Gemba Reporter GB-1000/GB-2100

SMART COUNTER / BASE STATION INSTRUCTION MANUAL

GB-1000 / GB-2100

Thank you for purchasing our product, GB-1000 / GB-2100.
Please confirm that you have the correct device by checking the product label.
Please read this instruction manual carefully before using this device to ensure correct usage.
Please keep this instruction manual for future reference.
For more details, please refer to the set-up manual and operation manual available on our website at https://www.lineseiki.com.

⚠ **ATTENTION!**
Please note that misuse of this device may lead to injury to the user or damage to the device.
Please observe all safety precautions and warnings in this instruction manual.

⚠ ATTENTION!

- Do not install another wireless device or locate another radio device or antenna within 20cm of this device.
- Co-location of antenna of this device with any other antenna or transmitter is not allowed.
- Keep separation distance of at least 20cm (8 in.) between the antenna of this device and nearby person during device operation.
- This device is not intended for portable application.
- Do not use this device near machines that emit strong electromagnetic fields or objects that store static electricity.
- Do not put the device near metal objects or walls. Metal objects can highly interfere the 2.4GHz signal.
- Do not install the device near a grounded surface.
- For multiple devices installation, locate the router at the center of the installation area.
- Do not drop or subject this device to strong impact.
- Do not use or store this device where it will be exposed to water or any wet conditions.
- Do not use or store this device where it can be exposed to direct sunlight, dust, high temperature and high humidity.
- Do not attempt to disassemble or modify this device.
- Do not use organic solvents such as thinners etc. They will damage the external finish.
- Internal circuitry may be destroyed if a voltage outside the rated voltage is applied.
- Keep the input signal source, device itself or its wiring away from the noise source when the device is used in a noisy environment.

⚠ Conformance Warnings

For GB-1000: Contains FCC ID: 2AC7Z‐ESPWROOM02D, IC: 21098‐ESPWROOM02D
For GB-2100: Contains FCC ID: PPD‐AR5B225, IC: 4104A‐AR5B225
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. In case of interference, the user is encouraged to try to correct the interference by below measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
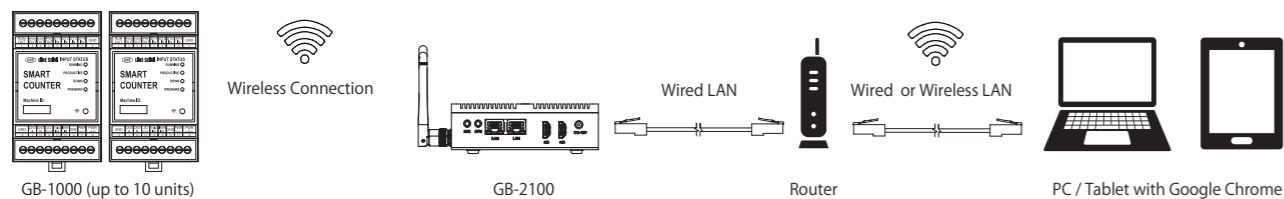
This device complies with FCC RF radiation exposure limits set forth for an uncontrolled enviroment. The antenna(s) used for this transmitter must not be co‐located or operated in conjunction with any other antenna or transmitter. A separation distance of 20cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance are not recommended.
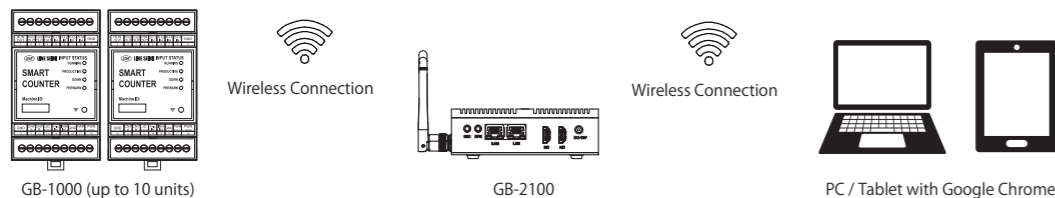
■ MODELS

MODEL	GB-1000	GB-2100
Product Name	Smart Counter	Base Station
Power Supply	DC12V	DC12V
Description	Add count input with watchdog timer, subtract count input, four(4) event inputs and four(4) status outputs.	Application Software with Database server, data gathering from up to 10 Smart Counters through wireless connection

■ SYSTEM SETUP

● LAN CONNECTION BETWEEN BASE STATION AND CLIENT DEVICES (Recommended)

GB-1000 (up to 10 units) — Wireless Connection — GB-2100 — Wired LAN — Router — Wired or Wireless LAN — PC / Tablet with Google Chrome

● WIRELESS CONNECTION BETWEEN BASE STATION AND CLIENT DEVICES

GB-1000 (up to 10 units) — Wireless Connection — GB-2100 — Wireless Connection — PC / Tablet with Google Chrome
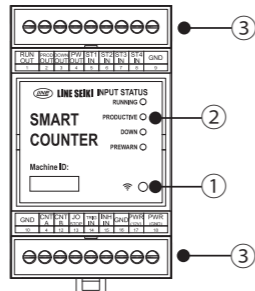
■ GB-1000 DEVICE OPERATION

The GB-1000 Smart Counter uses wireless communication to send data and communicate with GB-2100 Base Station.

The communication distance is up to 25m line-of-sight (without obstruction). The Smart Counter is not connected to any Base Station upon purchase. For more information on how to setup and connect the Smart Counter to the Base Station, refer to the set-up manual available on our website.

The GB-1000 Smart Counter starts logging when it received the JO START command initiated by the user on the Gemba Reporter web application that is hosted by the Base Station.

The Gemba Reporter web application operation manual is also available on our website.

① Wireless connection indicator
RED: Smart Counter is not connected to the Base Station
AMBER: Smart Counter is connected to the Base Station and waiting for communication with the server.
GREEN: Smart Counter is connected to the Base Station and the server.
② JO Status
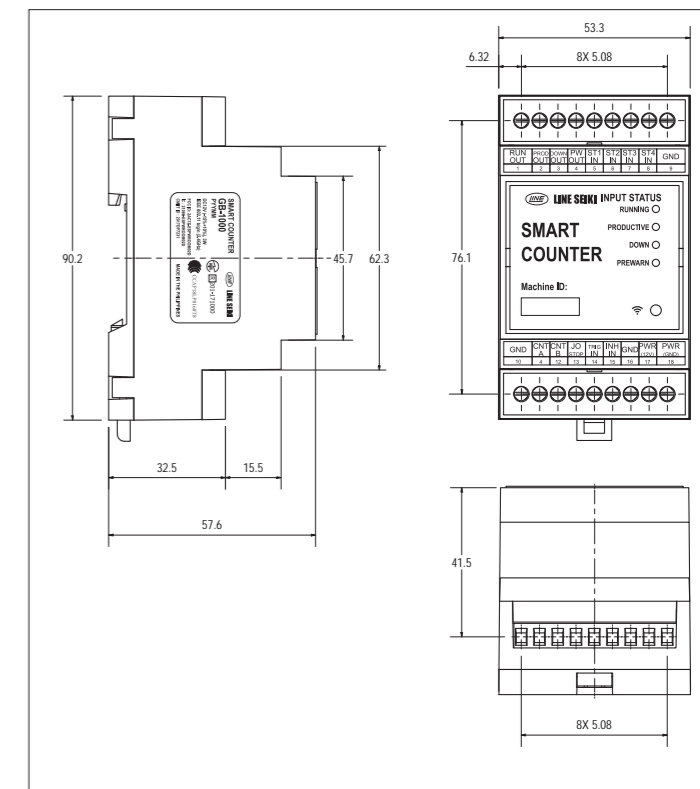③ Terminals

■ GB-1000 TERMINAL CONNECTION

Name	RUN OUT	PROD OUT	DOWN OUT	PW OUT	ST1 IN	ST2 IN	ST3 IN	ST4 IN	GND
Number	1	2	3	4	5	6	7	8	9
Description	JO Running Output	Productive Output	Unproductive Output	Prewarn Output	Status1 Input	Status2 Input	Status3 Input	Status4 Input	Signal Ground

Name	GND	CNT A	CNT B	JO STOP	TRIG IN	INH IN	GND	PWR(12V)	PWR(GND)
Number	10	11	12	13	14	15	16	17	18
Description	Signal Ground	Add Count Input	Subtract Count Input	End JO Input	Separate Record Input	Add Count Inhibit Input	Signal Ground	Power Input 12VDC	Power Input 0V

■ GB-1000 SPECIFICATIONS

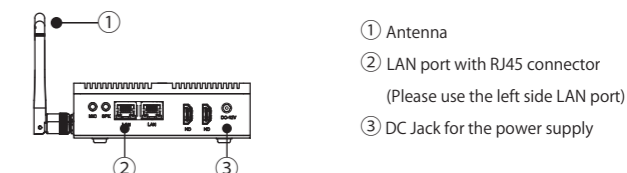| Model	GB-1000
Model Name	SMART COUNTER
Input Mode	Contact / Non-contact (open-collector) Input
Input	Contact / Non-contact Input: Open Collector L: <1V (Sink Current approx. 1.5mA) NPN Voltage Input: H: <30V, L: <1V (Sink Current approx. 1.5mA)
Input Speed	Count Input: 20Hz (Pulse Width: 25ms Duty 1:1) State Input: 1Hz (Pulse Width: 500ms Duty 1:1)
Input Terminals	Count Input x 2; State Input x 7
Count Range	0～1,000,0000,000 (both CNT A and CNT B)
Output Mode	Non-contact output Open-collector: DC35V / 40mA max.
Output Terminals	Running, Productive, Unproductive, Prewarn
Indicator	Wireless: LED (RGB) Output Status: 4 LED(Amber) - Running, Productive, Unproductive, Prewarn
Wireless Communication	IEEE 802.11 b/g/n (2.4GHz)
Wireless Range	Up to 25m Line-of-Sight (LOS)
Operating Channel	1～13 (adapts Base Station configuration)
Antenna	PCB Antenna (built-in to the module)
Certification of Wireless Module	FCC, IC, Japan Radio Law, NCC, SRRC
Memory	Data Retention: Approx. 20 years; 100,000 erase/write cycle (typ.)
Operating Humidity	35～85% RH (Non-condensing)
Operating Temperature	0～50°C (Non-freezing)
Storage Temperature	-10～60°C (Non-freezing)
Power	12VDC (-15% / +10%), 3W max.
Dimension	90(L) x 53(W) x 57(H) mm
Weight	Approx. 150g

■ GB-1000 DIMENSIONS

■ GB-2100 DEVICE OPERATION AND CONNECTION

The GB-2100 Base Station provides wireless connectivity to the Smart Counter units and act as a server for the web application and database. Up to 10 Smart Counters can be connected to one Base Station.

For better performance, it is recommended to connect the Base Station to customer's network thru LAN connection. For additional information, see the setup manual available on our website.

Only use the provided power supply and ensure that the 2 antennas are connected properly before turning ON the device.

① Antenna
② LAN port with RJ45 connector (Please use the left side LAN port)
③ DC Jack for the power supply

■ GB-2100 SPECIFICATIONS

Model	GB-2100
Model Name	BASE STATION (for Small System)
CPU	Celeron® N3160 Quad Core 1.60 GHz
SSD	32GB mSATA 3.0
RAM	4GB DDR3
OS	Linux
LAN	RJ45 LAN port
Wireless Communication	IEEE 802.11 b/g/n (2.4GHz)
Wireless Range	Up to 25m Line-of-Sight (LOS)
Operating Channel	1～13 (automatic)
Certification of Wireless Module	FCC, IC, Japan Radio Law, NCC, SRRC
Operating Humidity	35～80% RH (Non-condensing)
Operating Temperature	10～35°C
Power	12VDC 3A
Dimension	136(L) x 126(W) x 43(H) mm
Weight	Approx. 750g
Accessories	AC Power Adapter x 1, Antenna x 2

■ GB-2100 DIMENSIONS