SMART 920
920 MHz band wireless communication instrument series

Lower wiring costs and increase flexibility with 920 MHz wireless communication
The SMART 920 is a recorder and data logger with 920 MHz band wireless communication technology. 920 MHz wireless has a longer range than the 2.4 GHz band used in wireless LAN, and has greater reach around obstacles making it favorable for long-distances or highly obstructed environments.

It's easy to miss details when you don't see the whole picture. SMART 920 allows you to see everything.

SMART 920 Features
- Flexible wireless (multihop) communication
- High speed, highly reliable, multichannel communication
- Communication disconnection alarms
- Base unit (GP20) for portable use
- Supports Part 11
- Wired and wireless connection
- Interpolates lost data (with the GX70SM)
- Battery powered, installs in a variety of locations (with the GX70SM)

See the factory as a whole
With strategic use of wired and wireless you collect more data that lets you see the overall factory. For example, by linking data from the main production line with environmental data, you see the entire factory.

Robust communication
In a multihop network, when poor radio conditions result in lost a signal, the signal is automatically rerouted to the optimum connection.

Less labor, less cost
Say goodbye to costly wiring.

Installation and operation made easy
Installs easily, no new network infrastructure needed. And with wireless, it’s easy to move equipment around.

Enables long distance data acquisition
You can also send data over long distances. This allows for communication between factories and offices.
Features of the GX70SM compact, battery powered wireless input unit

- **Battery powered**
  Scan interval of 5 minutes, 5-year battery life (varies with operating conditions), supports USB power.

- **Multi input**
  2 ch of universal input, 1 ch of humidity measurement (option)

- **Single/loop calibration**
  Supports traceability, and input calibration by user.

- **Secure data**
  Wireless terminal authentication blocks unauthorized access. Encrypted communication prevents tampering and eavesdropping.

- **Linear scaling**
  You can apply linear scaling to the sensor signal and measure it.

Automatic warehouse temperature and humidity control

- **Battery status display (GX/GP/GM master)**
  The battery status of the GX70SM appears in the trend, numeric, bar graph, and other monitor screens.

- **Backup function**
  Saves logging data at fixed intervals (4500 data points). Interpolates data in the unlikely event of loss.

- **Installs in a variety of locations**
  4 installation methods (wall mount (with screws), wall hanging, magnet, desktop)

- **NEW**
  Automatically switches communication channels

- **Up to 16 hops**
  Supports a broad range of applications from small to multi-point

- **1 sec. or less**
  Up to 100 units

- **Modbus master commands: Up to 100**
  Communication channels: Up to 500 (large memory type)

- **Approx. 700 m**
  Slave (on site)

- **Slave for distributed installation**

- **Wall hanging holes**

- **Wall mount screw holes**

- **Battery status display (GX/GP/GM master)**

- **Alarm detects and alerts when communication is lost**

- **Stable wireless communication function**

- **Automatic channel switching with multi-hop technology**

- **Wireless terminal authentication**
  Blocks unauthorized access.

- **Encrypted communication**
  Prevents tampering and eavesdropping.

- **Slave**

- **Master**

- **Slave (on site)**

- **Slave for distributed installation**

- **Master (office)**

- **Alarm detection**

- **Alarm**

- **Monitoring**

- **Saves logging data at fixed intervals (4500 data points)**
  Interpolates data in the unlikely event of loss.

- **Customize how you send key data**

- **Automatic channel switching with multi-hop technology**
  Up to 16 hops

- **Supports a broad range of applications from small to multi-point**

- **1 sec. or less**
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- **Modbus master commands: Up to 100**
  Communication channels: Up to 500 (large memory type)
Storage warehouse door state and temperature monitoring

Monitor the temperature of the warehouse and check whether the door is open right from the office. Customize your display for immediate grasp of conditions.

Remotely Monitor Operating Conditions

Clean room The ability to remotely monitor conditions in clean rooms is crucial in industries such as pharmaceutical/bio-tech or food and beverage.

Energy Monitoring

Monitor integrated values of watt hours with hourly, weekly, and monthly reports. You can also compare with past data.

Wirelessly connects to PLCs

Clean room temperature and humidity control

The GX70SM wireless input unit is battery powered, has a built-in humidity sensor, and supports user-calibration.

Improve the factory working environment

Superior response to sharp temperature changes. Contributes to temperature and humidity control, and helps prevent heatstroke.

FDA 21 CFR PART 11
### I/O module

The SMARTDAC+ GX/GP/GM I/O is modular for easy scalability.

For the GX90Xi/G module, GX60 expansion unit, GX90EX expansion modules, GM90MB module base, add-ons and accessories, see the GX/GP or GM catalogs. GX/GP catalogs No.: Bulletin 04L51B01-01EN

GM catalogs No.: Bulletin 04L55B01-01EN

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### Select from the lineup according to your installation needs

- **As a parent device...** **GX20**
  - **GM20** Model and Suffix code
  - **5** SMART 920     920 MHz band wireless communication instrument series
  - The **I/O module**
  - **4** **3** will **1** To **for** **GM** connect **GP**.
  - **I/O**, the **G**
  - **Display**
  - **Optional**
  - **language E**
  - **AH** Aerospace heat treatment
  - **AS** Advanced security function (Part 11)
  - **BC** Black cover
  - **BT** Multi-batch function
  - **RS-232**
  - **RS-422/485**
  - **Custom display**
  - **D5** VGA output
  - **E1** EtherNet/IP communication (PLC communication protocol)
  - **E2** WT communication
  - **E3** OPC-UA server
  - **E4** SLMP communication (Mitsubishi PLC)
  - **FL** Fail output, 1 point
  - **LG** Log scale
  - **MT** Mathematical function (with report function)
  - **MC** Communication channel function
  - **P1** 24 V DC/AC power supply
  - **PG** Program control function
  - **UH** USB interface (Host 2 ports)
  - **CM3** 920 MHz wireless communication (master function)

*1 To connect an expandable I/O, GM sub unit, you will need one expansion module for the GX.
*2 The Display language is selectable.
*3 /C2, /C3 and /CM3 cannot be specified together.
*4 Creating custom displays requires DWA170 DAQ Studio (sold separately). GX does not have a creation function.
*5 AM option must be separately specified when the WT communication is selected.
*6 Optional code /MT (MATH) required if using the GX90XD’s or GX90XW’s pulse input.
*7 The /MT option (computation) is required to perform pulse integration on GX90XP pulse input modules.
*8 The /MC option is required at the same time.

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### GX20 Model and Suffix code

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Optional code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GX20</td>
<td></td>
<td></td>
<td>Paperless recorder (Panel mount type, Large display) 1*</td>
</tr>
<tr>
<td>Type</td>
<td>-1</td>
<td></td>
<td>Standard (Max. measurement channels: 100 ch)</td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td></td>
<td>Large memory (Max. measurement channels: 500 ch)</td>
</tr>
</tbody>
</table>

**Optional features**

- **AH** English, de, fr, DST (summer/winter time) 2*
- **AS** Advanced security function (Part 11)
- **BC** Black cover
- **BT** Multi-batch function
- **RS-232**
- **RS-422/485**
- **Custom display**
- **D5** VGA output
- **E1** EtherNet/IP communication (PLC communication protocol)
- **E2** WT communication
- **E3** OPC-UA server
- **E4** SLMP communication (Mitsubishi PLC)
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- **P1** 24 V DC/AC power supply
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- **UH** USB interface (Host 2 ports)
- **CM3** 920 MHz wireless communication (master function)

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### GP20 Model and Suffix code

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**Optional features**

- **AH** English, de, fr, DST (summer/winter time) 2*
- **AS** Advanced security function (Part 11)
- **BC** Black cover
- **BT** Multi-batch function
- **RS-232**
- **RS-422/485**
- **Custom display**
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- **FL** Fail output, 1 point
- **LG** Log scale
- **MT** Mathematical function (with report function)
- **MC** Communication channel function
- **P1** 24 V DC/AC power supply
- **PG** Program control function
- **UH** USB interface (Host 2 ports)
- **CM3** 920 MHz wireless communication (master function)

*1 To connect an expandable I/O, GM sub unit, you will need one expansion module for the GP.
*2 The Display language is selectable.
*3 /C2, /C3 and /CM3 cannot be specified together.
*4 Creating custom displays requires DWA170 DAQ Studio (sold separately). GX does not have a creation function.
*5 AM option must be separately specified when the WT communication is selected.
*6 Optional code /MT (MATH) required if using the GX90XD’s or GX90XW’s pulse input.
*7 The /MT option (computation) is required to perform pulse integration on GX90XP pulse input modules.
*8 The /MC option is required at the same time.
### GM10 Model and Suffix code

<table>
<thead>
<tr>
<th>Model Suffix code</th>
<th>Optional code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM10 Type -1</td>
<td></td>
<td>Data Acquisition Module for SMARTDAC+ GM10</td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td>Large memory (Max. measurement channels: 500 ch)</td>
</tr>
</tbody>
</table>

**Area**
- E: General
- : Zero

**Optional features**
- /AH: Aerospace heat treatment
- /AS: Advanced security function
- /BT: Multi-batch function
- /C3: RS-422/485 function
- /C8: Bluetooth
- /E1: EtherNet/IP communication (PLC communication protocol)
- /E2: WT communication
- /E3: OPC-UA server
- /MT: SLMP communication (Mitsubishi PLC)
- /MC: Communication channel function
- /LG: Log scale
- /PG: Program control function
- /CM3: 920 MHz wireless communication (master function) (with report function)
- /CS3: 920 MHz wireless communication (slave function)
- /WH: Integration bar graph function

*1: I/C, /CM3, and /CS3 cannot be specified together.
*2: Communication channel function (I/MC option) must be specified at the same time with WT communication.
*3: Optional code (I/MC, I/MC) required if using the GX90WD’s or GX90W’s pulse input.
*4: Optional code (I/MC, I/MC) required if using the GX90W’s pulse integration.
*5: The /MC option is required at the same time.
*6: The /MC and /MT options are required at the same time.

### GM90PS Model and Suffix code

For 100–240 VAC power (inlet), GM90PS-1N1:30/W3
For 100–240 VAC power (M4 screw), GM90PS-1N1W0/W3
For 12–28 VDC power (M4 screw), GM90PS-1N2W0/W3

* If you specify /WH option for the GM10, you must also specify /WH option for the GM90PS.

### UT32A Model and Suffix code

**UT32A-00C-11-00/MDL**

Optional suffix codes: /DC, /CT, /CV

* For details on the UT32A, see the UT32A (DIN rail type) general specifications (GU5SBP01CB1-00EN).

**Ordering requirements**
- Specify either the GX20/GP20 or GM10 as the master.
- Specify the GM10 or UT32A as the slave or repeater device.
- Specify the GX70SM as the slave device.
- Specify a sleeve or rooftop antenna for the wireless antenna.

### Accessories

**Sleeve antenna (Part no.: A1061ER)**

Used when installing with the main unit, such as inside the casing. For indoor use.

**Rooftop antenna (Part no.: A1062ER)**

For use when installing separately from the main unit. Can be used outdoors.

**Input terminal block (Part no.: A2226JT)**

The input terminals on the GX70SM wireless input unit.

**Wall Mount Bracket for UT32A (Model: UTAP005)**

Use for wall-mounting the UT32A.

### GX70SM Model and Suffix code

<table>
<thead>
<tr>
<th>Model Suffix code</th>
<th>Optional code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GX70SM Type -1</td>
<td></td>
<td>Wireless Input Unit</td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td>2 channels</td>
</tr>
</tbody>
</table>

**Number of channels**
- -02: Universal input, scanner type (isolation between channels)

**Area**
- : Always

**Terminal type**
- -C: Clamp terminal

**Option**
- /RH: Built-in humidity sensor, 1 channel

**Standard Accessories:** Manual, Magnet, Screw

* Batteries are not included. Please obtain them separately (recommended battery manufacturer: Panasonic)

### UPM100 Model and Suffix code

<table>
<thead>
<tr>
<th>Model Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM100 x x x x x -2 0</td>
<td>Universal Power Monitor</td>
</tr>
<tr>
<td>Phase and Wire Type -2</td>
<td>Single-phase 2-wire</td>
</tr>
<tr>
<td>-3</td>
<td>Three-phase 3-wire</td>
</tr>
<tr>
<td>-4</td>
<td>Three-phase 4-wire</td>
</tr>
<tr>
<td>Rated Input Voltage and Current -3</td>
<td>AC voltage 127 V AC for three-phase 4-wire</td>
</tr>
<tr>
<td>-4</td>
<td>AC voltage 277 V AC for three-phase 4-wire</td>
</tr>
<tr>
<td>-5</td>
<td>AC voltage 277 V AC for three-phase 4-wire</td>
</tr>
<tr>
<td>Output Function -5</td>
<td>Wh/MWh display function, without pulse output</td>
</tr>
<tr>
<td>-6</td>
<td>Wh/MWh display function, with pulse output</td>
</tr>
<tr>
<td>Optional Communication Function -7</td>
<td>Wh/MWh display function, with pulse output</td>
</tr>
<tr>
<td>Option /RH</td>
<td>Built-in Humidity Sensor</td>
</tr>
</tbody>
</table>

**Optional Measuring Function**
- 0: Integrated resolution kWh
- 1: Integrated resolution kWh / power factor
- 2: Integrated resolution kWh / reactive power, integrated reactive power
- 3: Integrated resolution kWh / reactive power, integrated reactive power
- 4: Integral resolution Wh
- 5: Integral resolution Wh / power factor
- 6: Integral resolution Wh / reactive power, integrated reactive power
- 7: Integral resolution Wh / reactive power, integrated reactive power

**Power Supply**
- 1: 85 to 264 V AC 50/60 Hz

**Fixed Code**
- 0: Always "0"

*1: 200 V AC (100 V + 100 V) for single-phase 3-wire
*2: Wireless communication option can only be used in the Republic of Korea.
*3: The unit is kvar or var when reactive power is selected.
Synaptic Business Automation creates sustainable value by connecting everything in our customers' organization. To realize this, Yokogawa integrates its business and domain knowledge with digital automation technologies, and co-innovates with customers to drive their business process transformation.