

# EDX4(ED4000) Speed Monitor Operation Manual



NEPSI Ex tD A21 · IP65 T85°C

## INTRODUCTION

EDX4 Speed Monitor is a totally new rotational speed monitoring equipment; it uses the principle of photo detector and microprocessor to accurately calculate a wide range of rotational speed. It detects rang 1~999rpm and the rotational speed display on 7-seg led.

There is a contact relay that could be used either for alarm or control purposes during the monitoring process. The alarm set point could be directly set by numerical knobs which is more convenient and more accurate than conventional means. It comes equipped with analog signal output which could be utilized for various display indications and more precise control. It is ideal for applications in monitoring low speed, stop and overload situations.

## FEATURES

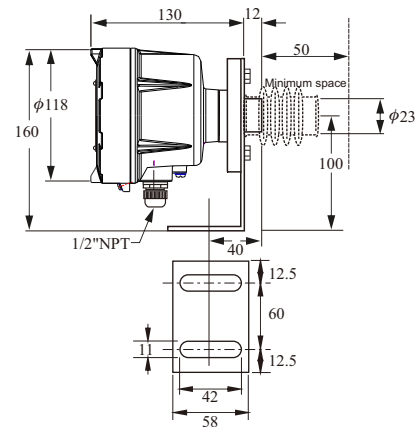
- Maximum monitoring range 1~999rpm.
- 7-seg led display 0~999
- Alarm monitoring: low speed, stop, blackout and overload.
- Start up delay function allow motor to run up gradually.
- Light pulses are not affected by environmental conditions.
- Complementary to FineTek PB/PM series digital panel meter to indicate speed.

## SPECIFICATION

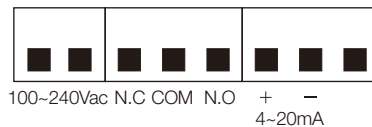
1. Measuring range: 0~999 rpm.
2. Display: LED X 3
3. Alarm set point: 1~999 rpm by rotary switch.
4. Alarm conditions: Underspeed, standstill, power failure.
5. Alarm contact rating: SPDT 5A/250V AC.
6. Speed analog output: 4~20mA  
(Signal Range Selectable: 100/200/500/1000rpm).
7. Power supply: 100~240Vac ±10% 50/60Hz
8. Power consumption: 6VA.
9. Operating temperature: -20°C~70°C.
10. Housing: Cast Aluminum.
11. Protection: IP65
12. Cable entry: 1/2"NPT X 2 hole.

## DIMENSIONS

(Unit : mm)

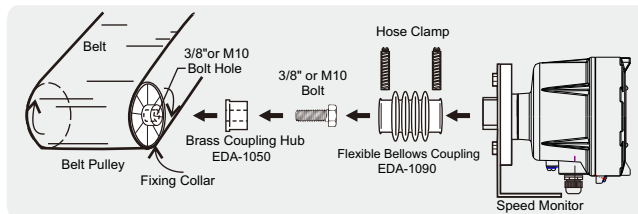


## TERMINAL ARRANGEMENTS



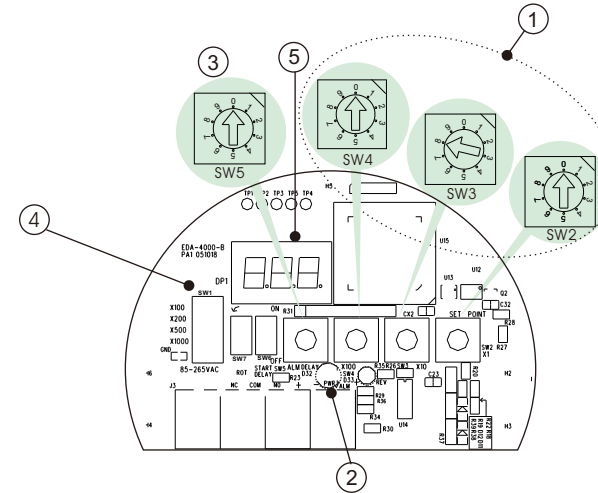
## INSTALLATION

Drill a hole size of 3/8" or M10 in the center of the belt pulley. Fix the 3/8" bolt into the fixing collar, then into the center of the belt pulley. Build a shaft for the EDX4, and align the center of the EDX4 with the axis of the belt pulley. Lastly, place the EDX4 and the Fixing Collar in the flexible Bellows coupling.



Standard Accessories: Brass Coupling Hub, Hose Clamp, Bolt Hole.

## OPERATION PANEL



- ① Set point Rotary Switch
- ② Power/Alarm Indicator (Green/Red)
- ③ Start Up Delay Selection Switch
- ④ Analog Output Range Selection Switch
- ⑤ 7-seg led display

## DESCRIPTION OF OPERATION

### 1. Set point rotary switch

The function of this switch is for setting alarm position.

The rotary switch consists of 3 buttons, including x100, x10 and x1. If the setting is at 321rpm, then rotate the SW4 to position 3, rotate the SW3 to position 2 and rotate the SW2 to 1.

### 2. Alarm indicator (Red)/Power indicator (Green)

(1) When the monitor detects the speed lower than the setting point, the alarm relay is actuated and the red light is on spontaneously; vice versa, the green light is on when the speed is rotated back to normal.

(2) Green light is for the power indicator, flashing in the startup delay state, the light will resume when the startup is completed and the system diagnosis is normal condition.

### 3. Knob Switch for Start Delay

This function provides user to smoothly accelerate the motor to target speed within a time period. The alarm will be off within the period. Set 0-9 value for 3-30 sec where the increase of value stands for 3 sec duration.

Rotary position	0	1	2	3	4	5	6	7	8	9
Delay time	3 sec	6 sec	9 sec	12 sec	15 sec	18 sec	12 sec	24 sec	27 sec	30 sec

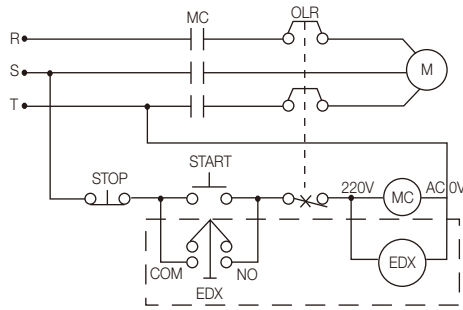
### 4. 4-20mA output range Selection Switch

This switch is to convert the detected speed into proportional current output. There are four selections which are 100rpm, 200rpm, 500rpm, 1000rpm. If setting at 500rpm, then the input speed of 0~500 rpm will be converted to 4-20mA output. For example, if the detected speed is at 250rpm, then the current output is 12mA.

This function provides user to smoothly accelerate the motor to target speed within a time period. The alarm will be off within the period. Set 0-9 value for 3-30 sec where the increase of value stands for 3 sec duration.

## EXAMPLE WIRING DIAGRAM

The figure shows the wiring diagram of EDX to monitor the motor rotation speed. While user starts up motor, the EDX will be in alarm off during the "start delay". The motor should approach the target speed before the "start delay" time out. After the "start delay" time, the EDX will activate the alarm and monitor if the motor speed is low or not.



## NOTICES

1. The product has a ground terminal. Reliable grounding should be implemented during installation. The cross-sectional area of the grounding wire should be no less than 4mm<sup>2</sup>.
2. Wiring should be made using AWG16 (1.25mm<sup>2</sup>) ~ AWG14 (2.0mm<sup>2</sup>) wires.
3. The terminal tightening torque is 12lb-in (13.8kg-cm).
4. The ambient temperature range is -20°C~70°C.
5. The rated power supply parameter of the built-in micro switch is 5A / 250VAC.
6. Make sure there are no harmful gases that may cause corrosion of aluminum alloys in the installation location.
7. Attention! Only explosion-proof products can be used in explosive dust environments.
8. If the product is to be used or maintaining in an explosive environment, the temperature resistance of the connecting cable used for wiring should be no lower than 90°C.
9. If the product is to be used in an explosive dust environment, the cable entry must be inspected and approved by certification authorities. Only cable connectors or blind plugs compliant with explosion-proof standards with a rating of Ex tD A21 IP65 can be used in explosive hazardous locations.
10. The outer surface should be cleaned on a regular basis to prevent dust from accumulating. Do not use compressed air for cleaning.
11. If the product is to be used and maintained in an explosive environment, the principle of "do not open in the presence of combustible dust" must be followed.
12. Do not attempt to replace any part of the product. If any failure occurs during operation, the product manufacturer should be consulted to prevent damage.
13. The installation, use, and maintenance of the product must be in strict compliance with the instruction manual and the following standards:  
 GB3836.13 (IEC 60079-14) Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation, GB50257 Code for construction and acceptance of electric equipment on fire and explosion hazard electrical equipment installation engineering, GB12476.2 (IEC 61241-14) Electrical apparatus for use in the presence of combustible dust - Part 2: Selection and installation, and GB15577 Safety regulations for dust explosion prevention and protection.

## SIMPLE TROUBLESHOOTING

Fault	Cause	Troubleshooting
No power	Input power specifications.	Check if the input power is correct.
Relay output error.	Incorrect wiring.	Check if the wiring is correct.
	The speed monitor is not detected.	Check if the installation is correct.
	The expansion pipe is detached.	Check and repair the expansion pipe and straps.



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