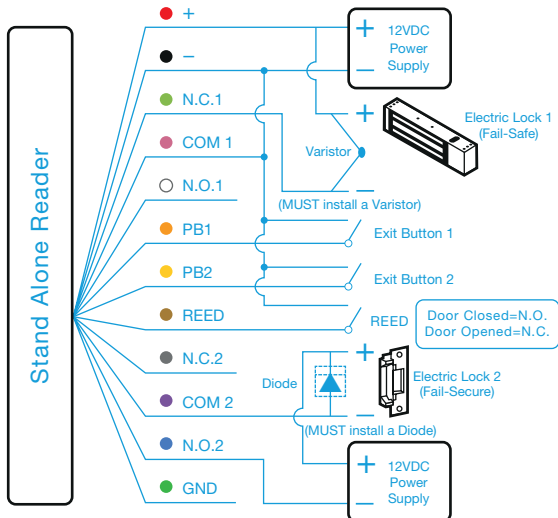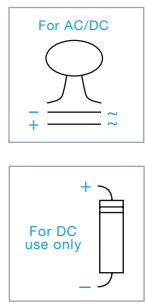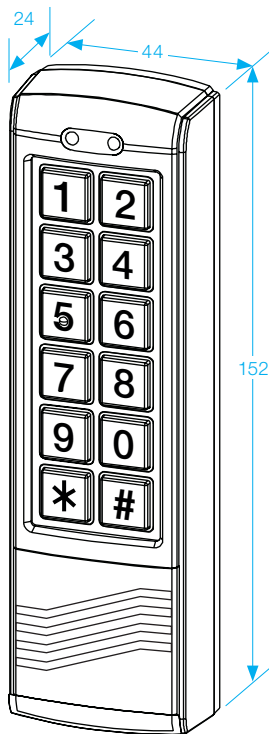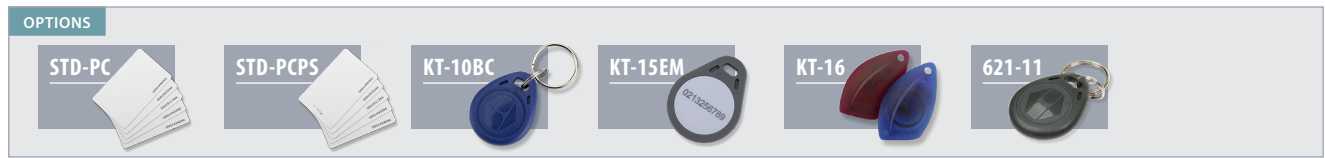# DG-160

Combined Proximity and Keypad Access

- Operating voltage 12Vdc

- Aluminium

- Allows up to 1000+10 proximity cards, tokens and PIN's

- Backlit keypad

- Built in anti-tamper switch

- 2 LED displays

WEATHER RESISTANT — **IP 65** —

VANDAL RESISTANT

GEM®

OPTIONS

STD-PC   STD-PCPS   KT-10BC   KT-15EM   KT-16   621-11

24   44   152

For AC/DC

For DC use only

Stand Alone Reader

+
−
N.C.1
COM 1
N.O.1
PB1
PB2
REED
N.C.2
COM 2
N.O.2
GND

12VDC Power Supply

Electric Lock 1 (Fail-Safe)

Varistor

(MUST install a Varistor)

Exit Button 1

Exit Button 2

REED   Door Closed=N.O. Door Opened=N.C.

Diode

Electric Lock 2 (Fail-Secure)

(MUST install a Diode)

12VDC Power Supply

RED	+	PINK	COM. 1	YELLOW	PB2	PURPLE	COM.2
BLACK	−	WHITE	N.O.1	BROWN	REED	BLUE	N.O.2
LIGHT GREEN	N.C.1	ORANGE	PB1	GREY	N.C.2	GREEN	GND

DG-160
DG-800

Stand Alone Reader Operation Manual

DG-160   DG-800
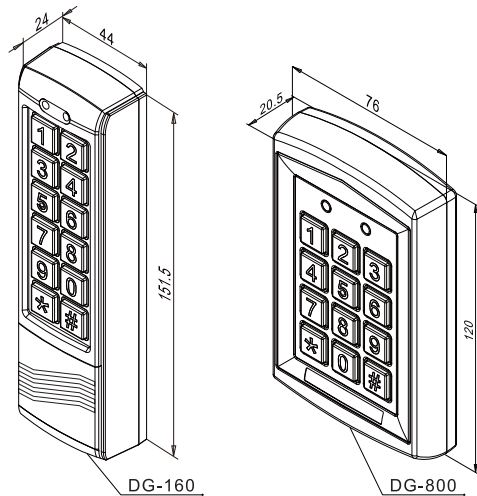
⬛ Features

1. Memory volume up to 1000+10 proximity cards/tokens and PINs. Reading time approx. 0.5 seconds.
2. Access modes:
   a. Only Proximity Card
   b. PIN or Proximity Card (default setting)
   c. PIN + Proximity Card
3. Logical memory prevents duplicated card setting.
4. 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).
5. Controller with keypad sound to avoid incorrect key-in.
6. Additional input for anti-tailgating function to ensure high security access control.
7. Built-in anti-tamper switch.
8. Non-volatile memory stores all code settings, even in the event of total power failure or controller not in use for a long time.
9. Dual relays to control door lock and other security devices.
10. Aluminum alloy casing with vandal resistant screws for enhanced safety and durability.
11. Epoxy sealed for waterproof.
12. Slim-type keypad design for narrow door-frames (DG-160).

⬛ Specification

|	
Operating Voltage	12~24VAC/DC
Current Draw	DG-160: Pull In:60mA/12VDC,Holding:40mA/12VDC Pull In:30mA/24VDC,Holding:20mA/24VDC
	DG-800: Pull In:100mA/12VDC,Holding:70mA/12VDC Pull In:50mA/24VDC,Holding:35mA/24VDC
RF Frequency	EM 125KHz
Read Range	5 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	2 LED indicators display (Red/Green)
Memory Volume	1000+10 proximity cards/tokens and PINs
Relay Rating	Max.2A/30VDC ; 0.6A/120VAC
Relay Strike Time	01~99 seconds or Toggle Mode (00)
Ambient Humidity	5%~95% (Non-condensing)
Operating Temperature	-20°C~70°C

⬛ Indicator Status & Default Setting Parameters

Beep & LED Indication:

Mode		Signal	Status
LED	Standby	Right Green Stay On	Power on, Standby
		All LEDs Stay On	First relay active
		Red Stay On	Second relay active
	Programming	Yellow Stay On	Enter programming mode
		Green Stay On / Red Stay On	The slot position of first relay is available. / The slot position of first relay is unavailable.
		Green Stay On / Red Stay On	The slot position of second relay is available. / The slot position of second relay is unavailable.
Beep	Standby	1 Beep	Valid card, press key, enter programming mode
		3 Beeps	Invalid card, incorrect PIN
	Programming	1 Beep	Correct Input data, Exit programming mode
		3 Beeps	Incorrect Input data, other incorrect operation, duplicated card setting

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 Waiting Time	5 seconds
Programming Mode Time Delay	30 seconds (Fixed)

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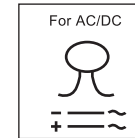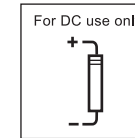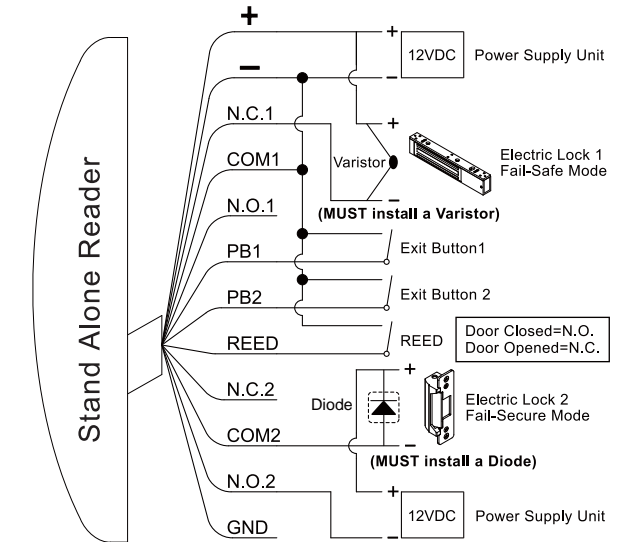
Red	＋	Yellow	PB2
Black	－	Brown	REED
Light Green	N.C.1	Gray	N.C.2
Pink	COM1	Purple	COM2
White	N.O.1	Blue	N.O.2
Orange	PB1	Green	GND

Note:
1. It is suggested to use a linear power supply unit to prevent reading range reduction at the card reader.
2. It is suggested to use #22~26 AWG insulation wire.
3. Exit button is at N.O. contact.
4. With CE qualification EMC specification.
5. 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.

▣ 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, Right 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 (Right Yellow LED rapid flash)
3. Press 00 (1 beep,Right Yellow LED stay on) for Proximity Card Only
   Press 01 (1 beep,Right Yellow LED stay on) for Proximity Card or PIN
   Press 02 (1 beep,Right Yellow LED stay on) for Proximity Card + PIN
4. Press # (1 beep) back to standby mode (Right Green 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 (Right Yellow LED rapid flash)
   Press *5 for Relay 2 (Right Yellow LED rapid flash)
3. Press 00~99 (1 beep,Right Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Right Green LED stay on)

5. Clear Memory of All Proximity Cards and PINs
1. Enter programming mode
2. Press * 8 (Right Yellow LED rapid flash)
3. Press 88 (No LED , 1 long beep, right Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Ridht Green LED stay on)

6. Reset Controller Parameter to Default Value
1. Enter programming mode
2. Enter *8 (Right Yellow LED rapid flash)
3. Enter 99 (Both left & rigth Yellow LEDs stay on, 1 beep) back to standby mode (Right Green LED stay on)

7. Add a Proximity Card and PIN to Relay 1
a.1. Enter programming mode to select slot position 000~999 (Left Green LED stay on, Right Yellow LED rapid flash to indicate the slot position is available)
   2. Read new card (1 beep), then press 4-digit PIN 9999 (1 beep, Right Yellow LED stay on).
   3. Press # (1 beep) back to standby mode (Right Green LED stay on)
   NOTE: Master code must NOT be the same as PIN codes.

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

8. Add a Proximity Card and PIN to Relay 2
a. 1. Enter programming mode
   2. Press * 4 to select slot position 00~09 (Left Green LED stay on , Right Yellow LED rapid flash to indicate the slot position is available)
   3. Read new card (1 beep, Right Yellow LED flash)
   4. Press # (1 Beep) back to programming mode (Right Yellow LED flash)
   5. Press # (1 Beep) , back to satndby mode
b. 1. Enter programming mode
   2. Press * 4 to select slot position 00~09 (Left Red LED stay on , Right Yellow LED rapid flash to indicate the slot position is unavailable)
   3. Press * * to delete the data from the slot position (1 beep, Left Green LED stay on, Right Yellow LED rapid flash)
   4. Press # , back to satndby mode
   5. Repeat the steps of 8-a to add new cards.

9. Change Master Code
1. Enter programming mode
2. Press * 3 (Right Yellow LED rapid flash)
3. Enter 4-digit master code twice e.g. 4567 4567 (1 beep, Right Yellow LED stay on)
4. Press # (1 beep) back to standby mode (Right Green LED stay on)

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

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

12. Turn Anti-Tamper Alarm Function ON/OFF

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1. Enter programming mode
2. Press * 6 (Right Yellow LED rapid flash)
3. Press 01 (1 beep, Right Yellow LED stay on) - function OFF
   Press 02 (1 beep, Right Yellow LED stay on) - function ON
4. Press # (1 beep) back to standby mode (Right Green LED stay on)

13. Turn Doorbell Alarm Function ON/OFF
1. Enter programming mode
2. Press * 2 (Right Yellow LED rapid flash)
3. Press 01 (1 beep, Right Yellow LED stay on) - function OFF
   Press 02 (1 beep, Right Yellow LED stay on) - function ON
4. Press # (1 beep) back to standby mode (Right Green 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 new cards to Relay 1
1. Enter programming mode, press *9 (Right Yellow LED flash)
2. Press 01 (1 beep, right Yellow LED flash)
3. Select slot position 000~999, press the number of cards (001~999) (1 beep, right Yellow LED flash)
4. Read new cards (in serial order) (1 beep, right Yellow LED flash)
5. Press # (1 beep) back to standby mode (right Green LED stay on)

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

17. Change the length of Master Code
1. Enter programming mode, press *9 (right Yellow LED flash)
2. Press 04 (1 beep, right Yellow flash)
3. Press the length of Master Code (4 ~ 6 digits) (beep…clear PINs and cards) (1 beep)
4. back to programming mode (right Yellow LED stay on)
5. Press # (1 beep) back to standby mode (right Green 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			

CE RoHS Compliant