

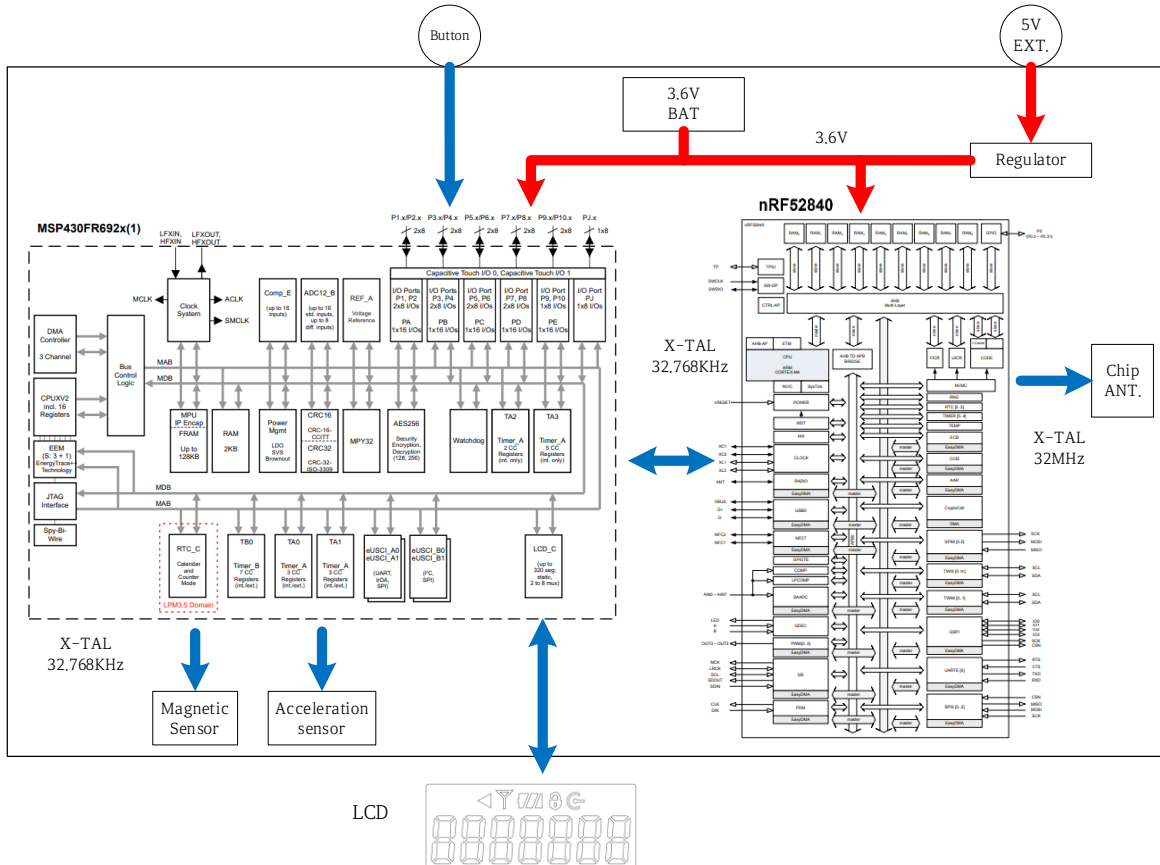
1. Summary

The autonomous digital shot counter (powered type) (PSM-NGC-P01) uses a low-power 16-bit microcontroller and a low-power 2.4GHz wireless communication chip (IEEE 802.15.4 / BLE5) and can use external power (5V).

This product is installed in production facilities, the measured production information is transmitted to the gateway (TERMINAL) using wireless communication, can receive specific information (time, set value, etc.) from the gateway (TERMINAL).

2. Module block diagram

- MCU(MSP430FR692x)
 - Control acceleration sensor and magnetic sensor and read data.
 - The data collected on the sensor is displayed on the LCD.
 - Display data on LCD according to Button input and communicate with BLE5 Chip.
- BLE Chip(nRF52840)
 - The data received from the MCU is transmitted by wireless communication (IEEE 802.15.4 / BLE5).
 - Transmit the data received by wireless communication to MCU.
- 3.6V BAT
 - Supply power to MCU and BLE5 Chip.
- 5V External Power
 - Supply power to MCU and BLE5 Chip through the regulator.
- Button
 - User commands are sent to the MCU.
- Acceleration sensor, magnetic sensor
 - The measured data is transferred to the MCU.

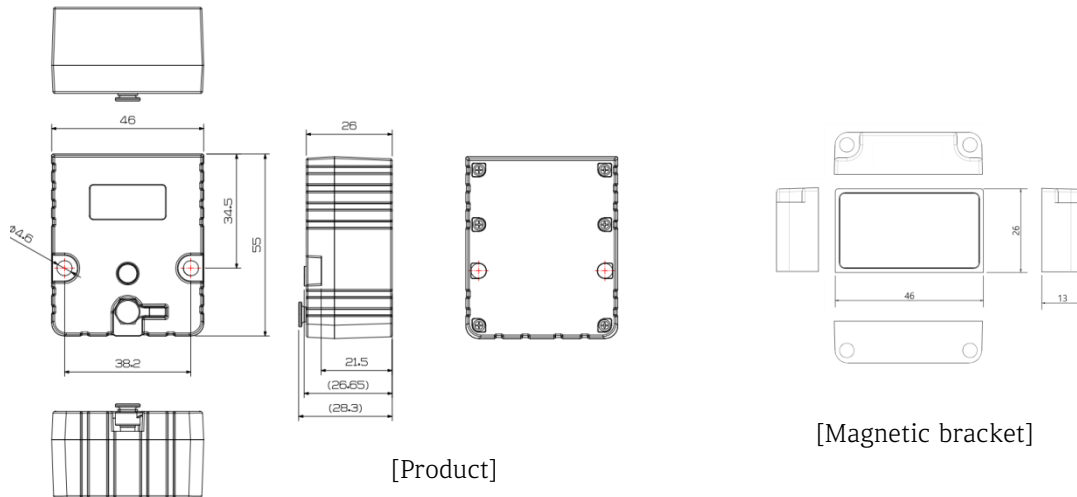


3. Appearance and part names



- ① Magnetic bracket
- ② Sensor part
- ③ LCD display
- ④ Button.
- ⑤ Hole to fix the product.
- ⑥ QR code (product number)
- ⑦ External power terminal

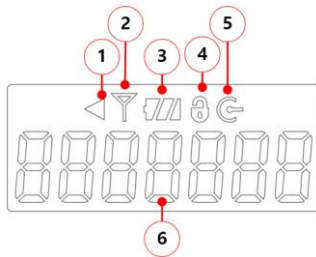
4. Size



[Product]

[Magnetic bracket]

5. Composition of LCD display



- ① Operation status
- ② Communication status (RF)
- ③ Battery status
- ④ Attached state
- ⑤ External power input
- ⑥ Cumulative shot and set value display

6. Product Information

① Features and functions

- ◆ 7-digit LCD and setting button
- ◆ Non-contact type (magnetic) shot count and integration (accumulation)
- ◆ Preset function (for replacement / installation)
- ◆ Improved ease of use with non-powered (replaceable battery) and wireless communication.
- ◆ Increased battery life by using external power.
- ◆ Secured data stability by applying low-power long-life and non-volatile memory.
- ◆ Attachment status check and temperature measurement function
- ◆ Acceleration measurement function

② Hardware specifications

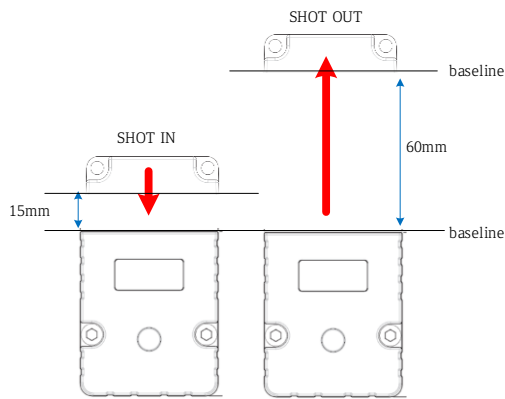
- ◆ 16bit MCU
- ◆ 256Kbit FRAM
- ◆ 2.4GHz BLE5

③ Rating

Usable temp.	-25 ~ 80 °C	Quality guarantee	2 years (based on manufacturing date)
Comm. cycle (RF)	24 times / day	Battery life	About 2 years (based on 20 °C, may vary depending on usage conditions)
Cycle time range	0.2 ~ 300 sec / Press	Size (mm)	55 x 46 x 26
	2 ~ 300 sec / Injection		

※ Please note that the service life of the battery may be shortened due to frequent operation or replacement.

④ Magnetic sensor recognition (SHOT)



Sensor recognition	Size (mm)
SHOT IN	< 15
SHOT OUT	> 60

※ Carefully install the product and the magnet bracket as they will break when installed beyond the baseline.

⑤ LCD display

The LCD display changes each time the button is pressed, and returns to the cumulative shot display mode within 30 seconds after the button is pressed.

No.	Display or setting	Display example	Initial value	Remark
1	Cumulative shots display	0 123456	0	-
2	Preset setting	PrESEt	-	-
3	ID display	110 1001	1101XXX	Manufacturing number: 0-999
4	Setting mode	2 SEtUP	-	-

※ When using for the first time, please press the button once. (If not pressed, the LCD will not be displayed.)

※ Use the button only when setting.

⑥ QR code (13 digits)

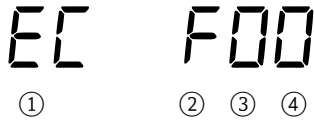
Digits	1	2	2	2	1	2	3
Code	Powered Type	Domestic / International	Year of production	Week of production	Injection/ Press	Comm. cycle	Manufacturing Number
Display	P	CM / CG	20	01	I / P	01	001

⑦ Communication status – Received signal strength indication (RSSI)

- ◆ Display for 3 seconds during manual communication
(Manual communication: Press the button for 3 seconds in the cumulative shot display mode)
- ◆ Display status
When communication is successful, the LCD displays as follows.



7. Trouble shooting



- ① EC (Error Code): If the communication status is not stable, the communication retries and communication success / failure status are displayed.
- ② F: Communication failure, Check the communication environment and retry communication.
If you still see communication failure, replace the counter.
- ③ Communication steps (1~3), Wireless connection steps (1~3)
- ④ Communication retries (1~2), Wireless connections (1~5)

예) EC F32: Communication retry - 1, Communication steps 3 - failure
EC F15: Wireless connections - 5, Wireless connection step 1 - failure

- ◆ Communication failure code and action.

Code	Description	Cause	Action
F11 ~ F15	Wireless connection failure	<input type="checkbox"/> System down <input type="checkbox"/> Unstable wireless comm. environment	<input type="checkbox"/> System inspection and improvement. <input type="checkbox"/> Wireless environment inspection and improvement
F11 ~ F32	Wireless connection failure and Data transmission verification failure	<input type="checkbox"/> System down <input type="checkbox"/> Unstable wireless comm. <input type="checkbox"/> product defect	<input type="checkbox"/> System inspection and improvement. <input type="checkbox"/> Wireless environment inspection and improvement <input type="checkbox"/> Product replacement or make inquiries

- ◆ Battery status

Battery indicator	Battery status and action
	normal
	Low voltage
	Under voltage, product replacement

※ Depending on the operating environment, such as temperature, there may be a temporary change in status.

8. Precautions

- ① When installing or removing in a hot mold, it may cause burns, so work safely at the proper temperature.
- ② Replace the counter within 1 month if the battery indicator () is blinking.
- ③ Temporary communication failure may occur depending on the metal wall or the enclosed environment causing radio interference, in case of continuous communication failure, check and remove the obstacle.
- ④ Please note that damages due to non-standard environment, carelessness of the user, or arbitrary operation cannot be serviced.

< FCC Compliance Statement >

FCC ID: 2AVSN-PSM-NGC-P01

**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.**

Do Not

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

Manufacturer



Sales, product inquiries



FCC Information to User

This equipment 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following 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.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : 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 equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.