

# MV800 Simple Incremental PG Card (with STO Function) User Manual

BOM code: R\*\*\*\*\*

Version: V00

## 1 Product Information

### 1.1 Naming rule



### 1.2 Function description

MV810-PG\*1S is an accessory card for the MV800 series AC drive, which provides encoder interfaces, with differential ABZ input and open-collector input, serving as the speed or position feedback. It has two ways of STO signal input to achieve Safe Torque Off for the AC drive.

### 1.3 Product appearance

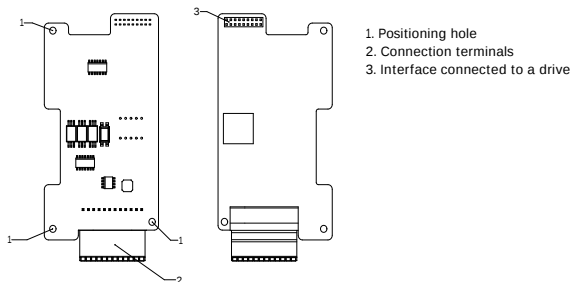


Fig. 1-1 PG\*1S appearance (for models of 3.7 kW and below)

Conditioning hole  
Connection terminals  
Connected to a drive

(3.5 kW and above)

|      |                      |                                                                                                                           |      |                                                                                                                                                                                                         |
|------|----------------------|---------------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | 5V                   | 5V power supply                                                                                                           | GND) | Output voltage:<br>+5 V<br>Max. output current:<br>200 mA / 150mA                                                                                                                                       |
| +24V | STO1, 2 power +      | When not using the STO function, you can connect this terminal to STO1 and STO2 to disable the STO function (by default). |      | Output voltage:<br>+24 V±10%<br>Max. output current: 100 mA                                                                                                                                             |
| STO1 | STO1 terminal        | STO1 function input 1                                                                                                     |      | Optocoupler isolation.<br>By default, the STO1 and STO2 are connected to +24V with a short contact tag.<br>External 24 V wiring is available, which is shown in the STO wiring diagram below mentioned. |
| STO2 | STO2 terminal        | STO2 function input 2                                                                                                     |      |                                                                                                                                                                                                         |
| GND  | STO1, 2 power ground | Ground for 5/12V, +24V                                                                                                    |      |                                                                                                                                                                                                         |

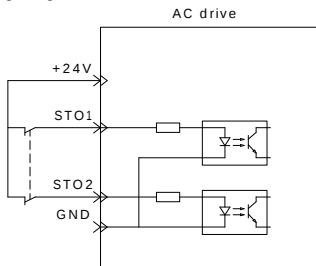
### 1.5 Signal description

The ABZ signal waveform of MV810-PG\*1S is shown in the following figure. When the motor rotates forward (the operating frequency is positive), phase A leads phase B by 90 degrees. Conversely, phase A lags behind phase B by 90 degrees. The Z signal is used to provide the absolute

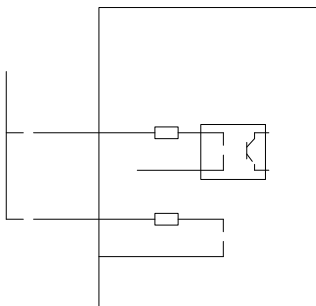
Fig. 1-4 ABZ signal

## 1.6 STO wiring diagram

### (1) Internal 24 V wiring diagram



### (2) External 24 V wiring diagram



## 1.7 Related function codes

Here are explanations of table fields for function codes.

| Field    | Explanation                                                                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default  | Factory settings of function codes                                                                                                                                                    |
| Property | ○: means the function code can be changed during running;<br>×: means the function code can be changed at stop;<br>*: means the function code can be read only and cannot be changed. |

| Function code | Name                                          | Description                                                                                     | Default | Property |
|---------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------|---------|----------|
| P04.00        | Encoder PPR                                   | 1 to 65535                                                                                      | 1024    | ×        |
| P04.01        | Encode type                                   | 0: ABZ incremental encoder                                                                      | 0       | ×        |
| P04.02        | A/B phase sequence of ABZ incremental encoder | 0: Forward<br>1: Reverse<br>Note: Rotation auto-tuning automatically detects the phase sequence | 0       | ×        |
| P04.03        | Reserved                                      |                                                                                                 |         |          |
| P04.04        | PG card voltage class selection               | 0: 5 V<br>1: 12 V                                                                               | 0       | ×        |

## 2 Installation

The installation position, installation interface and installation steps for MV810-PG\*1S are described below.

### 2.1 Installation position of PG card

MV800 series AC drive provides two positions for expansion cards and options, as shown in Fig. 2-1 position 1 and position 2 (taking enclosure B as an example, similar for other enclosures), where position 1 is for the installation of various PG cards and position 2 is for the installation of PN bus options, ECAT bus options, I/O options, and so on.



Fig. 2-1 Expansion card/Option installation positions

## 2.2 Installation interface of PG card

The electrical interface of PG\*1S card is connected to the MV800 AC drive as shown in Fig. 2-2.

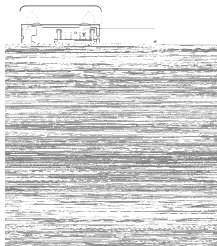
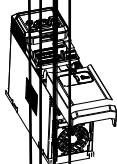


Fig. 2-2 Installation interface of PG card

## 2.3 Installation steps of PG card

Installation method: Reverse side mounting (PG\*1S card)

- (1) When the drive is powered off, press the granulated part on the middle-upper of the lower cover, and slide it down firmly to take down the cover, as shown in Fig. 2-3 a.
- (2) Use a straight screwdriver to pry open the two snap-fit joints between the control box and the drive, and then remove the control box upwards, as shown in Fig. 2-3 b and c.
- (3) Install the PG\*1S card: Hold the PG\*1S card with its terminal block downwards, then align the three round holes on the PG\*1S card with the location column, and press down to buckle the PG\*1S card firmly into the four snap-fit joints, as shown in Fig. 2-3 d.
- (4) After the PG card is installed, align the control box with the snap-fit joints, and press down the control box to make its lower part firmly buckled, then slide the lower cover to lock it on the drive, as shown in Fig. 2-3 e and f.



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| Option model:     |      |
| Option No:        |      |
| Purchase date:    |      |

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| Service unit:     |      |
| Contact:          | Tel: |
| Maintenance date: |      |

Checker: \_\_\_\_\_

Manufacturing date:

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