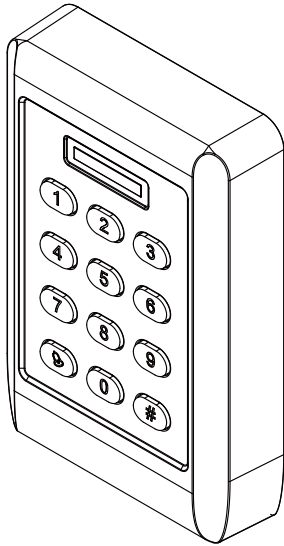


# DG-300

## Stand Alone Reader Operation Manual



### Features

- Memory volume up to 1000+10 proximity cards/tokens and PINs. Reading time approx. 0.5 seconds.
- Access modes:
  - Only Proximity Card
  - PIN or Proximity Card (default setting)
  - PIN + Proximity Card
- Logical memory prevents duplicated card setting.
- Lockout Function: The controller will lockout for 60 seconds after entering invalid PINs or reading invalid cards for 5 times. (The keypad doesn't beep during the period of time).
- Controller with keypad sound to avoid incorrect key-in.
- Additional input for anti-tailgating function to ensure high security access control.
- Built-in anti-tamper switch.
- Non-volatile memory stores all code settings, even in the event of total power failure or controller not in use for a long time.
- Dual relays to control door lock and other security devices.
- Epoxy sealed for waterproof.

### Specification

Operating Voltage	12~24VAC/DC
Current Draw	Pull In:90mA/12VDC,Holding:70mA/12VDC Pull In:60mA/24VDC,Holding:50mA/24VDC
RF Frequency	EM 125KHz (DG-300EM), MIFARE 13.56MHz (DG-310MF)
Read Range	EM 10 cm, MIFARE 8 cm (In noise-free environment)
Keypad	Backlight 12-digit (0~9, #)
Input	2 contacts for Request-To-Exit button 1 contact for door reed switch
Output	2 relays (Dry contacts: N.O./N.C./Com.)
LED Status Indication	4 LED display (Blue/Green/Yellow/Red)
Memory Volume	1000+10 proximity cards/tokens and PINs
Relay Rating	Max.1A/30VDC ; 0.5A/125VAC
Relay Strike Time	01~99 seconds or Toggle Mode (00)
Ambient Humidity	5%~95% (Non-condensing)
Operating Temperature	-20°C~50°C

### Indicator Status & Default Setting Parameters

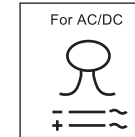
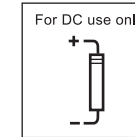
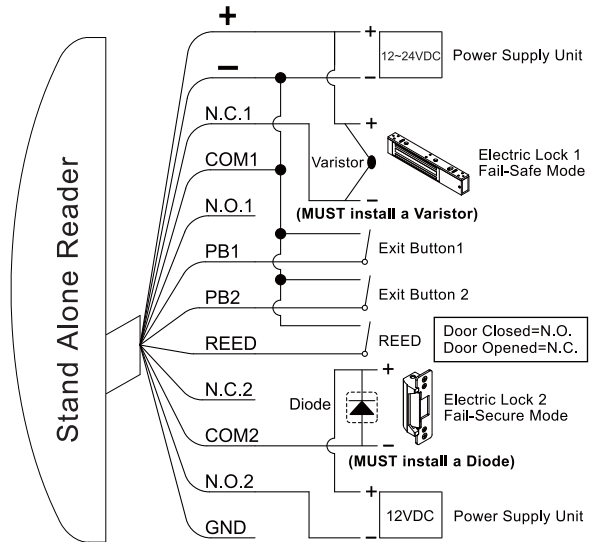
#### Beep & LED Indication:

	Mode	Signal	Status
LED	Standby	Blue Stay On	Power on, Standby
		Green Stay On	First relay active
		Red Stay On	Second relay active
	Programming	Yellow Stay On	Enter programming mode
		Green Stay On	The slot position of first relay is available.
		Red Stay On	The slot position of first relay is unavailable.
Beep	Standby	1 Beep	Press any key, enter programming mode
		3 Beeps	Incorrect PIN
		1 Beep	Correct Input data, Exit programming mode
	Programming	3 Beeps	Incorrect Input data, other incorrect operation, duplicated PIN

#### Factory Default Setting:

Access Mode	PIN or Proximity Card
Format	All Bits
Card Storage (MAX. 1000+10pcs)	None
Master Code	1234 (4 digits)
Relay Strike Time (Time Delay Setting)	1 second
Pressed Key Time Delay	5 seconds (Fixed)
PIN Code Input Progressing	5 seconds
Programming Mode Time Delay	30 seconds (Fixed)

### Wiring Diagram



Red	+	Yellow	PB2
Black	-	Brown	REED
Light Green	N.C.1	Gray	N.C.2
Pink	COM1	Purple	COM2
White	N.O.1	Blue	N.O.2
Orange	PB1	Green	GND

#### Note:

- It is suggested to use a linear power supply unit to prevent reading range reduction at the card reader.
- It is suggested to use #22~26 AWG insulation wire.
- Exit button is at N.O. contact.
- With CE qualification EMC specification.
- 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 burn the controller.

#### 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.

# Operation Instruction

## 1. Master Code

The master code consists of a four-digit number and is used to access programming functions of the reader and cannot be used to gain access i.e. It cannot be the same as other PINs. The default master code is set as 1234. Under normal operation the keypad is used for entering PIN to gain access. In the programming mode the keypad can be used to add/delete PINs, set relay strike time and other operation functions.

## 2. Enter Programming Mode

Enter the master code twice (1234 1234) to enter programming mode (1 long beep, Yellow LED stay on).

## 3. Set the Access Mode

The dual identification feature allows the reader to be programmed to grant access with either Proximity Card only, Proximity Card or PIN, Proximity Card and PIN.

1. Enter programming mode
2. Press 0 (Yellow LED rapid flash)
3. Press 00 (1 beep, Yellow LED stay on) for Proximity Card Only  
Press 01 (1 beep, Yellow LED stay on) for Proximity Card or PIN  
Press 02 (1 beep, Yellow LED stay on) for Proximity Card + PIN
4. Press # (1 beep) back to standby mode (Blue LED stay on)

## 4. Set the Relay Strike Time

The relay strike time determines the amount of time that the door remains unlocked after a valid proximity card or PIN is entered.

**NOTE: For both Relay 1 & Relay 2, enter 00 will set the relay strike time to 0 second (relay set to toggle mode).**

1. Enter programming mode
2. Press 1 for Relay 1 (Yellow LED rapid flash)  
Press 5 for Relay 2 (Yellow LED rapid flash)
3. Press 00~99 (1 beep, Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Blue LED stay on)

## 5. Clear Memory of All Proximity Cards and PINs

1. Enter programming mode
2. Press 8 (Yellow LED rapid flash)
3. Press 88 (Yellow LED stay on , 7 beep, Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Blue LED stay on)

## 6. Reset Controller Parameter to Default Value

1. Enter programming mode
2. Enter 8 (Yellow LED rapid flash)
3. Enter 99 (Both left & right Yellow LEDs stay on, 1 beep) back to standby mode (Blue LED stay on)

## 7. Add a Proximity Card and PIN to Relay 1

1. Enter programming mode to select slot position 000~999 (Green LED stay on to indicate the slot position is available)
2. Read new card (1 beep), then press 4-digit PIN 9999 (1 beep, Yellow LED stay on).
3. Press # (1 beep) back to standby mode (Blue LED stay on)

**NOTE: Master code must NOT be the same as PIN codes.**

1. Enter programming mode to select slot position 000~999 (Red LED stay on to indicate the slot position is unavailable)
2. Press (1 beep) to delete the data from the slot position (Green LED stay on)
3. Press # , back to standby mode
4. Repeat the steps of 7-a to add new cards.

## 8. Add a Proximity Card and PIN to Relay 2

1. Enter programming mode
  2. Press 4 to select slot position 00~09 (Green LED stay on to indicate the slot position is available)
  3. Read new card (1 beep, Yellow LED flash)
  4. Press # (1 Beep) back to programming mode (Yellow LED flash)
  5. Press # (1 Beep) , back to standby mode
1. Enter programming mode
  2. Press 4 to select slot position 00~09 (Red LED stay on to indicate the slot position is unavailable)
  3. Press to delete the data from the slot position (1 beep, Green LED stay on)
  4. Press # , back to standby mode
  5. Repeat the steps of 8-a to add new cards.

## 9. Change Master Code

1. Enter programming mode
2. Press 3 (Yellow LED rapid flash)
3. Enter 4-digit master code twice e.g. 4567 4567 (1 beep, Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Blue LED stay on)

## 10. Add a New Master Card to Relay 1

1. Enter programming mode
  2. Press 7 (Green LED rapid flash to indicate the slot position is available)
  3. Read new card to set as Master Card (1 beep, Yellow LED stay on)
  4. Press # (1 beep) back to standby mode (Blue LED stay on)
1. Enter programming mode
  2. Press 7 (Green LED stay on to indicate the Master Card had been stored)
  3. Press to delete the data (1 beep, Green LED rapid flash)
  4. Press # , back to standby mode
  5. Repeat the steps of 10-a to add new master card.

## 11. Add New Cards by Master Card

1. Read master card once (1 beep, Yellow LED stay on)
  2. Enter slot position 000~999 (Green LED stay on to indicate the slot position is available)
  3. Read new card (1 beep), then enter 4-digit PIN 9999 (1 beep, Yellow LED stay on)
  4. Press # (1 beep) back to standby mode (Blue LED stay on)
1. Read master card once (1 beep, Right Yellow LED stay on)
  2. Enter slot position 000~999 (Red LED stay on to indicate the slot position is unavailable)
  3. Press to delete the data from the slot position (1 beep, Green LED stay on)
  4. Repeat the steps of 11-a to add new cards.

## 12. Turn Anti-Tamper Alarm Function ON/OFF

1. Enter programming mode
2. Press 6 (Yellow LED rapid flash)
3. Press 01 ( 1 beep, Yellow LED stay on) - function OFF

Press 02 ( 1 beep, Yellow LED stay on) - function ON

4. Press # (1 beep) back to standby mode (Blue LED stay on)

## 13. Turn Doorbell Alarm Function ON/OFF

1. Enter programming mode
  2. Press 2 (Yellow LED rapid flash)
  3. Press 01 (1 beep, Yellow LED stay on) - function OFF  
Press 02 (1 beep, Yellow LED stay on) - function ON
  4. Press # (1 beep) back to standby mode (Blue LED stay on)
- Note: Turning on doorbell alarm function on the second relay, relay strike time is 1 second.

## 14. Reset the Master Code to Default Value

Turn off the power: press # continuously, and energize (1 beep), the master code is reset to default value.

## 15. Add a patch to Relay 1

1. Enter programming mode, press 9 (Yellow LED flash)
2. Press 01 (1 beep, Yellow LED flash)
3. Select slot position 000~999, press the number of cards (001~999) (1 beep, Yellow LED flash)
4. Read new cards (in serial order) (1 beep, Yellow LED flash)
5. Press # (1 beep) back to standby mode (Blue LED stay on)

## 16. Change PIN to Relay 1

1. Enter programming mode, press 9 (Yellow LED flash)
2. Press 02 (1 beep, Yellow LED flash)
3. Press slot position 000~999
4. Press PIN code (1 beep, Yellow LED flash)
5. Press # (1 beep) back to programming mode (Yellow LED stay on)
6. Press # (1 beep) back to standby mode (Blue LED stay on)

## 17. Change the length of Master Code

1. Enter programming mode, press 9 (Yellow LED flash)
  2. Press 04 (1 beep, Yellow flash)
  3. Press the length of Master Code (4 ~ 6 digits) (beep...clear PINs and cards) (1 beep)
  4. back to programming mode (Yellow LED stay on)
  5. Press # (7 beep) back to standby mode (Blue LED stay on)
- (After changing the length of Master Code, all PINs and cards will be cleared too. If the length of Master Code is 4 digits, press 1234; if 5 digits, press 12345; if 6 digits, press 123456.)

## Annex: User List

User	User Name	Slot Number	Card#/PIN#
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

