BLAUPUNKT

User Manual

VIBRATION DETECTOR
BP-VIBD01

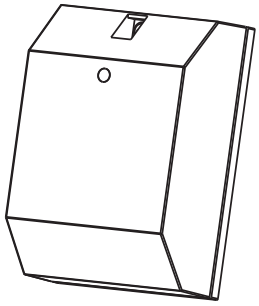


Enjoy it.

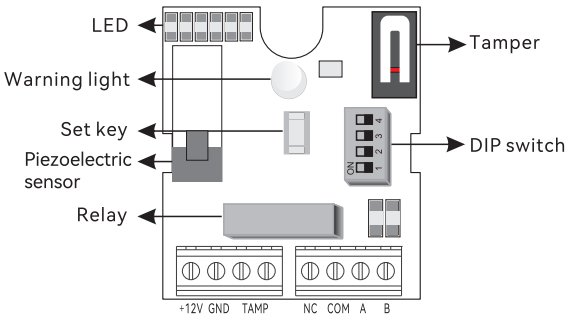
● Product Brief

The vibration displacement detector uses a 3-axis acceleration sensor chip, a high-performance ARM processing platform, and adopts Kalman and wavelet filtering algorithms according to actual application requirements, which can effectively filter the vibration interference signals often generated in natural background, such as: ATM machine deposit and withdrawal Mechanical vibration, vibration generated by roadside cars passing by, etc. In order to achieve the purpose of safety precautions for the protected equipment.

The detector can detect the displacement state of the equipment and the vibration signal of percussion. Through coarse adjustment and fine adjustment of sensitivity, the sensitivity of displacement and percussion vibration can be adjusted separately. The installation site understands the environmental noise through the lights, and automatically corrects the balance shaft, which can accurately adjust the sensitivity and minimize false alarms. The structure adopts aluminum alloy shell, electroplating process and metal baking paint process, beautiful appearance, convenient installation and debugging.



Overall appearance



PCB

● Specifications

Working voltage	DC 9~15V
Working current	Monitoring≤25mA, alarm≤15mA
Detection range	5 meters in radius
Alarm output	N.C./N.O., passive dry contact (DC30V 1A)
Tamper output	N.C., passive dry contact (DC30V 1A)
Installation method	Wall-mounted or horizontal (please keep the body horizontal or vertical to the ground)
Working environment	-10℃~55℃, 10%~95%RH non-condensing
Size specification	L60.9mm*W41.5mm*H27.2mm

● Wiring port definition

Port	Symbol	Meaning	Port	Symbol	Meaning
1	+12V	power input	5	COM	Alarm Output
2	GND	Grounded	6	NC	Alarm Output
3	TAMP	Tamper output	7	BUS_A	RS-485 interface (1)
4	TAMP	Tamper output	8	BUS_B	RS-485 interface

*RS485 interface is polarized and cannot be reversed

● Features

1. The gyroscope and the piezoelectric sensor work synchronously, with high detection accuracy and low false alarm rate.
2. Two working modes, user mode does not need to set sensitivity, just adjust the DIP switch, up to 4 levels. 16 levels of engineering mode adjustable.
3. Adjustable alarm sensitivity, adjustable number of vibration percussion.
4. Sensitivity adjustment method: support remote RS-485 command adjustment and local manual adjustment.
5. Built-in temperature sensor, the body temperature exceeds the limit alarm (the temperature change exceeds 5 degrees Celsius within 30 S).
6. With automatic shaft balance correction function.

● Lamp description

Light indication	Meaning
Fast flashing of the red light (at the origin)	Gyroscope is in automatic calibration
Flashing of the blue light (along the axial direction)	Vibration intensity output
Slow flashing of the red light (at the origin)	Piezoelectric is in automatic calibration
Long lighting of the red light (alarm light)	Alarm output
Long lighting of the blue light (along the axial direction)	Tilt angle output
Slow flashing of the red light (alarm light)	Temperature exceeds the set value

● Switch setting

User mode setting:

Press and hold the setting key for 3 seconds, the blue LED array flashes, release the key, and enter the sensor detection mode setting.
Short press the setting key to cycle through the setting of the detection mode:
One blue light on: Only tilt mode
Two blue lights on: Only vibration mode (default)
Three blue lights on: Tilt + Vibration mode

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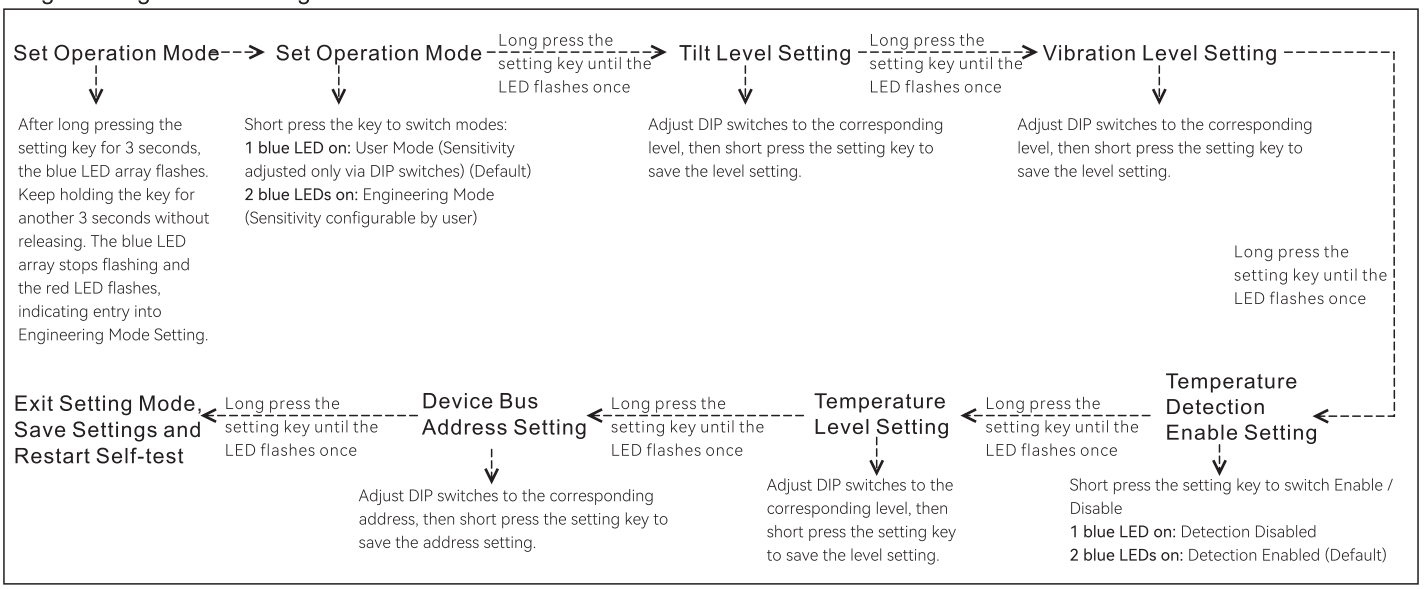
Press and hold the setting key to enter the vibration mode setting. (Only effective when the vibration alarm function is enabled)
Short press the setting key to cycle through the setting of the detection mode:
One blue light on: Single gyroscope sensor works
Two blue lights on: Single piezoelectric sensor works (Not effective in only tilt mode)
Three blue lights on: Both piezoelectric and gyroscope work (default)

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Press and hold the setting key to exit the setting mode, save and restart for self-checking.

P/N:26170801B04

Engineering Mode Setting:



Factory Reset: Hold down the setting key while powering on. When the red LED flashes, the device will restore factory default settings.

● DIP switch

①Normal work: user mode, vibration times

Code / Time	SW1	SW2
1	OFF	OFF
3	OFF	ON
6	ON	OFF
9	ON	ON

User mode, inclination, vibration level:

Code / Level	SW3	SW4
F1	OFF	OFF
F5	OFF	ON
F10	ON	OFF
F15	ON	ON

Engineering mode, vibration times:

Code / Time	SW1	SW2	SW3	SW4	Code / Time	SW1	SW2	SW3	SW4
1	OFF	OFF	OFF	OFF	9	ON	OFF	OFF	OFF
2	OFF	OFF	OFF	ON	10	ON	OFF	OFF	ON
3	OFF	OFF	ON	OFF	11	ON	OFF	ON	OFF
4	OFF	OFF	ON	ON	12	ON	OFF	ON	ON
5	OFF	ON	OFF	OFF	13	ON	ON	OFF	OFF
6	OFF	ON	OFF	ON	14	ON	ON	OFF	ON
7	OFF	ON	ON	OFF	15	ON	ON	ON	OFF
8	OFF	ON	ON	ON	16	ON	ON	ON	ON

The above settings will take effect

②Setting mode: bus address setting

Code / Address	SW1	SW2	SW3	SW4	Code / Address	SW1	SW2	SW3	SW4
0	OFF	OFF	OFF	OFF	8	ON	OFF	OFF	OFF
1	OFF	OFF	OFF	ON	9	ON	OFF	OFF	ON
2	OFF	OFF	ON	OFF	10	ON	OFF	ON	OFF
3	OFF	OFF	ON	ON	11	ON	OFF	ON	ON
4	OFF	ON	OFF	OFF	12	ON	ON	OFF	OFF
5	OFF	ON	OFF	ON	13	ON	ON	OFF	ON
6	OFF	ON	ON	OFF	14	ON	ON	ON	OFF
7	OFF	ON	ON	ON	15	ON	ON	ON	ON

Inclination level, vibration level, temperature level settings:

Code / Grade	SW1	SW2	SW3	SW4	Code / Grade	SW1	SW2	SW3	SW4
1	OFF	OFF	OFF	OFF	9	ON	OFF	OFF	OFF
2	OFF	OFF	OFF	ON	10	ON	OFF	OFF	ON
3	OFF	OFF	ON	OFF	11	ON	OFF	ON	OFF
4	OFF	OFF	ON	ON	12	ON	OFF	ON	ON
5	OFF	ON	OFF	OFF	13	ON	ON	OFF	OFF
6	OFF	ON	OFF	ON	14	ON	ON	OFF	ON
7	OFF	ON	ON	OFF	15	ON	ON	ON	OFF
8	OFF	ON	ON	ON	16	ON	ON	ON	ON

● Attached table: troubleshooting

Code	Phenomenon	Cause	Solution
E01	Only the origin red light flashes quickly	The sensor fails the self-test	Power-on again
E02	The alarm red light flashes slowly	The temperature threshold is set too low	Reset the temperature threshold
E03	The sensitivity is low	The default sensitivity does not meet the usage scenario	Reset
E04	False alarm	Too high sensitivity or caused by interference	Adjust related configuration

● Installation and debugging instructions

1. When the detector is powered on, the alarm red light and the origin red light flashing indicate that the axis balance is being detected. After the detection is passed, the 2 red lights will be on once and the normal working mode will be entered. If it flashes for a long time, the environmental vibration interference should be eliminated. After normal operation, the red light at the origin point flashes to indicate that the axis balance is automatically corrected to obtain the consistency of sensitivity.

2. The user can obtain the data of 3 axes in real time by sending instructions during installation, and determine the product installation posture according to the axis balance detection conditions.

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