

Model: YD420 Axis Vibration Monitor



Brief Introduction

YD420 intelligent shaft vibration monitor is a precision intelligent measurement and control instruments, widely used in electric power, petroleum, chemical and other departments. Through eddy current sensor, the instrument can continuously monitor and measure the axis vibration of turbine, fan and other rotating machine. It has alarm and shutdown control signal output, equipped with current output and RS485 interfaces, the instrument can connect with computers and other devices. The Monitor uses an 80×160×205 (mm) chassis, LED digital display, PVC color mask and light touch keys, and it has beautiful appearance, novel style, reasonable structure, simple installation, stable performance and reliable quality.

Main Function

- 2.1 With two channels, each channel can measure and display vibration amplitude.
- 2.2 With alarm protection function, when vibration amplitude exceed alarm set value, the alarm indicator light will on, and meanwhile output on/off signal at the rear of the panel to protect the monitored equipment.
- 2.3 User can arbitrarily set by pushing any buttons in the front of the panel if two level alarm setting value is in the measuring range.
- 2.4 With current output and RS485 interfaces which can connect with computers and other devices.



Technical Parameters

3.1 YD420 Intelligent Shaft Vibration Monitor

3.1.1 Signal Input: YD9800 eddy current sensor

3.1.2 Measurement range: 0~200um

Range can be determined according to users' needs

3.1.3 Accuracy: Linearity deviation $\leq \pm 1\%$ (full scale)

3.1.4 Display: 3 digits digital tube display

3.1.5 Frequency Response: 0~5000Hz

3.1.6 Current output: 4 ~ 20mA (can be adjusted according to users' requirements to 0 ~ 10mA) 3.1.7

Communication Interface: RS485

3.1.8 Alarm Contact Capacity: DC28V 3A

3.1.9 Working Environment: Temperature: -30 °C ~ 50 °C Relative humidity: $\leq 85\%$

3.1.10 Power Supply: AC 220VAC $\pm 30\%$ 50Hz Power $\leq 20W$

3.1.11 Dimensions: 80 × 160 × 150mm (H × W × L)

3.1.12 Hole Size: 76 × 152 (H × W)

3.2 YD9200 Eddy Current Sensor

3.2.1 Probe Diameter: $\phi 8\text{mm}$

3.2.2 Linear Range: 2mm

3.2.3 Sensitivity: 8V/mm

3.2.4 Linearity: 2%

3.2.5 Frequency Response: 0~5KHZ

3.2.6 Probe Length: 55mm etc.

3.2.7 Mounting Thread: M10×1mm

3.2.8 Working Temperature: Probe: 30°C ~ 120°C

Proximiator 30°C ~ 60°C

3.2.9 Power Supply: -24VDC

3.2.10 Dimensions: 83×61×49mm(L × W × H)

Proximiator 30°C ~ 60°C

3.2.11 Power Supply: -24VDC

3.2.12 Dimensions: 83×61×49mm(L × W × H)

Operation Instructions

YD420 intelligent shaft vibration monitor shown in Figure one. It can simultaneously monitor vibration channel I and II, upper part is channel I part with 3 digital tube display, alarm I value instruction light, alarm II value instruction light, displacement button, add button, confirmation button, settings button, the lower half is II channel part, with three digital tube display, alarm I value instruction light, alarm II value instruction light.

4.1 Indication Light Instruction

4.1.1 Channel I "alarm I" indication light: When the measured value exceeds the alarm set value I, the lights on.

4.1.2 Channel I "alarm II" indication light: When the measured value exceeds the alarm set value II, the lights on.

4.1.3 Channel II "alarm I" indication light: When the measured value exceeds the alarm set value I, the lights on.

4.1.4 Channel II "alarm II" indication light: When the measured value exceeds the alarm set value II, the lights on.

4.2 Key Instruction

4.2.1 " " key: this is called "shift" key, press the button each time, the selected LED will move to left for one digit, selected digital tube flashes, cyclic shift.

4.2.2 "▲" key: this is called "add" button, number on the selected digital tube will increased by 1 for every press.

4.2.3 "E" key: this is called "Confirm" button, press the key after finishing parameter settings Instrument enter into normal measurement state once storage parameters.

4.2.4 "S" key: this is called "Settings" button, press the button, and enter to the parameter setting state, setting alarm I value and alarm II value of channel I and channel II successively. Press the "S" button, the upper digital tube will circulating display "COL"、"COH"、"C1L"、"C1H"、"PPP" in turn, respectively indicate channel I alarm I value, "channel I alarm II value, channel II alarm I value, channel II alarm II value.

4.2.5 Parameter Settings

4.2.5.1 Channel I "alarm I" value setting : Click "S" key, channel I display "COL", indicate the alarm I Value of the set channel I, channel II display the set current value, flashing bits shows this digit can be increased, each click of "▲" key will increase 1 on this digit, value cycling between 0 to 9. Click the " " key can select 10 digits, each click of "▲" key will increase 1 on this digit, value cycling between 0 to 9. Press " " key can select 100 digits, each click of "▲" key will increase 1 on this digit, value cycling between 0 to 9.

4.2.5.2 Channel I alarm II setting: continue to click "S" key, the channel I shows "COH", indicating the alarm II value of channel I, channel II indicate the current set value, setting for alarm II value is the same as alarm I value.

4.2.5.3 Channel II alarm I setting: continue to click "S" key, the channel I shows "C1L", indicating the alarm I value of channel II, channel II indicate the current set value, setting for alarm I value of channel II is the same as alarm I value of channel I.

4.2.5.4 Channel II alarm II setting: continue to click "S" key, the channel I shows "C1H", indicating the alarm II value of channel II, channel II indicate the current set value, setting for alarm I value is the same as alarm I value.

4.2.5.4 Continue to click "S" key, channel I display "PPP", then press "E" key, exit and save the predetermined alarm value into the normal measurement state.

Installation

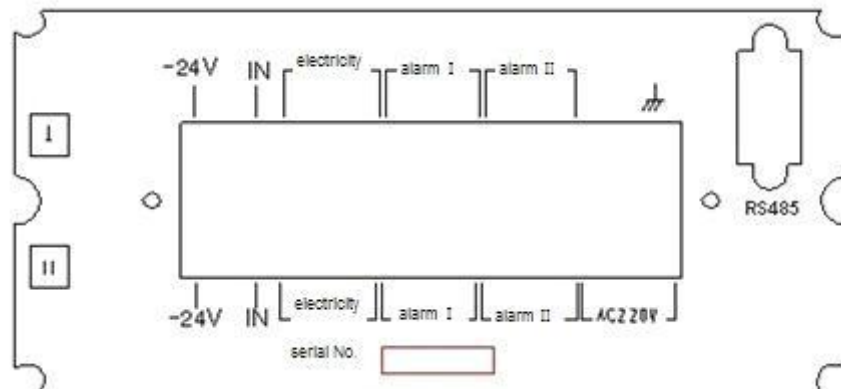


Figure: Wiring Diagram for YD420 Intelligent Shaft Vibration Monitor

5.1 Wiring instructions for YD420 shaft vibration monitor rear panel 5.1.1 Line I

-24V: -24V DC power supply, connect with proximator VDC side of YD9800 eddy current sensor.

IN: signal input side, connect with proximator input side of YD9800 eddy current sensor.

Current -: 4 ~ 20mA current output negative terminal, and signal ground connected. External load ≤ 500Ω.

Current +: 4 ~ 20mA current output positive terminal, external load ≤ 500Ω.

Alarm I: relay output, normally an open circuit between two points, i.e., the resistance is infinite, when alarm I lights on, the relay is close, the resistance between two points is zero.

Alarm II: relay output, normally an open circuit between two points, i.e., the resistance is infinite, when alarm II lights on, the relay is close, the resistance between two points is zero.

5.1.2 Line II

-24V: -24V DC power supply, connect with proximator VDC side of YD9800 eddy current sensor.

IN: signal input side, connect with proximator input side of YD9800 eddy current sensor.

Current -: 4 ~ 20mA current output negative terminal, and signal ground connected. External load ≤ 500Ω.

Current +: 4 ~ 20mA current output positive terminal, external load ≤ 500Ω.

Alarm I: relay output, normally an open circuit between two points, i.e., the resistance is infinite, when alarm I lights on, the relay is close, the resistance between two points is zero.

Alarm II: relay output, normally an open circuit between two points, i.e., the resistance is infinite, when alarm II lights on, the relay is close, the resistance between two points is zero.

AC220V: AC220V AC power connected.

PGND, Can be connected with the earth, can't be connected with the signal ground.

5.2 Installation for YD9800 Eddy Current Sensor.

5.2.1 Composition for YD9800 Eddy Current Sensor.

Eddy current sensor system consists of the probe, extension cable, and proximator, structure of proximator as figure 3:

VDC: DC-24V power supply connected, attached with YD420 intelligent shaft monitor rear panel "-24V" terminal

Output: is -4V ~ -24V voltage output, and connects with "IN" terminal of YD420 intelligent shaft vibration monitor rear panel.

Ground: DC-24V power supply together with -4V ~ -24V voltage output, connects with "current -" terminals of



YD420 intelligent shaft vibration monitor rear panel.

SMC mother seat on proximator connect with high-frequency cable of eddy current sensor.

Probe is usually consist of coil, coil skeleton, shell, high-frequency cable, high-frequency connector, typical structure shown in figure.

Extension Cable Length A = 4 m or 8 m \pm 1