

**Operator Keyboard**






**OP036**

**User manual**

**IM19H14-E**














Notices
<ul style="list-style-type: none"> <li>● The reproduction, transmission or use of this document or its contents is not permitted without express written authority.</li> <li>● Information and specifications in this document are subject to change without notice.</li> <li>● While information in this document is well edited and checked, mistake or omission may exist. Please don't hesitate to contact SUPCON if you have any question about this document.</li> <li>● Please contact SUPCON via email "SMS@supcon.com" if you have any question.</li> </ul>

Trademarks
<p>Trademarks or marks SUPCON, SPlant, Webfield, ESP-iSYS, MultiF, InScan, SupField are all registered, registering or using by Zhejiang SUPCON Technology Co., Ltd., which owns the properties of all trademarks or marks above. Without the written authority from Zhejiang SUPCON Technology Co., Ltd, no individual or company shall use any trademarks or marks above. We reserve the right to take legal action for any individual or company using trademarks or marks above illegally.</p>

Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

## Security& Caution Symbols

The following table lists Security& Caution symbols used on equipments.

No.	Symbol	Description
1		Direct current (DC)
2		Alternating current (AC)
3		Ground (Earth) terminal
4		Protective earth (ground) terminal
5		Reference ground (Earth) terminal
6		Frame or chassis
7		Equipotentiality
8		On (power)
9		Off (power)
10		Caution, risk of electric shock
11		Caution, hot surface
12		Caution, risk of danger
13		Electrostatic sensitive devices (ESD)

# Table of Contents

<b>Operator Keyboard OP036</b> .....	<b>1</b>
<b>Section 1 Overview</b> .....	<b>1</b>
<b>Section 2 Specification</b> .....	<b>2</b>
<b>Section 3 Usage</b> .....	<b>3</b>
3.1 Appearance .....	3
3.2 LED Indicator.....	3
3.3 Key Function .....	3
3.3.1 Custom Key.....	4
3.3.2 Function Key/ Operation Key/ Adjustment Key.....	5
3.3.3 Standard Input Key.....	8
3.3.4 Cursor Moving Key.....	8
<b>Section 4 Installation</b> .....	<b>10</b>
4.1 Boundary Dimension of Keyboard.....	10
4.2 Installation Method of Keyboard .....	11
4.2.1 Place on Table.....	11
4.2.2 Imbedded Installation .....	11
4.3 Custom Key Label .....	11
4.4 Wire Connection.....	11
4.4.1 Keyboard Wire.....	11
<b>Section 5 Troubleshooting</b> .....	<b>13</b>
<b>Section 6 Notice</b> .....	<b>14</b>
<b>Section 7 Revision</b> .....	<b>15</b>

# Operator Keyboard OP036

## Section 1 Overview

---

Operator keyboard OP036 is the special human-machine device (interface) for control system to achieve process supervision. It possesses not only the general functions of standard letter/character input, view switchover by one key, parameter adjustment, custom key, etc, but also the advanced functions of acoustic-optical alarm (needs monitoring software), virtual mouse, etc. The keyboard is connected to computer through USB interface with the feature of hot swap. Drive program doesn't need to be installed manually in operation system of WIN2000 and later versions.

This keyboard can be imbedded in operation platform, and can also be placed on the table for use.

This kind of keyboard includes 3 models: OP036-P, OP036-V and OP036-S, which are used with AdvanTrol-Pro software series, VisualField software series and SupView software series respectively.



**Figure 1-1 Keyboard appearance**

## Section 2 Specification

---

**Table 2-1 Specifications of OP036**

Model	OP036(-P/-V/-S)	
Keyboard Type	Anti-dust, Anti-Fluid Drop, Fine-Movement Switch	
Interface	USB Type A Common Interface	
Dimension	419mm×252mm×43.5mm	
Power Supply	5VDC 200mA	
Weight	1.65kg	
Color	Light Grey White	
EMC	Level 3	
IP Level	IP50	
Operating Environment	Operating Temperature	5°C ~40°C
	Storage Temperature	-40°C ~85°C
	Relative Humidity	5%RH~85%RH, No Vapor Condensation
	Temperature Change Rate	0.5°C /min
	Vibration	Acceleration <10m/s <sup>2</sup>
	Contamination Level	Level 2

## Section 3 Usage

### 3.1 Appearance

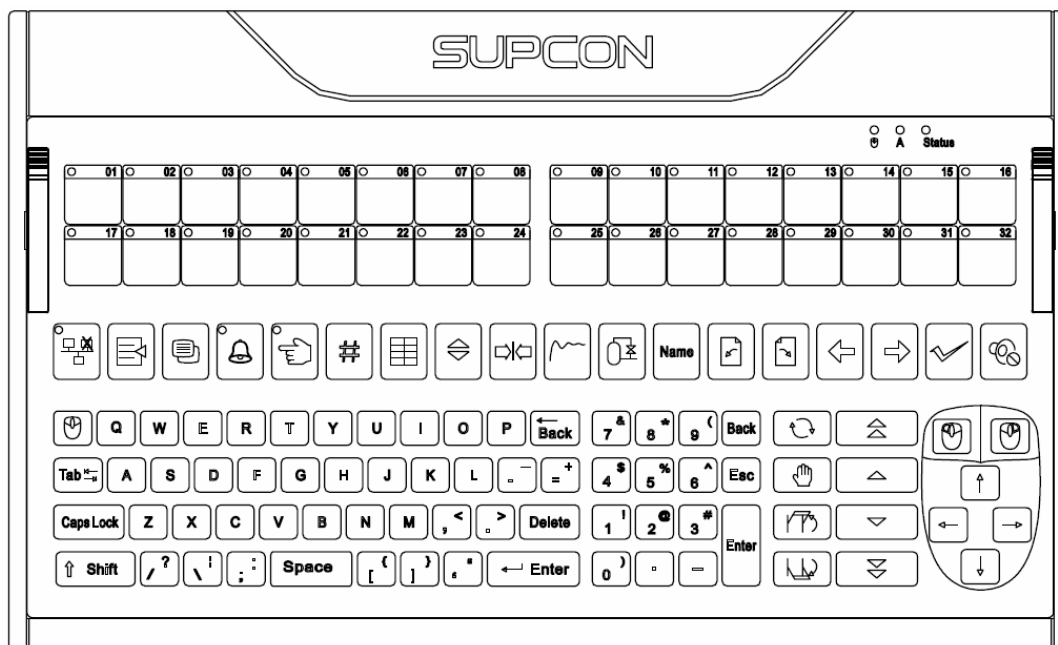



Figure 3-1 Sketch of keyboard appearance

### 3.2 LED Indicator

There are three LED indicators on the top right corner of the keyboard. When the keyboard is working, the indicators are listed in Table 3-1.

Table 3-1 Instruction of indicators

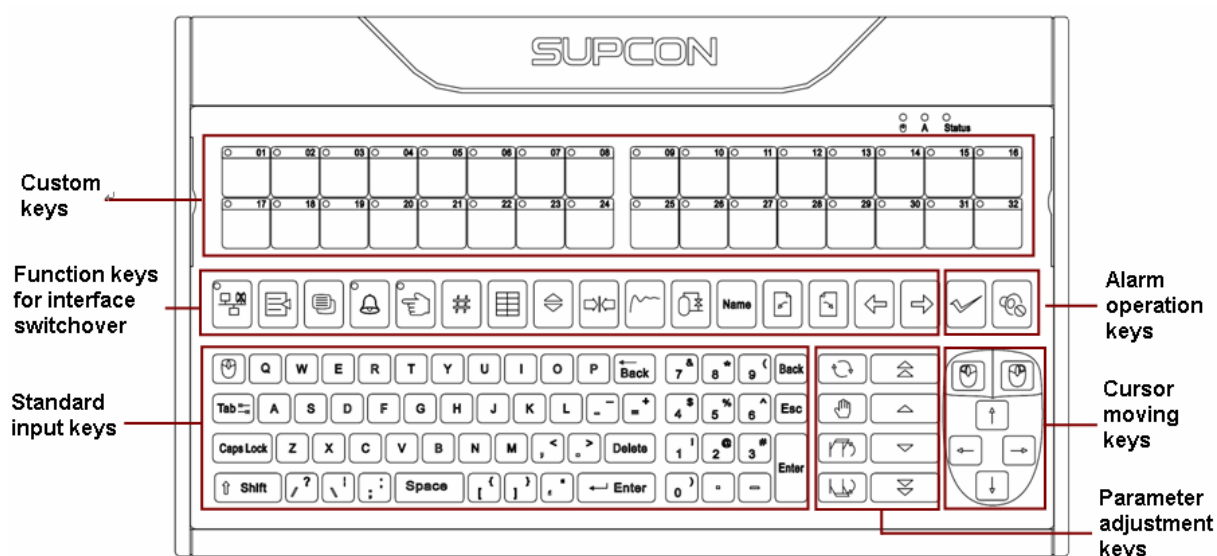
LED		A	Status
Indication	Virtual Mouse	Capital/Lower Cases	Status
OFF	OFF	Lower Case	Fault
Always ON	ON	Capital Case	Normal (Free)
Flash	-	-	Normal (Working)

### 3.3 Key Function

Operator keyboard not only consists of keys of standard letters and characters, but also keys for special operations. Since operator keyboard is applied to process control and factory supervision,

it also possesses functions of fast calling with one key and user defined one-key calling.

The layout of keys is shown in Figure 3-2. There is a feedback sound of key-pressing when the keyboard is used normally.



**Figure 3-2 Layout of keys**

### 3.3.1 Custom Key

This keyboard has 32 custom keys for one-key calling function. These keys can be defined as starting an application program or calling a certain window. Each key is equipped with LED indicator light and blank label.

The setting method for custom key can be referred in corresponding chapters in software user manual<sup>1</sup>. LED indicator light is used for optical alarming of keyboard<sup>2</sup>. The usage of customized label is introduced in 4.3 in details.



**Figure 3-3 Instruction of custom keys**

Notes:

<sup>1</sup> If system software is AdvanTrol-Pro, please refer to *System Configuration User Manual*; if system software is VisualField, please refer to *HMI Config Software User Manual*. If system software is SupView, please refer to *System Configuration User Manual*.























<sup>2</sup> Supervision software support is needed.



### 3.3.2 Function Key/ Operation Key/ Adjustment Key

The function/ operation/ adjustment keys corresponded by OP036-P, OP036-V and OP036-S are shown below.

**Table 3-2 Function/ operation/ adjusting keys of OP036-P**

Key	Function	Remarks	Key	Functions	Remarks
<b>Window Switchover Function Key</b> (Click one key to switch to specified window, can achieve fast switchover between windows.)					
	System Alarm Window			Switch to Tuning Page	
	Pop-up Menu Window	Not Support		Trend Display Window	
	View Switchover	Not Support		Graphics Window	
	Process Alarm Window			Current Tag Window	Not Support
	Main Window			Previous Page	
	System Overview			Next Page	
	Data Viewer			Backward	Not Support
	Tuning Group			Forward	Not Support
<b>Alarm Operation Key</b> (Acknowledge and silence the alarm sound.)					
	Alarm Acknowledge			Alarm Silence	
<b>Parameter Adjustment Key</b> (Use these control keys with panel of monitoring software, provide shortcut operations for panel and achieve parameter settings.)					
	Loop Automatic Key	Not Support			Increase
	Loop Manual Key	Not Support			Decrease

























Key	Function	Remarks	Key	Functions	Remarks
	ON				Fast Increase
	OFF				Fast Decrease

Table 3-3 Function/ operation/ adjusting keys of OP036-V

Key	Function	Remarks	Key	Functions	Remarks
<b>Window Switchover Function Key</b> (Click one key to switch to specified window, can achieve fast switchover between windows.)					
	System Alarm Window			Switch to Tuning Page	
	Pop-up Menu Window	Not Support		Trend Display Window	
	View Switchover	Not Support		Graphics Window	
	Process Alarm Window			Current Tag Window	Not Support
	Operation Guide	Support VisualField V3.1 SP02 and later versions.		Previous Page	
	System Overview			Next Page	
	Data Viewer			Backward	
	Tuning Group			Forward	
<b>Alarm Operation Key</b> (Acknowledge and silence the alarm sound.)					
	Alarm Acknowledge			Alarm Silence	
<b>Parameter Adjustment Key</b> (Use these control keys with panel of monitoring software, provide shortcut operations for panel and achieve parameter settings.)					
	Loop Automatic Key			Increase	



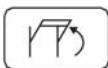





















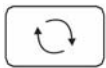







Key	Function	Remarks	Key	Functions	Remarks
	Loop Manual Key			Decrease	
	ON			Fast Increase	
	OFF			Fast Decrease	

Table 3-4 Function/ operation/ adjusting keys of OP036-S

Key	Function	Remarks	Key	Functions	Remarks
<b>Window Switchover Function Key</b> (Click one key to switch to specified window, can achieve fast switchover between windows.)					
	System Alarm Window			Switch to Tuning Page	
	Pop-up Menu Window	Not Support		Trend Display Window	
	View Switchover	Not Support		Graphics Window	
	Process Alarm Window			Current Tag Window	Not Support
	Main Window			Previous Page	
	System Overview			Next Page	
	Data Viewer			Backward	Not Support
	Tuning Group			Forward	Not Support
<b>Alarm Operation Key</b> (Acknowledge and silence the alarm sound.)					
	Alarm Acknowledge	Not Support		Alarm Silence	
<b>Parameter Adjustment Key</b> (Use these control keys with panel of monitoring software, provide shortcut operations for panel and achieve parameter settings.)					

Key	Function	Remarks	Key	Functions	Remarks
	Loop Automatic Key	Not Support		Increase	Not Support
	Loop Manual Key	Not Support		Decrease	Not Support
	ON	Not Support		Fast Increase	Not Support
	OFF	Not Support		Fast Decrease	Not Support

### 3.3.3 Standard Input Key

The layout of standard input keys is in accordance with QWERTY keyboard, with exactly the same layout of English letters. The number keys are arranged independently according to small keyboard with symbols.

The combination of an input key and SHIFT key is invalid on operator keyboard OP036-P.

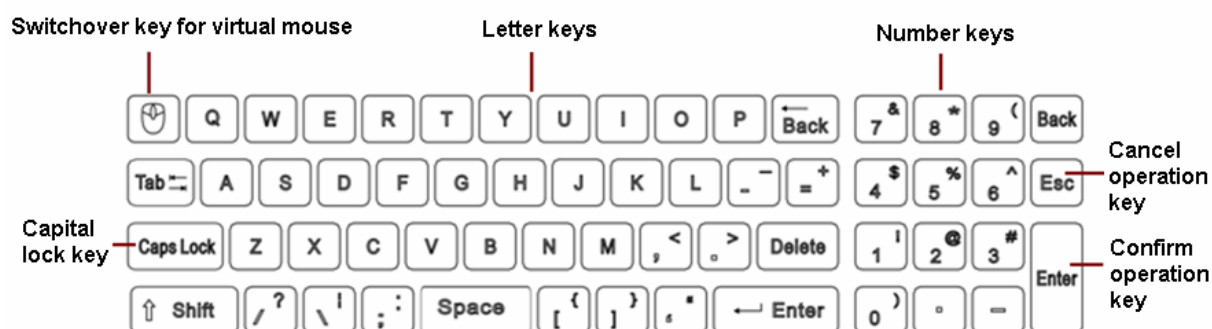

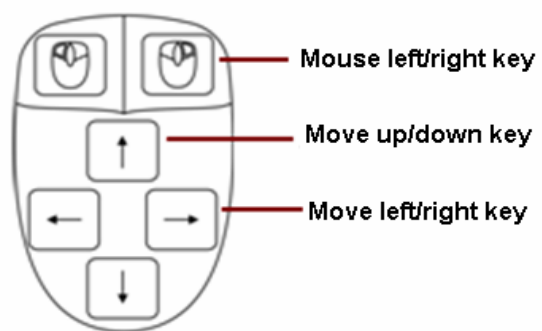


Figure 3-4 Instruction of standard input keys

### 3.3.4 Cursor Moving Key

Double-function: the function is to move cursor by default; when mouse is at fault, it can switch to virtual mouse status.

Operation method: press the key  on the top left corner of standard input area (Figure 3-4) to switch status. The switch status will be indicated by LED light. Please refer to Table 3-1 for details. The cursor moving key is shown below.



**Figure 3-5** *Instruction of cursor moving key*

## Section 4 Installation

### 4.1 Boundary Dimension of Keyboard

The size of keyboard is illustrated in Figure 4-1 and the unit is mm. The length of keyboard wire is  $1500\text{mm} \pm 20\text{mm}$ .

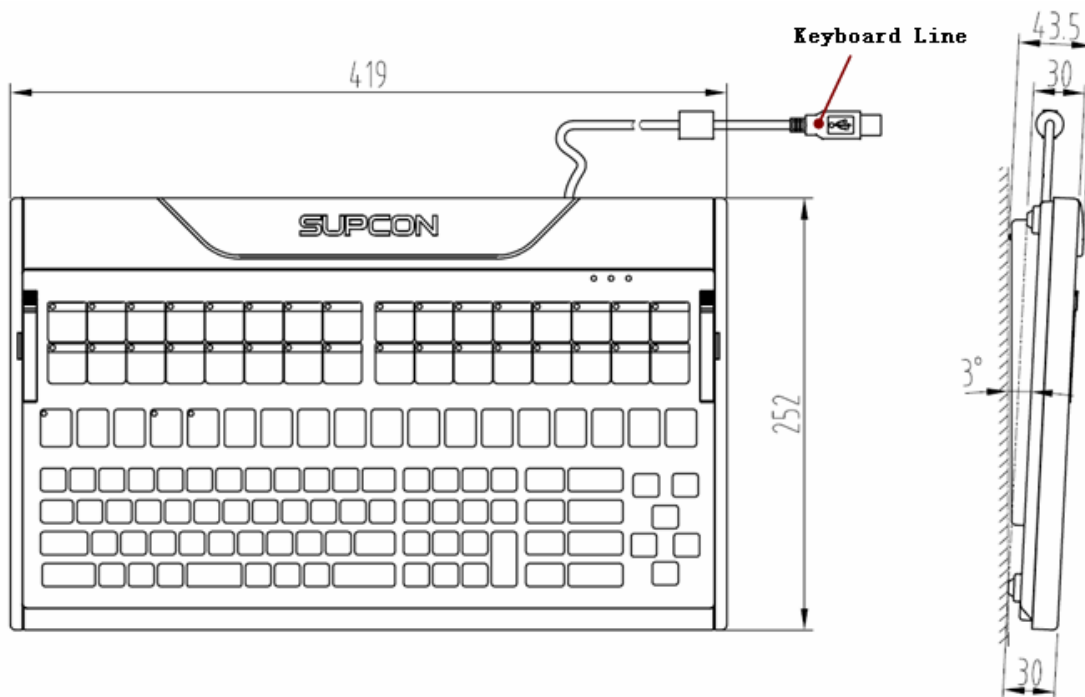


Figure 4-1 Keyboard size

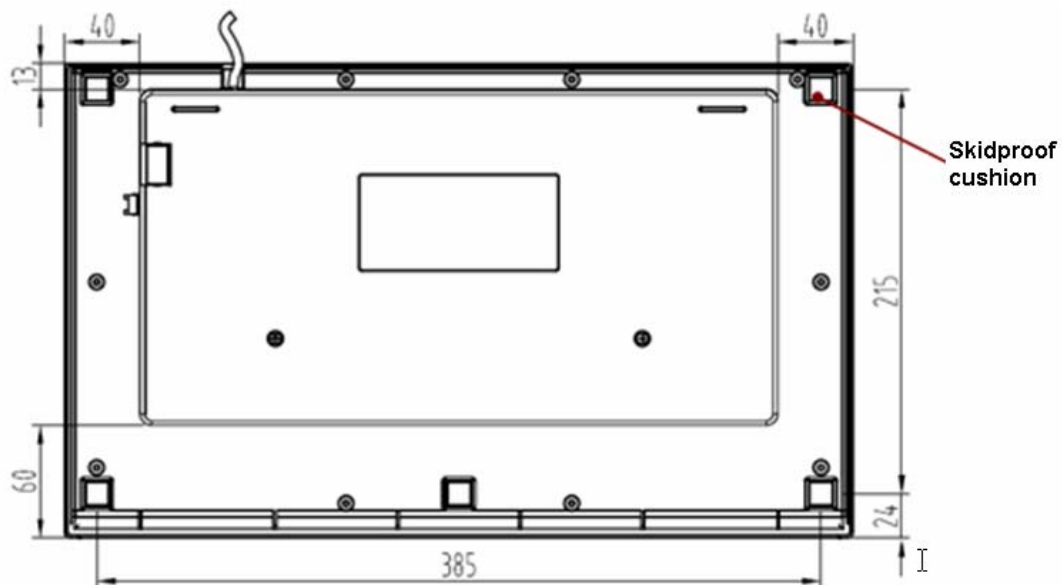


Figure 4-2 Size of keyboard back

## 4.2 Installation Method of Keyboard

### 4.2.1 Place on Table

It can be placed on the table of operation platform. Drilling holes in the table is not needed. This method is the same as placing a general keyboard.

### 4.2.2 Imbedded Installation

Drill holes with appropriate size in the table, and imbed the keyboard into the operation platform.

## 4.3 Custom Key Label

The specific name and function of custom key are usually determined in project field. Therefore, the custom keys need to be labeled in project field. The method for drawing the label is as follows:

- 1) Remove the label depression bar. Use a tool (for example, pincers) to pull out the label. The left label should be pulled to the left, and the right label should be pulled to the right.
- 2) Print or write down the names of keys with marker pen at the corresponding place on the label.
- 3) After names are put down, insert the label into the original position.

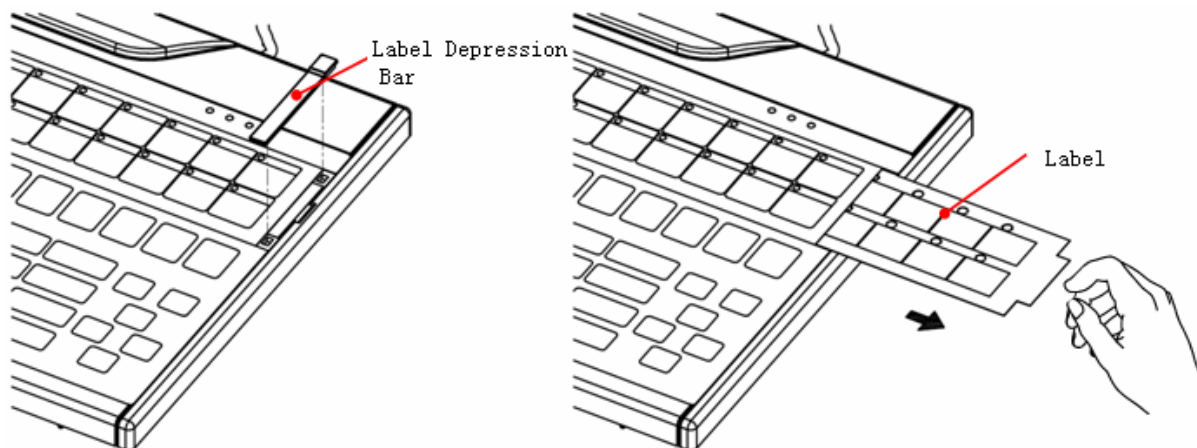


Figure 4-3 Method for drawing the label out

## 4.4 Wire Connection



**ESD HAZARD:**

Wear the anti-static wrist bracers before wiring.

### 4.4.1 Keyboard Wire

The USB keyboard wire should be connected to the corresponding USB interface of industrial PC.

If the distance between keyboard and industrial PC exceeds 5m, a driver with long wire<sup>3</sup> is needed.

Note:

<sup>3</sup> The special driver with long wire is needed. Otherwise, some functions of keyboard will be lost, for example, virtual mouse.



## Section 5 Troubleshooting

---

- If the light “Status” becomes dark during working, it may be caused by fault in USB interface or keyboard. It is recommended to pull out the USB interface and then insert it in. If the light “Status” is still off after pull-out and insertion, then the USB interface and keyboard need to be checked.
- If the light “Status” does not flash when pressing keys other than SHIFT, it indicates that keyboard OP036 is not working normally. It is recommended to pull out the USB interface and then insert it in. If the light “Status” is still off after pull-out and insertion, then the USB interface and keyboard need to be checked.
- If the light “Status” is off when the USB interface of keyboard is connected to the USB interface of computer, it indicates that the keyboard or computer is at fault. It is recommended to pull out the USB interface and then insert it in. If the light “Status” is still off after pull-out and insertion, then the computer, USB interface and keyboard need to be checked.

## Section 6 Notice

---

- Do not operate the keyboard with objects with sharp points; otherwise the film of keyboard will be broken quickly.
- Do not knock the keys hard, it will greatly shorten the life of keyboard.
- Do not eat food over the keyboard.
- Do not place cup with water beside the keyboard.
- Clean the keyboard on a regular basis.

Use soft and clean wet cloth to wipe the keyboard. For stubborn stains, neutral detergent or small quantity of washing powder can be tried to clean them. After cleaning, the keyboard should be wiped again with wet cloth. Medical alcohol disinfectant is not allowed for cleaning work, because it may have negative effect on the plastic components of the keyboard. The cleaning process should be carried out during shutdown.

- Avoid scratching and impact.
- Do not push the keyboard on the table to prevent the skid-proof cushion from being loose.
- Do not insert the USB interface tilted in to the PC interface, which will cause damage to the USB interface.
- Do not squeeze the USB cable, or it will cause its outer layer rupture.
- When using long wire drive, please use suitable long wire driving equipment. The unsuitable long wire driving equipment may affect the keyboard function.
- OP036-P is used in pair with AdvanTrol-Pro software series, and it doesn't possess acoustic-optical alarming function.
- OP036-V is used in pair with VisualField software series, and versions below or equal to VisualField V3.1 SP03 doesn't possess acoustic-optical alarming function.
- When operating the direction key of virtual mouse, do not press two keys at the same time.
- When operating the direction key of virtual mouse, do not press keys in other area at the same time. Pressing down other keys may cause the direction key pause. It can be operated again when other keys are released.

## Section 7 Revision

---

*Table 7-1 Retrofit list of the version*

Document Version	Applicable Product Version	Remarks
V1.0		The first version.
V2.0(20140220)		Modify the format and some contents. Add instruction for OP036-S and delete the atmosphere pressure parameter.
V2.1(20141107)		Modify Notice, and delete loudspeaker
v2.2(20161018)	OP036	Add code.
v2.3(20190409)	OP036	Revise the function key description