DG-600 Stand Alone Reader
Operation Manual

Ⅰ.Features

1. Memory volume up to 600 proximity cards/tokens and PINs with the programming time up to 0.5 second.
2. Supports Wiegand 26-bit or 44-bit format auxiliary reader.
3. Access modes: a. only proximity card (default setting) b. proximity card+PIN c. proximity card or PIN
4. 5-digit PINs for 3-b and 3-c
5. Logical memory prevents duplicated card setting.
6. Lockout function: The controller will lockout for 60 seconds after entering 5 times invalid PINs or unsuccessful card attempts. (The keypad without beep during the period time)
7. Controller with keypad sound to avoid incorrect key-in.
8. Built-in tamper switch
9. Non-volatile memory allows remaining all setting codes in the event of total power failure.
10. Removable memory chip in the main control module allows on site replacement in the event of break down.

Ⅱ. Specifications

Operating Voltage	8.5VDC~16VDC
Current Draw	Pull in: 100mA @12VDC, Holding: 50mA @12VDC
RF Frequency	125 KHz
Read Range	10 cm (In noise-free environment)
Keypad	12-digit (0~9,＊,＃)
Input	1 contact for request-to-exit button 1 contact for door reed switch 1 contact for auxiliary reader
Output	2 relays（Dry contact）2A MAX @30VDC；0.4A @ 120VAC
LED Status Indication	3 LED indicators display (Red/Yellow/Green)
Memory Volume	600 proximity cards/tokens and PINs
Relay Electric Current	2A MAX @30VDC；0.4A @ 120VAC
Relay Strike Time	Relay 1：01~99seconds or Toggle Mode (00)
Ambient Humidity	5%~95% (Non-condensing)
Operating temperature	-20℃~70℃
Format	DG-600E：Wiegand 44 or 26-bit hexadecimal （EM 64 bits standard R/O or compatible）
	DG-600H：Wiegand 26~37 or 26-bit hexadecimal （125KHz 26~37 bits standard R/O）

Ⅲ. Indicator Status & Default Setting Parameters

Beep & LED Indication

	Mode	Signal	Status
LED	Standby	Yellow LED slow flash	Standby
		Green LED stay on	Door Relay active
		Red LED stay on	Alarm Relay active, invalid card, incorrect operation
	Programming	Yellow LED stay on	Enter programming mode
		Yellow LED rapid flash	Programming, awaiting input of PINs
		Green LED stay on	The slot position is available
		Red LED stay on	The slot position is unavailable
Beep	Standby	1 Beep	Valid card, key press, enter programming mode
		4 Beeps	Invalid card, incorrect PIN
	Programming	1 Beep	Correct Input data, Exit programming mode
		4 Beeps	Incorrect Input data, other incorrect operation, duplicated card setting

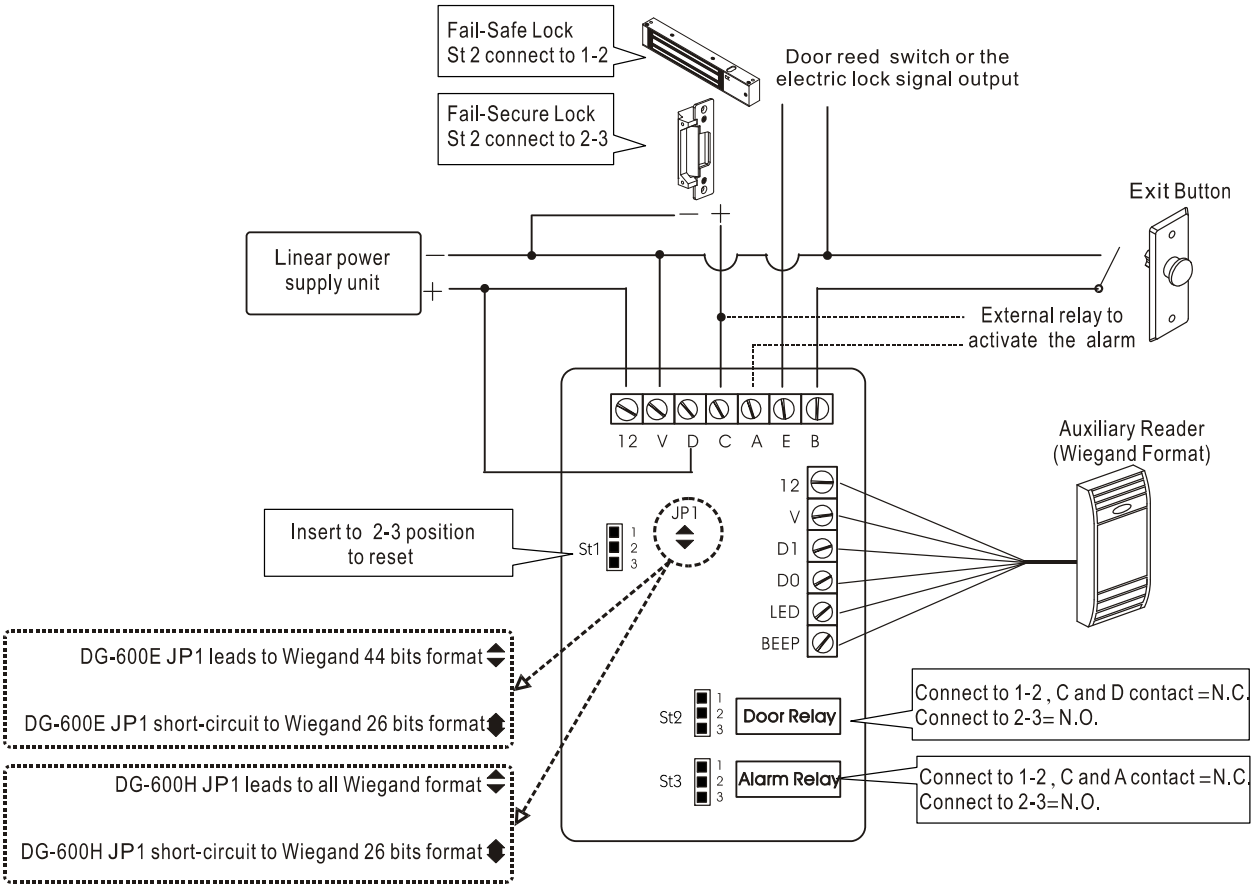
Factory Default Setting

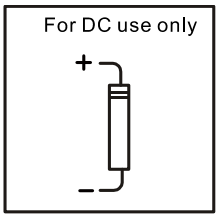
Access Mode	Proximity Card Only (00)
Format	All Bits
Card Storage（MAX 600 pcs）	None
Master Code	12345 (5 digits)
Alarm Function (All)	Function disabled (00)
Relay Strike Time	5 seconds
Pressed Key Time Delay	5 seconds
PIN Code Input Waiting Time	5 seconds
Programming Mode Time Delay	25 seconds

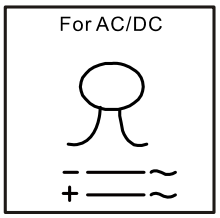
Terminal connections

CN1	Description	CN2	Description
12	+ 8.5V to 16VDC	12	+ 8.5V to 16VDC（auxiliary reader）
V	GND	V	Power Ground（auxiliary reader）
D	Electric lock	D1	Wiegand Data 1（auxiliary reader）
C	Electric lock, Alarm(Com.)	D0	Wiegand Data 0（auxiliary reader）
A	Alarm	LED	LED（auxiliary reader）
E	Door reed switch	BEEP	BEEP（auxiliary reader）
B	Request-to-exit		

Ⅳ. Wiring Diagram







Note：

1. The distance between auxiliary reader and DG-600 should not more than 20m or less than 30cm for signal transmission. It is suggested to use #22~26 AWG insulation wire.
2. When DG-600E connects to an external auxiliary reader of Wiegand 26 bits format, please weld short JP1 to Wiegand 26 bits (hexadecimal). (Default is Wiegand 44 bits)
3. DG-600H, if short JP1 turns to Wiegand 26 bits, only Wiegand 26 bits output from external auxiliary reader can be read.
4. After JP1 is changed, please reset and input again.
5. It is suggested to use a linear power supply unit to prevent reading range reduction at the card reader.

6. The door strike or relay must have a varistor or a diode across the door strike terminals to suppress the back EMF of the strike – failure to do so will damage the relay contacts and electronic components, or even burns the controller.
7. Exit button is at N.O. contact.
8. It is suggested to connect to an external relay to activate the alarm. (C.A. contact)
9. Meet CE standard

V. Operation Instruction

◆ **Enter Programming Mode**

Enter the master code twice (Default value:“12345”) to enter Programming mode (2 Beeps, Yellow LED stay on)

◆ **Exit Programming Mode**

Press # to exit programming mode or after 25 seconds if no data entered, it will automatically exit the setting mode and back to standby mode.

◆ **Set the Access Mode (In programming mode)**

Press＊0 +??

??=00, Proximity Card Only (1 beep) (Default)

??=01, Proximity Card or PIN (1 beep)

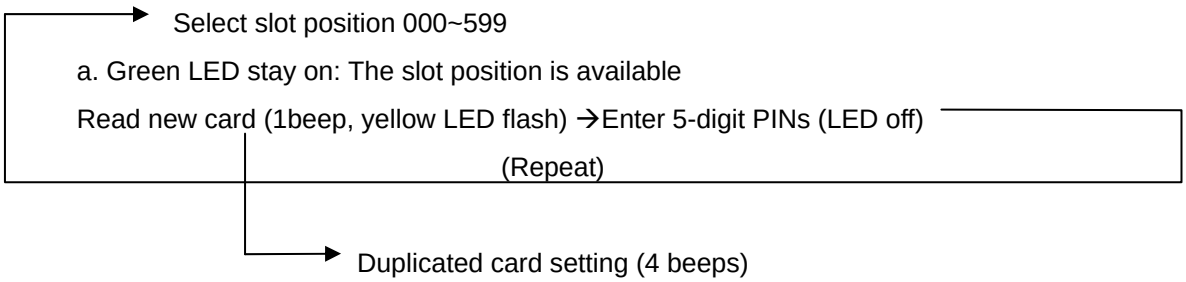
??=02, Proximity Card + PIN (1 beep)

Note 1：In “Proximity Card + PIN” mode, it has only one chance to read the card and enter the PIN. Incorrect PIN will back to standby mode and has to repeat the above step again.

Note 2：In “Proximity Card + PIN” mode, the card will be deleted upon 5 consecutive master codes or invalid PINs attempt.

◆ **Add and delete a proximity card (In programming mode)**

Select slot position 000~599 (Red LED stay on indicate the slot position is available)



b. Red LED stay on: The slot position is unavailable

1. Press ＊＊ to delete the data from the slot position (Green LED stay on)
2. Read new card

3. Repeat the step a or select another slot position

4. Press # back to standby mode (1 beep, yellow LED off)

Note: 1. In any access mode, read the card and enter the PINs must be at the same time.

2. Master code cannot be used for PINs.

◆ **Set the Relay Strike Time (In programming mode)**

Press＊1 + ??

1. ??=01~99 seconds, press 05 will set the door relay time to 5 seconds. (1 beep)

2. In Toggle mode, ??=00 (1 beep)

In Toggle mode, the relay will switch between N.C. contact and N.O. contact upon enter PIN once.

◆ **Set Door Alarm Time (In programming mode)**

Press＊2 + ?? (??=10~990 seconds, press 05 will set the door relay time to 5 seconds.) (1 beep)

Function Off: Press 00 (1 beep)

Example 1: Door Held Open Alarm

If the relay strike time is set for 5 seconds, and the door alarm time is set for 10 seconds, the following will happen:

If the door is opened via a valid card or PINs and remains open for more than 15 seconds, an audible alarm will sound and the red LED will flash until the door has been closed.

This activation is controlled by「E」 and 「V」contact.

Example 2: Vandal Resistant Alarm

If the door is opened without the use of a valid card or PINs, the audible alarm will sound and the red LED will flash until the door has been closed.

This activation is controlled by「E」 and 「V」contact.

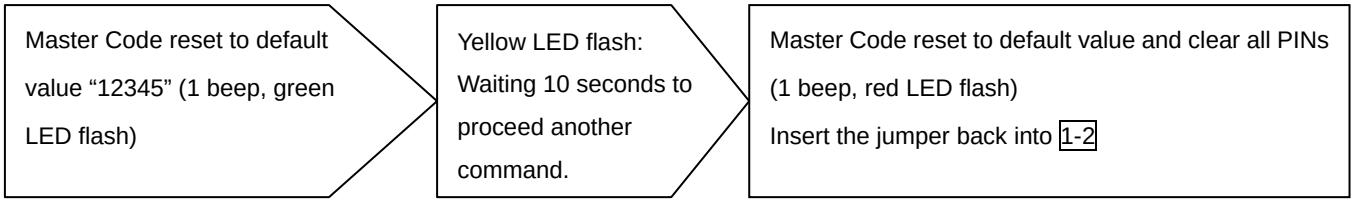
Example 3: Tamper Switch

The main panel has a tamper switch installed, if the main panel is opened, the audible alarm will sound and the red LED will flash until the panel has been closed.

◆ Change Master Code (In programming mode)

Press＊3 + 5-digit master code (1 beep)

◆ Reset (Insert the reset jumper into ST1 2-3)



Note: Must release the jumper as soon as yellow LED flash, otherwise could clear all PINs

Warranty:

The product is warranted against defects in material and workmanship while used in normal service for a period of 1 year from the date of sale to the original customer. The GEM policy is one of continual development and improvement; therefore GEM reserves the right to change specifications without notice.