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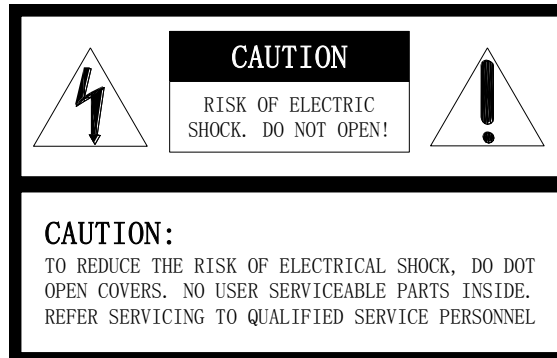
# HD IP VEHICLE PTZ CAMERA

VER:6.0

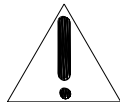
Please read the manual carefully before using the product.

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## I. SAFETY PRECAUTIONS



The lightning flash with a arrowhead symbol, in an equilateral triangle, is intended to alert the user. There is uninsulated “dangerous voltage” presence near by the product’s enclosure which may be risk of to persons .



The exclamation point within an equilateral triangle is intended to alert the user to reference of the important operating and maintenance (servicing ) instructions .

THE PRODUCT CODE MARKED ON THE BOTTOM COVER. PLEASE FILL THE CODE IN THE FOLLOWING BLANK. PLEASE SAVING THIS SPECIFICATION CAREFULLY, SO THAT CHECKING.

MODEL: \_\_\_\_\_

PRODUCT CODE: \_\_\_\_\_

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## I. Notes for Attention

1. Read the manual carefully before installing the product.
2. There are two input ways of power supply: DC12V. Detailed connections refer to the description files.
3. There are sophisticated optical and electronic components inside the product. Avoid incorrect operation methods such as heavy pressing or strong vibration during the course of transportation, store and installation otherwise the product could be damaged.
4. Please do not dismount components inside the product to avoid occurrence of trouble. There is no part inside the product, which needs repair by customer himself.
5. Observe all electric safety standards in application and adopt special power supply attached the product. RS-485 control signal and video signal should be kept enough distance with the high voltage devices and cables during the course of transmission, and take protection measures such as anti-lightning and surging etc. if necessary.
6. Do not apply the product under the state exceeding limited temperature, humidity or specifications of power supply.
7. Do not aim the camera at the sun or very bright object, aim or monitor bright and still object for a long time whether the power supply of the camera is switched on or off.
8. Clean out dirt with special lens tissue if dust is stuck on the lens.

## II. Description of Functions

This product is a high-tech monitor and controller which incorporates high definition color camera, universal variable pan/tilt, infrared lighting, multi-functional decoder, character superimposing, alarm input/output into a whole, reduces interconnections to a great extent among parts in the system and rises up the reliability of the system. In addition it has advantages of easy installation and maintenance, beautiful appearance, lightweight and flexible, simple operation etc.

### 1. Integrated Multi-Protocol Decoder

- a. The built-in decoder support PELCO-D/P communication protocols and support protocols customized. The baud rate of communication is adjustable. It has strong universality and is compatible with multiple common systems only by simple setting on the dip-switch.
- b. RS485 serial control: addresses of the pan/tilt 1 – 127.

### 2. Integrated Panoramic Pan/Tilt

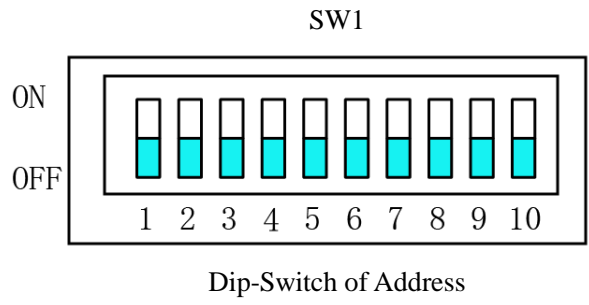
- a. 360 continuously rotation for pan range, manual control speed from 0.9~60rad/s for adjusting, Preset speed at 100 %S; Tilt range from -90 ~90 °; manual speed at 40rad/s, preset speed at 60 %S.
- b. Smooth running at low speed with super lower noise. Images have no fluttering.
- c. Panoramic monitor without black spot and the positioning accuracy can reach  $\pm 0.1^\circ$ .
- d. Direct defrost function to prevent fogging of the camera window.
- e. Support wiper function.
- f. Night vision 100m.

### 3. High Degree of Intelligence

- Preset memory has as much as 256 positions. Data are kept in memory even power is OFF.
- Horizontal scan between two positions are supported. Scan speed can be altered and direction of pan can be selected freely. The pan/tilt can make scan larger or smaller than 180 °between any two positions with adjustable speed.
- Track self-learning function. The system can simulate the PTZ line operated by the user in 200 seconds and the data is power-off memory.
- Long focus speed-limited function. The pan/tilt can adjust automatically the manual control speed depending on the focal length of the camera. The larger the magnification times, the slower the manual control speed thus to ensure searching the target rapidly and accurately.

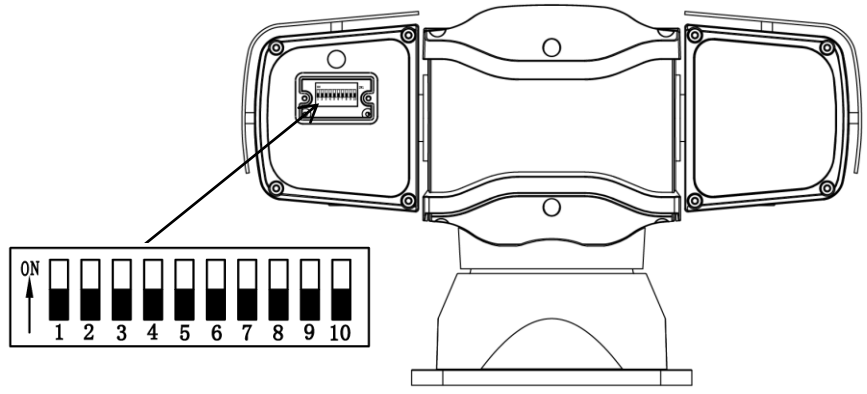
### III、 Setup of the Intelligence Full-Dome Pan/Tilt

1. Before installing the product, first of all confirm the communication protocol and the baud rate of the main machine in the system, then set the dip-switch SW1 of the pan/tilt to be identical with that of the system, set the address and the baud rate, communication protocol set PELCO-D/P.



(Figure 1)

2. Address switch diagram



### 3. Dip-Switch of Address:

| Dome Address | States of Dip-Switch |       |       |       |       |       |       |
|--------------|----------------------|-------|-------|-------|-------|-------|-------|
|              | DIP-1                | DIP-2 | DIP-3 | DIP-4 | DIP-5 | DIP-6 | DIP-7 |
| 1            | ON                   | OFF   | OFF   | OFF   | OFF   | OFF   | OFF   |
| 2            | OFF                  | ON    | OFF   | OFF   | OFF   | OFF   | OFF   |
| 3            | ON                   | ON    | OFF   | OFF   | OFF   | OFF   | OFF   |
| 4            | OFF                  | OFF   | ON    | OFF   | OFF   | OFF   | OFF   |

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 5   | ON  | OFF | ON  | OFF | OFF | OFF | OFF |
| 6   | OFF | ON  | ON  | OFF | OFF | OFF | OFF |
| 7   | ON  | ON  | ON  | OFF | OFF | OFF | OFF |
| 8   | OFF | OFF | OFF | ON  | OFF | OFF | OFF |
| 9   | ON  | OFF | OFF | ON  | OFF | OFF | OFF |
| 10  | OFF | ON  | OFF | ON  | OFF | OFF | OFF |
| 11  | ON  | ON  | OFF | ON  | OFF | OFF | OFF |
| 12  | OFF | OFF | ON  | ON  | OFF | OFF | OFF |
| 13  | ON  | OFF | ON  | ON  | OFF | OFF | OFF |
| 14  | OFF | ON  | ON  | ON  | OFF | OFF | OFF |
| 15  | ON  | ON  | ON  | ON  | OFF | OFF | OFF |
| 16  | OFF | OFF | OFF | OFF | ON  | OFF | OFF |
| 17  | ON  | OFF | OFF | OFF | ON  | OFF | OFF |
| 18  | OFF | ON  | OFF | OFF | ON  | OFF | OFF |
| ... | ... |     |     |     |     |     |     |
| 127 | ON  | ON  | ON  | ON  | ON  | ON  | ON  |

SW1 is used to set the addresses of the pan/tilt which has the range from 1 to 127. From DIP-7 to DIP-1 it corresponds to a binary number with 7 bits in which the highest bit is DIP-7 and the lowest bit is DIP-1. The state ON for each bit means 1 while the state OFF means 0. The encodes of some addresses are as follows:

Example:



Speed Dome Address=1



Speed Dome Address=2



Speed Dome Address=3



Speed Dome Address=4

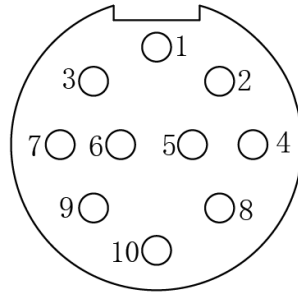


Speed Dome Address=18

- a) The address of the dome camera is set according to the binary coding system in which ON means “1” and OFF means “0”.
- b) The coded addresses shown above are only from 1 to 18
- c) Protocol set: Communication protocol is PELCO-D/P.
- d) Setup of the Baud Rate of Communication of the Pan/Tilt.

|                               |                                   |     |
|-------------------------------|-----------------------------------|-----|
| <b>Position of Dip-Switch</b> | 9                                 | 10  |
|                               | <b>Baud Rate of Communication</b> |     |
| 2400bps                       | OFF                               | OFF |
| 4800bps                       | ON                                | OFF |
| 9600bps                       | OFF                               | ON  |
| 19200bps                      | ON                                | ON  |

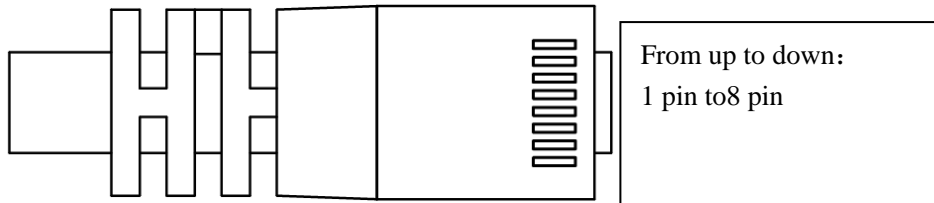
4. Description of the Terminals.



A.10-PIN Input Connector

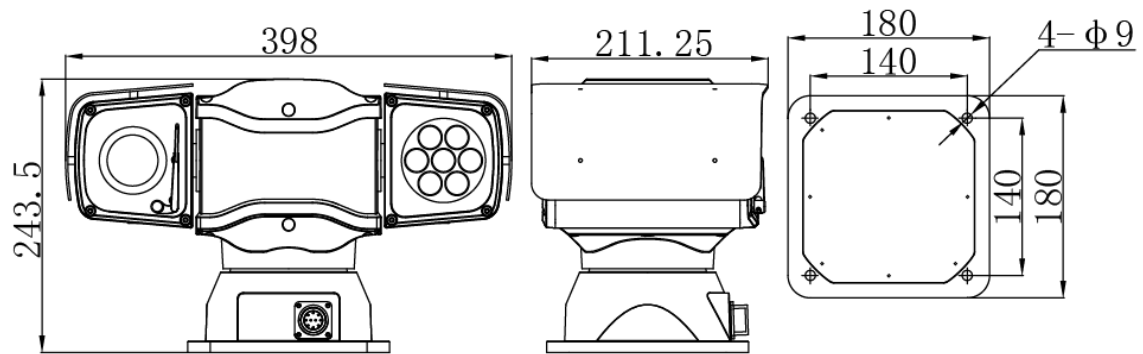
4.1 Descriptions of 10-pin Input connector :

|                            |                           |
|----------------------------|---------------------------|
| 1. NET_TX- (Network 2pin)  | 2. NET_RX+(Network 3 pin) |
| 3. NET_TX+ (Network 1 pin) | 4. Video Output(CVBS)     |
| 5. GND                     | 6. POWER-                 |
| 7. POWER+                  | 8. NET_RX-(Network 6pin)  |
| 9. RS485+                  | 10. RS485-                |



**IV. Installation of the Product**

4.1 Drawing of the Sizes of the Product (Unit: mm)

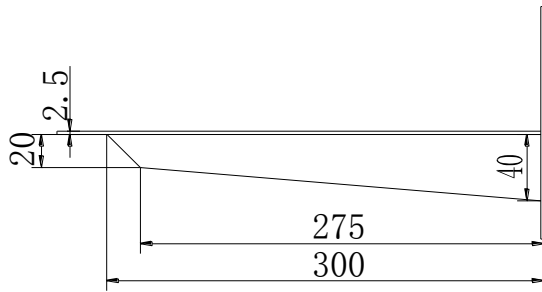


Outline Sizes of the Pan/Tilt

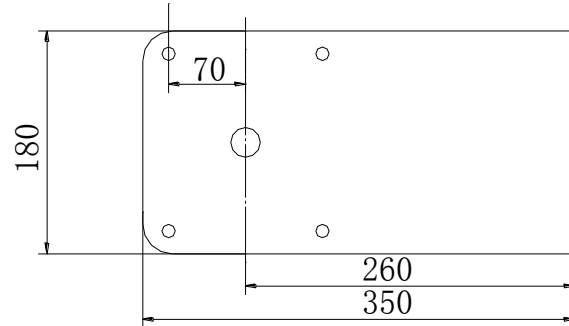
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## 4.2 Installation Style of the Product

### A. Installation Style of Plain Base

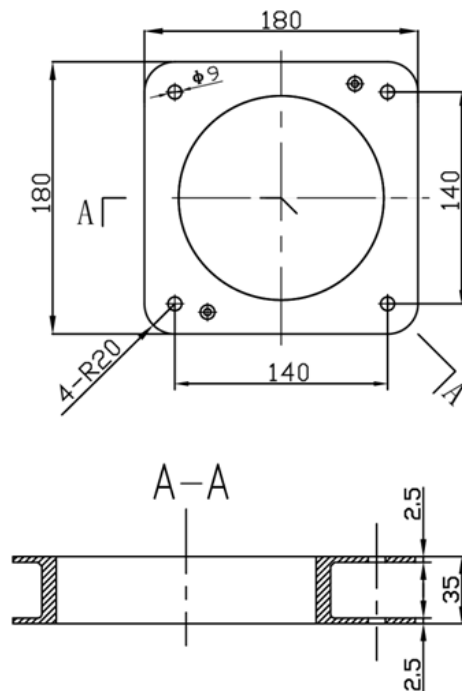


**Drawing of Sizes of the Side**



**Drawing of Sizes of the Bottom**

### B. Vehicle -Carried

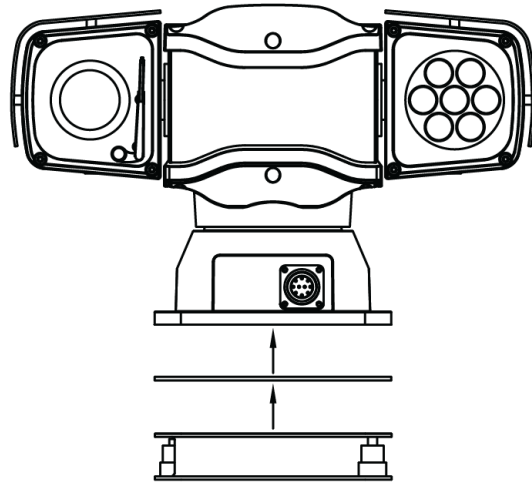


**Sizes of the Shock Absorber**

## 4.3 Installation Procedures of the Product

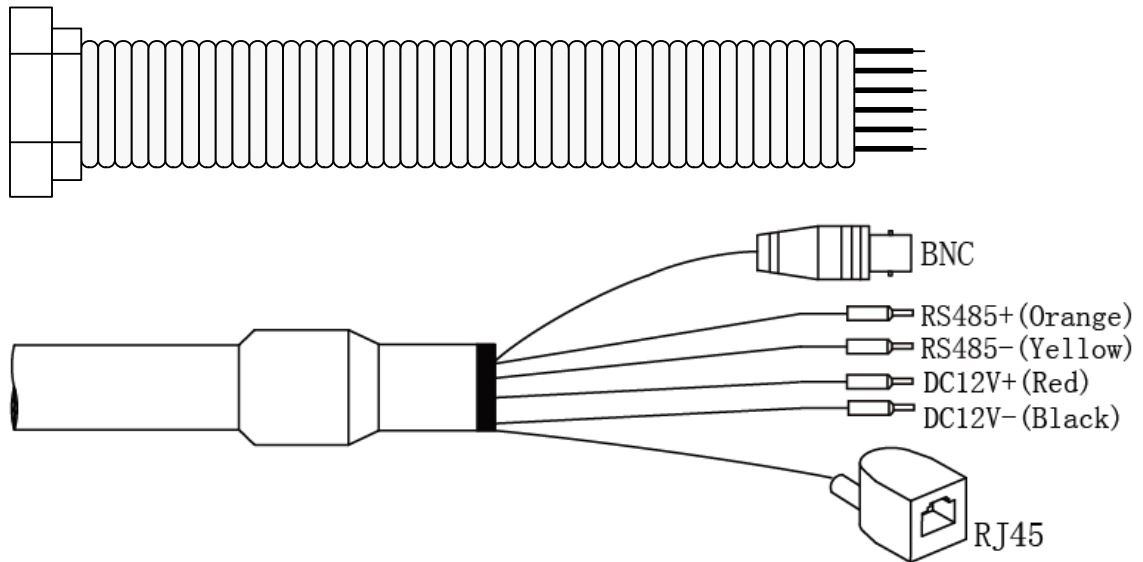
1. Remove the bottom plate of the pan/tilt;
2. Set the corresponding information in accordance with the schematic drawing of the dip-switch of addresses, protocols and baud rates;
3. Install the bottom plate of the pan/tilt and take care of the tightness of waterproof seal ring;

4. If vehicle-carried pan/tilt is used, first of all fix the chock absorber on the bottom of the pan/tilt then fix the whole pan/tilt;



5. If the plain base is used, fix the pan/tilt onto the fixation hole of the pan/tilt;

6. Connect the output wires of the socket according to relative colors on the schematic drawing and do not make wrong connections.



Attention: the input of power supply couldn't be selected and should be connected as per actual applied style.

### V、Main Technical Index

|                       |                       |                         |
|-----------------------|-----------------------|-------------------------|
| <b>Specifications</b> | Power Supply (Option) | DC12V $I_{in} \geq 4A$  |
|                       | Power Consumption     | 50VA                    |
|                       | Weight                | 7Kg                     |
|                       | Installation Style    | Plain Base Installation |
|                       | Relative Humidity     | 10-90%                  |



|                                    |                               |                             |
|------------------------------------|-------------------------------|-----------------------------|
|                                    | Operation Temperature         | -35℃~55℃                    |
|                                    | Waterproof Class              | IP66                        |
|                                    | Iris & Zoom                   | Automatic/Manual            |
| <b>Basic Functions of Pam/Tilt</b> | Pan range                     | 100 %S max                  |
|                                    | Tilt range                    | 60 %S max                   |
|                                    | Preset Position               | 256 positions in maximum    |
|                                    | Patrol Function               | Support                     |
|                                    | Scanning Speed                | 0.5~30 %s                   |
| <b>Infrared Lamp</b>               | Infrared Illuminator          | High Brightness LED X 7pcs  |
|                                    | Wavelength                    | 850nm                       |
|                                    | Project Distance              | 100m                        |
|                                    | Power Consumption             | 10W                         |
|                                    | Control of Infrared Lamp      | Auto/Manual control on menu |
|                                    | Service Life of Infrared Lamp | Over 20000 hours            |

## VI. PTZ Special operation function

### 1、8 linears scans

#### 1.1 Operation progress:

- ① SET 92、 93 preset as the left and right scan boundaries respectively;
- ② SET 80 (81/82/83/84/85/86/87) preset, set 1 linear scan;
- ③ REPEAT①、 ② progress can set other scan path;
- ④ CALL 88、 89 preset set scan speed: **default middle speed;**  
SET 88 : low speed      CALL 88 : middle speed      SET 89: high speed
- ⑤ CALL 80 (81/ 82/ 83/ 84/ 85/ 86/ 87) preset, call the corresponding scan;
- ⑥ CLEAR 80 (81/ 82/ 83/ 84/ 85/ 86/ 87) preset, delete the corresponding scan;
- ⑦ CALL 96 preset, stop scan (or provide ptz any order for stopping scan) .

Example: set the first linear scan, target A object SET 92 preset, then control ptz to B object SET 93 preset. Operate SET 80 preset, save the first linear scan position. SET 88 preset, set ptz linear scan speed as low speed. CALL 80 preset, ptz operates the first linear scan.

Set the second linear scan, target C object SET 92 preset, then control ptz to D object SET 93 preset. Operate SET 81 preset, save the second linear scan position. SET 88 preset, set ptz linear scan speed as low speed. CALL 81 preset, ptz operates the second linear scan.

No 3-8\_Operates analogize like above mentioned.

### 2、8 cruise

#### 2.1 Operation progress:

- ① SET 70 (~~71/72/73/74/75/76/77~~) preset, set cruise preset;  
(Can set other 7 cruise at the same time)
- ② Select the need to add the preset, use“SET preset”order, most add 32pcs preset; (Note:

can repeat, Useless preset also occupy the number)

- ③ SET 96 preset, finish this set;
- ④ REPEAT①、②、③ progress finish other cruise set;
- ⑤ CALL 78、79 preset set **cruise intervaltime: default 15s;**  
SET 78: 5s CALL 78: 15s SET 79: 30s CALL 79: 60s;
- ⑥ CALL 70 (71/72/73/74/75/76/77) preset, call the corresponding cruise;
- ⑦ CLEAR 70 (71/72/73/74/75/76/77) preset, delete the corresponding cruise (**without CLEAR ignore it**);
- ⑧ CALL 96 preset, stop cruise (or provides ptz any order for stopping cruise) .

Example: Set the first cruise: Set the preset number of the scene to be monitored first, such as presets 1-8. Then SET 70 number preset, Then select the need to add the cruise preset, such as 1,2,3,4 preset, SET 1、SET 2、SET 3、SET 4 number preset. Operate SET 96 number preset, 1 – 4 number presets are added to the first cruise, SET 78 number preset can set the cruise preset interval time to 5 seconds.

CALL 70 number preset, start the first cruise.

Set the second cruise: Set the preset number of the scene to be monitored first, such as presets 1-8.

Then SET 71 number preset, then select the need to join the cruise preset, such as 5,6,7,8 preset, SET 5, SET 6, SET 7, SET 8 preset. Operate SET 96 presets, then 5-8 presets are added to the first cruise, SET 78 presets can set the cruise preset interval time to 5 seconds.

CALL 71 preset position, start the second cruise.

No 3-8\_Operates analogize like above mentioned.

### 3、 Watchdog bit settings

#### 3.1 Operation progress

- ① CALL 64、65 Number choose watchdog way: **default 66 number preset** (to be set);
- ② Set 66 number preset, as watchdog bit preset;
- ③ CALL 67 number preset turn on、turn off watchdog function, (**default on**);
- ④ CALL 68、69 number preset select watchdog silent time: **default 30s.**

| Preset Number          |    | SET                                    | CALL                                       |
|------------------------|----|--|--|
| Watchdog way (3 kinds) | 64 | Watchdog to 66 number preset           | Watchdog the first linear scan (to be set) |
|                        | 65 | Watch the first inspection (to be set) |  |
| Watch the bit switch   | 67 | Turn off the watchdog bit function     | Turn on the watchdog bit function          |
| Silent time limit      | 68 | 30s                                    | 60s  |
|                        | 69 | 300s                                   | 600s                                       |

### 4、 Other special preset position

4.1 Delete the command, pay attention to delete the command need to operate twice to prevent

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misuse.

SET 90: Delete all user preset (operation twice).

CALL 90: Restore Factory Settings (Operate twice).

SET 91: Delete 8 scans (operation twice).

CALL 91: Delete 8 cruises (operate twice).

CALL 94: PTZ reset self-test (operate twice)

SET 51: Turn on wiper(Single).

SET 61: Turn on wiper(repeatedly).

CALL 51/61 : Turn off wiper.

SET 52: Turn on the glass demist.

CALL 52: Turn off the glass demist.