods: Wall mount (fastened with screws), hooked, on a desktop, mounted with the magnet
- Color: Smoke gray (Munsell 4.1PB 6.0/4.5 equivalent)
- External dimensions: 90 (W) x 90 (H) x 32 (D) mm
- Weight: Approx. 300 g

External Dimensions

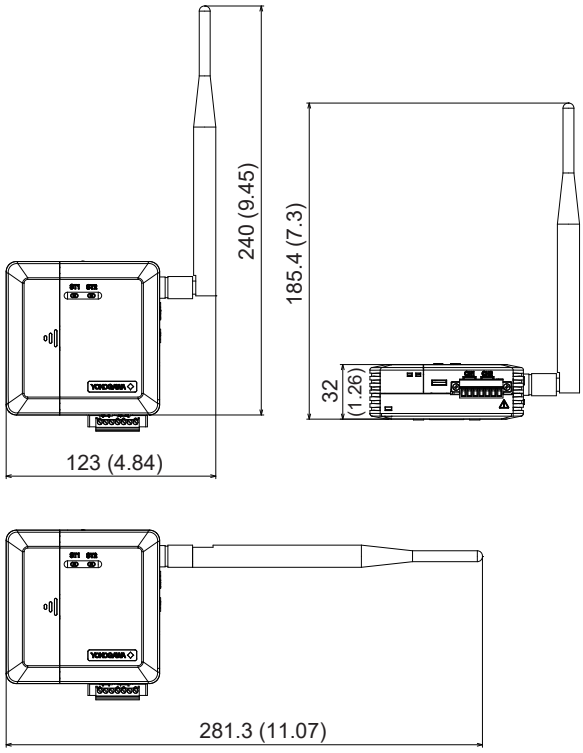
Unit: mm
Unless otherwise specified, tolerance is ±3 %
(however, tolerance is ±0.3 mm when below 10 mm).



When using the roof top antenna

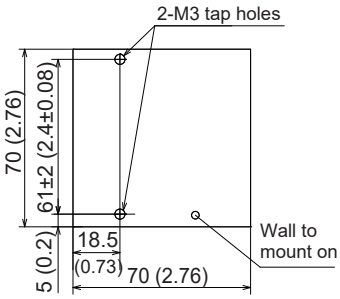


When using the sleeve antenna

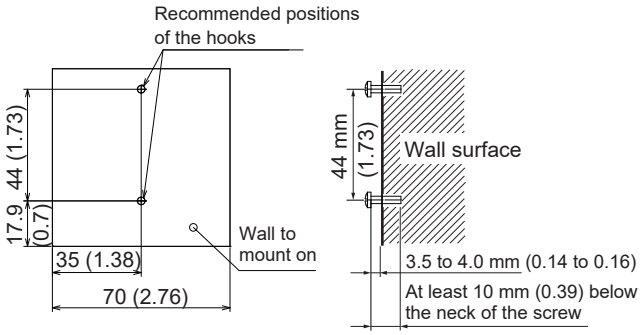


Wall mount hole dimensions

Mounted on a wall



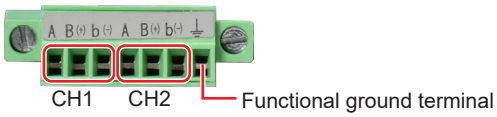
Hooked on a wall



Installation Dimensions

- Wall mount (fastened with screws)
  M3 screw, thread length 12 mm or more
  Tightening torque: 0.6 to 0.7 N•m
- Hooked
  Round wood screw: M3.5
  At least 10 mm below the neck of the screw
  Amount of screw showing from the wall surface to the screw head: 3.5 to 4.0 mm
- On a desktop
- Mounted with the magnet
  Minimum installation area: 50×70 mm

Terminal Arrangement



Symbol						
CH1			CH2			
A	B (+)	b (–)	A	B (+)	b (–)	

Recommended wire: AWG14-28

Recommended tightening torque: Approx. 0.2 N•m or less

Other Functional Specifications

- Status display
  Configuration mode, data transmission, and battery status are indicated with LEDs (green and red). (Indication can be turned off.)

Status		LED	
		Green (ST1)	Red (ST2)
Configuration mode		Green and red blinking in sync at 2 second intervals	
Configuration change and during calibration		Green and red blinking quickly in sync	
During measurement or data transmission	Network authentication	Blinking (about 0.2 second intervals)	Off
	No network authentication	Off	Blinking (about 0.2 second intervals)
Low battery warning		Green lit (0.1 seconds), all off (1.9 seconds) Red lit (0.1 seconds), all off (1.9 seconds) The above sequence is repeated twice, and then the LEDs are off for 10 seconds.	
Input error		Off	Lit for 0.1 seconds at about 5 second intervals
Mode setting error *		Repeats the sequence of green and red lit in sync (0.1 seconds) and all off (0.9 seconds) three times, turns off for 2 seconds, and repeats the entire sequence.	

* For example, configuring in a mode other than measurement mode when there is no USB connection.

- Self-diagnosis function
  Transmits the following device status to the coordinator
  - Low battery warning: Low battery voltage detected.
  - Critical low battery warning: Minimum drive voltage detected. Batteries must be replaced quickly.
  - Input error:
    Calibration value error
    A/D error
    Hardware error
    Memory error
    Process error
  - Wireless communication error: Configuration mismatch, ambient radio environment detection
- Firmware upload
  Firmware can be updated using the Wireless Input Unit Configurator.
- Operation mode
  Change between measurement and configuration mode with a switch.
- Wireless function*
  The wireless function can be turned on and off with a switch.
  * When using the GX70SM as a standalone data logger, you can turn off the wireless function to prolong the battery life.
- Data logging function
  Saves up to 4500 or 9000 (with /DB option) data points per channel.

Normal Operating Conditions

- Ambient temperature: -20 to 70°C
- Temperature change rate: 10°C/h or less
- Ambient humidity: 0 to 90% RH (no condensation)
- Magnetic field: 400 A/m or less (DC and 50/60 Hz)
- Vibration:
  5 ≤ f < 8.4 Hz amplitude 3.5 mm (peak)
  8.4 ≤ f ≤ 160 Hz acceleration 9.8 m/s^2 or less
  (excluding hooking and magnet mount)
- Shock:
  Power supply on, 500 m/s^2 or less, approx. 11 ms
  6 directions (± X, ± Y, ± Z) three times each
  Power supply off, 98 m/s^2 or less, approx. 11 ms
  6 directions (± X, ± Y, ± Z) three times each
- Altitude: 2000 m or less
- Installation location: Indoors

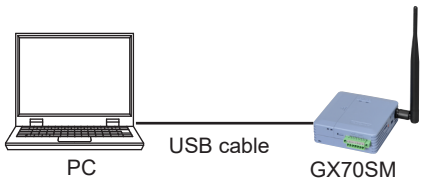
Transport and Storage Conditions

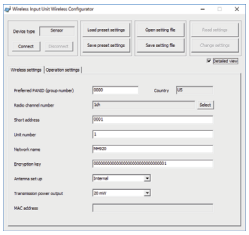
- Ambient temperature: -25 to 70°C
- Ambient humidity: 5 to 95% RH (no condensation)
- Vibration: 10 to 60 Hz, 4.9 m/s^2 or less
- Shock: 392 m/s^2 maximum (in packaged condition)

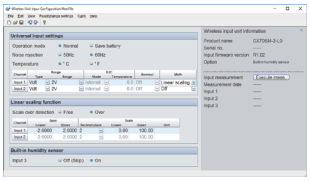
■ Wireless Input Unit Tool Specifications

Wireless Input Unit Configurator

A software application for configuring and performing maintenance on wireless input units.







Features

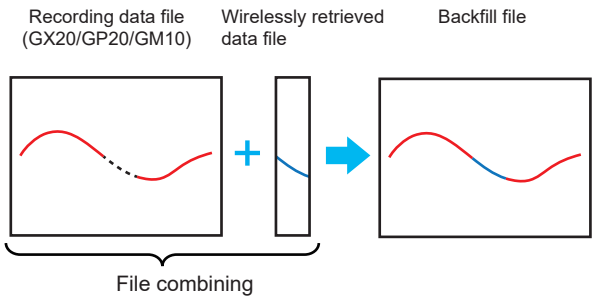
- Wireless configuration: Wireless communication, Send (scan) interval, LED settings, etc.
- Input configuration: Input range, linear scaling, measurement mode, etc. Modification history management is possible.
- Input calibration: Input calibration is possible.
- Firmware updating: Wireless and input firmware can be updated.
- Logging data function:
  The logging data held by the wireless input unit can be saved to a file.*
  Wirelessly retrieved data files created using GX20/GP20/GM10 can be combined with missing sections of the GX20/GP20/GM10 recording data (event data) using the Auto Backfill Tool (application software).

  * Wirelessly retrieved data file when collecting data from GX70SM (with /DB option)

  Note: Power supply form USB is required during wireless input unit configuration. Use a powered USB cable.

Auto-Backfill Tool

It is an application software that is used to automatically combine any GX20/GP20/GM10 recording data (event data) that is missing from the GX70SM data with the wirelessly retrieved data (missing data).



Features

- It automatically combines GX20/GP20/GM10 recording data files with wirelessly retrieved data files, and creates backfill files with the missing data filled in.
- Recording data files can also be combined manually with wirelessly retrieved data files at any time.
- Backfill files can be displayed on the SMARTDAC+ Universal Viewer and signatures can be attached to them.

PC System Requirements

OS:

OS	Type
Windows 10	Home (32- or 64-bit edition)
	Pro (32- or 64-bit edition)

Yokogawa will also stop supporting OSs that Microsoft Corporation no longer supports.

Processor and main memory:

OS	CPU and main memory
Windows 10	Intel Core2 Duo E6300 or faster x64 or x86 processor At least 2GB.

Hard disk:
100MB or more of free space (depending on the amount of data, you may need more memory), NTFS recommended.

Display:
OS compatible display with a resolution of 1024×768 dots or higher and High Color or higher

Mouse:
Mouse compatible with the OS

Communication port:
USB port

Other:
Microsoft .NET Framework 4.6.1 or later*

* Required to connect and operate the wireless input unit.

■ Wireless Input Unit Support Function of the GX20/GP20/GM10 (/CM2 option) (version R4.02.01 and later)

Data collection and status monitoring of wireless input units are possible.

Supported Functions

- Number of GX70SM connections*

Model	Measurement mode (GX/GP/GM)			
	Normal		High speed	Dual interval
	Wireless data retrieval Off	Wireless data retrieval On		
GX20-1/GP20-1 /GM10-1	Max. 50 devices	Max. 30 devices	Max. 50 devices	Max. 30 devices
GX20-2/GP20-2 /GM10-2	Max. 96 devices	Max. 50 device	Max. 96 devices	Max. 50 devices

* The number of technically possible connections varies depending on the wireless communication condition and the measurement/transmission interval.
The wireless data retrieval function can be used when the advanced security function (/AS option) is enabled. (However, it cannot be used when the multi-batch function (/BT option) is enabled.)
Measurement modes High speed and Dual interval cannot be used when the advanced security function (/AS option) is enabled.

- Auto configuration function
  Automatically configures the wireless input unit data collection settings.
- Wireless data dropout detection function
  Detects data collection dropouts due to wireless communication errors or the like.
- Management, monitoring, and maintenance functions
  Displays wireless input unit information.
  Status monitoring and maintenance period management are available.
- Loop calibration function
  Wireless input data correction using the calibration correction function
- Web application and Hardware Configurator also support wireless input unit functions.
- Wireless data retrieval (version 4.09 and later) [1] [2]
  It is a function that is used to detect if there is any missing data from the data collected by GX70SM (with /DB option), collect the missing data from GX70SM automatically, and create a file for it (wirelessly retrieved data file). The file that was created can be saved to an SD memory card and transferred via FTP.
  Wirelessly retrieved data files can be combined with missing sections of the GX20/GP20/GM10 recording data using the Auto Backfill Tool.

1 It is enabled for GX70SM with /DB option.
2 Only available when the advanced security function (/AS option) is enabled. However, it cannot be used when the multi-batch function (/BT option) is enabled.
Also wireless communication module version is v4.4.0 and later.

■ Model and Suffix Codes

Model	Suffix code					Optional suffix code	Description
GX70SM							Wireless Input Unit
Number of channels	-2						2 channels
Type		-L0					Universal input, scanner type (isolation between channels)
—			N				Always N
Terminal type				-C			Clamp terminal
Area					A		For the USA, FCC Approval
Option						/DB	Enhanced data backup function*
						/RH	Built-in humidity sensor, 1 channel

* A new GX20, GP20, or GM10 meeting the following conditions is required to use the backfill function.
- Firmware version R4.09 or later
- Wireless communications module version v4.4.0 or later
- With /AS option

■ Standard Accessories

Name	Quantity
Manual (First Step Guide IM 04L57B01-02EN)	1

■ Optional Accessories (Sold separately)

Name	Model or Part
Sleeve antenna (indoor use)	A1061ER
Roof top antenna (indoor and outdoor use, cable length: 2.5 m)	A1062ER
Input terminal block	A2226JT
Shunt resister for clamp terminal (250 Ω ± 0.1 %)	438920
Shunt resister for clamp terminal (100 Ω ± 0.1 %)	438921
Shunt resister for clamp terminal (10 Ω ± 0.1 %)	438922

Test certificate (QIC), calibration certificate (sold separately)
Test certificate and calibration certificate can be purchased.

■ Application Software

SMARTDAC+ STANDARD
- Hardware Configurator
- Universal Viewer
- Wireless Input Unit Tool
  Wireless Input Unit Configurator/Auto Backfill Tool

Download the latest version of the software from the following URL.

URL: www.smartdacplus.com/software/en/

■ Notes on 920 MHz Wireless Communication

This equipment is designed for use in the US only and cannot be used in any other country.

- **The radio signal may become weaker due to the operating environment, such as radio interference and obstacles in the communication route, leading to a communication error with the wireless communication temporarily disrupted.**
  If the radio signal continues to weaken, the communication error may continue for a long period of time.
- **Communication may not be possible in the following locations due to the surrounding environment.**
  - Where strong magnetic field, static electricity, or radio interference occurs.
  - Rooms with metallic walls (including concrete containing metal reinforcement material), cases, shelves, gratings, windows with metal mesh, and walls with thick concrete.
  - Within warehouses for liquid containers.
- **The backfill function may not work properly if you use it in an environment with bad wireless connection, or if you do not configure or operate it in the right way.**
- **If another wireless device using the same radio frequency band as this product is present in the communication area of this product, data rate degradation or communication errors may occur, preventing normal communication.**
- **This product has obtained FCC marking. As such, the following acts may be punishable by law.**
  - Disassembling or altering the product.
  - Removing the certification label.
  - Using an antenna other than the specified option.
- **Because this product uses radio signals, bear in mind that communication may be intercepted by third parties.**

■ Liability

YOKOGAWA assumes no liability to any party for any loss or damage, direct or indirect, caused by lost or missing data due to interrupted wireless or cable communication, or the use of the product outside the design, specifications, or handling conditions.

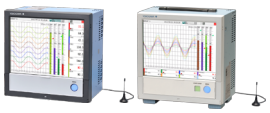
Except for the matters stipulated in the warranty of this product, YOKOGAWA does not guarantee any measurement data and operation taken when there is a failure, erroneous operation, and problem with the product.

User's Manual
You can download the product user's manuals from the following URL. You will need Adobe Acrobat Reader (latest version recommended) by Adobe Systems.

URL: www.smartdacplus.com/manual/en/

920 MHz wireless communication devices

Coordinator:	GX20 Paperless Recorder (/CM2/MC option): GS 04L51B01-01EN GP20 Paperless Recorder (/CM2/MC option): GS 04L52B01-01EN GX20/GP20 (/CM2/MC option) GM (/CM2/MC and /CS2 options) 920MHz Wireless Communication GS 04L51B01-42EN
Coordinator, router (repeater):	GM10 Data Acquisition System (/CM2/MC, /CS2 option): GS 04L55B01-01EN GX20/GP20 (/CM2/MC option) GM (/CM2/MC and /CS2 options) 920MHz Wireless Communication GS 04L51B01-42EN
GX/GP/GM I/O module:	GX90XA/GX90XD/GX90YD/GX90WD/GX90XP/GX90YA I/O Module GS 04L53B01-01EN
Router (repeater):	UT35A/MDL, UT32A/MDL Controller (DIN rail mounting type): GS 05P01D81-01EN UT55A/MDL, UT52A/MDL Controller (DIN rail mounting type) GS 05P01C81-01EN



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