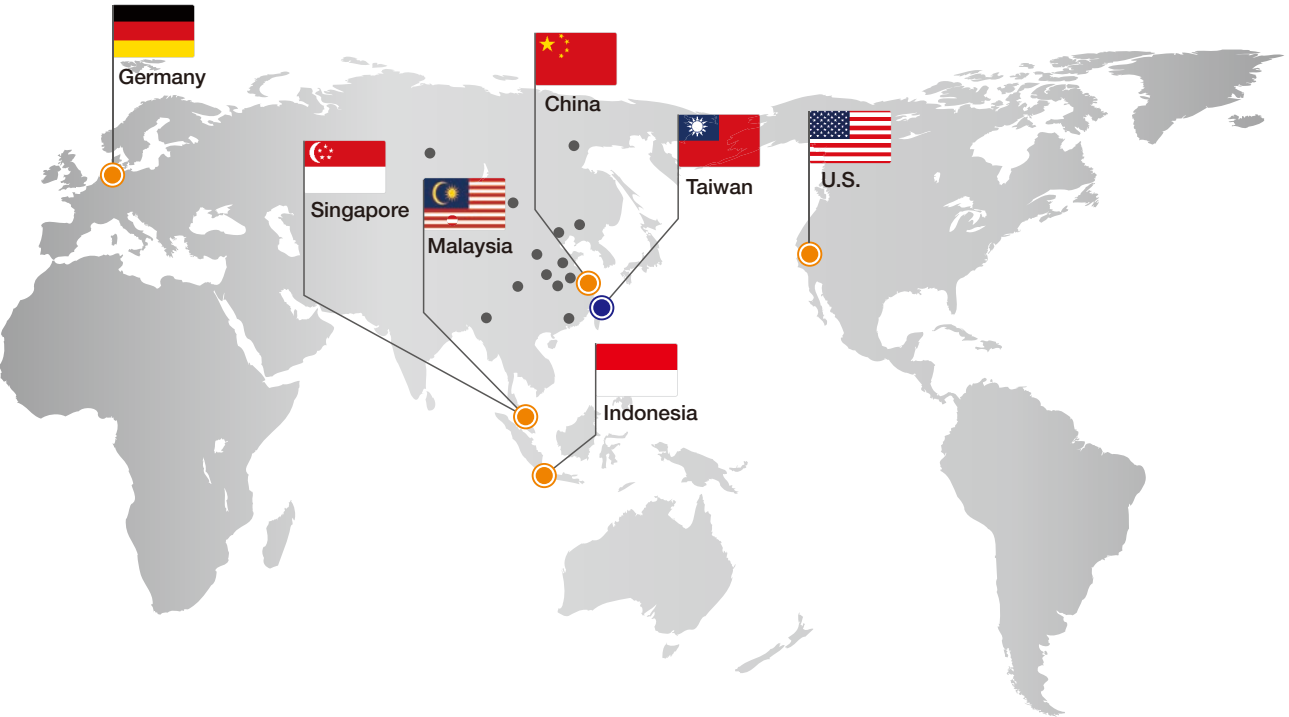


# Global Network



## PRODUCTS GUIDE

### Land monitoring and control program



www.fine-tek.com

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Distributor:

08-AII08-B0-EP, 03/22/2013



Solid / Liquid Level Measurement for Field Application  
Pneumatic Vibrator/Air Hammer  
Temperature Controller/ Counter /Digital Panel Meter





## Your BEST Partner

FineTek Technology (FineTek), accumulated experience of technology over thirty years, always focused on measurement and development in the field of industrial sensing and measurement. Expertise of its R & D capacity and strict process management, not only obtains ISO9001 certification, and provides excellent products to meet the needs of a variety of the different areas.

Without effective control of greenhouse gas emissions, enhanced greenhouse effect, Earth's average temperature has increased and ocean average temperature will rise too. Seawater thermal expansion leads to the volume get increased. In addition, the Earth's temperature degree rise will cause the melting of the ice of the Polar Regions. The sea surface rise so.

Such a temperature rise of the global climate and sea-level rise caused by global climate change is increasingly significant--such as the frequency of heavy rain may be increased. The rainfall reduced area will get dry. Accompanied by heavy rain and typhoons intensified. Rainstorms and typhoons brought disaster such as flooding, mudslides and flash floods.

The homeland maintenance and monitoring for disaster prevention is getting more and more important.

In view of this, FineTek Technology (FineTek), also dedicated and devote its measurement capability contributing for no matter bridge/ rivers monitoring and pumping stations. It is without saying that FineTek's quality is stable and durable and widely applied..

It was found in the study of mudslide warning that water is the important and basic factor of forming mudslide. Based on past data and experience, the volume of rainfall which will cause mudslide is closely related to soil composition, structure, water content and water infiltration degree. The characteristics of rainfall will influence the situation of soil moisture and infiltration, so affect the timing of mudslide and size.

Also found in mudslide warning research, the sudden surge in water streams, the color of streams getting muddy, level of water continued to drop in continuous raining, unusual sound in the valley, the slope of the valley near landslide, etc. These are important reference pointers about mudslide occurred, which are all related to rainfall. Therefore, the rain parameters are often used as important parameters for analysis. Including rainfall intensity, rainfall delay, and the volume of accumulated of rainfall and the early drop rainfall.

Measurement applications for rainfall

The products can be applied from FineTek such as: mini float level switch, optical level switch, high accuracy magnetostrictive level transmitter.

Effectively enhance the performance of rainfall recorder and collecting the data of rainfall as an important indicator for releasing mudslide warning alarm.

Monitoring the changes of streams of water

Can apply ultrasonic level transmitter and radar for detection of streams of water, changes in the streams water, the landslide warning alarm can be released as the volume of streams water reduced suddenly.

Your Made-To-Order Solutions



FD Mini float switch

OPERATING PRINCIPLE

Working by the magnet inside the float, reed switch inside the probe. The float will rise up and lower with level of liquid, reed switch will provide a ON and OFF switch action with the close or leave of the float

SPECIFICATIONS

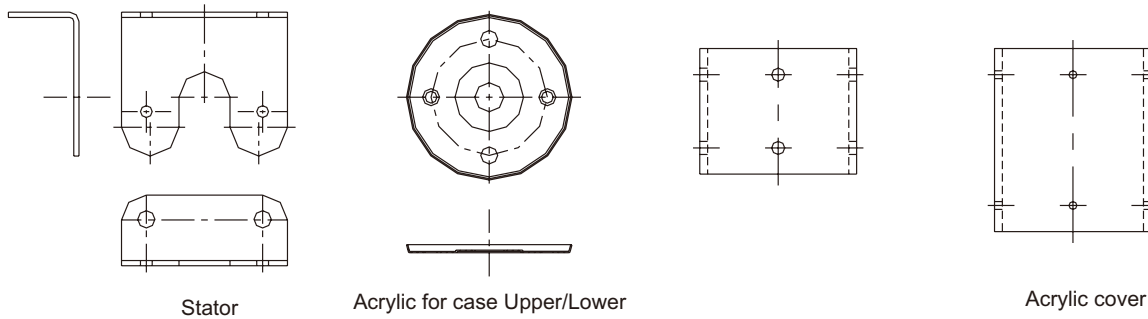
Switching Capacity	50W SPST
Max. Voltage	240Vac/200Vdc
Current	1A
Operating Pressure	1 ATM
Operating Temperature	Max. 80°C
Material	SUS 304(Float:NBR)
Suitable S.G.	0.7
Lead Wire	M12 /PVC /Silicon /DIN 43650

FEATURES

- Simple principle, high reliability
- Stainless steel SUS 304/316L
- Reed switch and wires are isolated from liquid, safe use.
- The reed switch without power supply, contact
- Long lifetime 1 million times.
- With the pipe shield to avoid incorrect signal due to frequent vibration



PARTS OF SLOSH SHIELD



SD21 Optical level switch

OPERATING PRINCIPLE

Optical level switch that is using the principle of total reflection, based on light's total reflection or penetration for the liquid level alarm output. Because the material of sensing prism compared to air, it has a quite different refractive rate, the angle of incidence is greater than the total reflection critical angle, the total reflection occurs, the light can be transmitted to the receiver. Vice versa, the liquid medium is with similar refractive rate to material of prism, almost all light will penetrate through the prism. Using this principle, optical level switch is with the light transmitter and receiver inside and can detect and determine the light in the sensor total reflection or penetration, and the act alarm circuit output for the back-end system device applications.

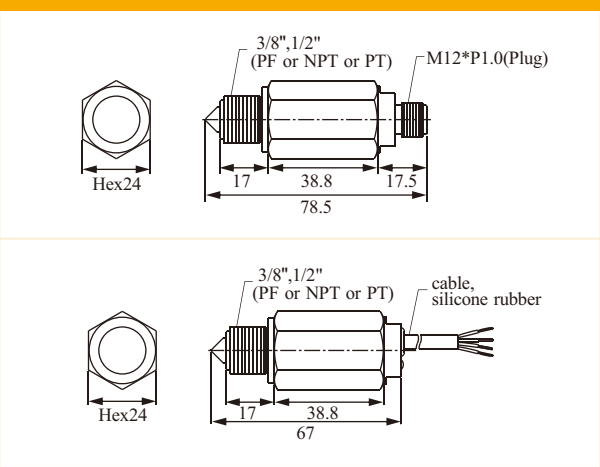
SPECIFICATIONS

Power supply range	10 ~ 28 Vdc
Current consumption	< 25 mA
Output mode	NPN / PNP
Output function	N.O. + N.C.
Load current	≤200mA
Working pressure	< 60bar
Electrical protection	Reverse polarity protection, short circuit protection
Delay time	5 sec ± 1 sec (optional)
Anti-ambient light interference	< 500 Lux
Operating temperature	-20~100°C
Ambient temperature	-20~80°C
IP Protection	IP67
Indicator lights	Red light (only cable)
Cable specifications	Cable, silicone rubber jacket, 24AWG,length 2m,4C (blue, green and black and brown)
Connection diameter	3/8" / 1/2"
Connection threads	PT/PF/NPT
Body material	SUS304 / SUS316
Prism material	Glass

FEATURES

- NPN / PNP output selection can drive the relay or PLC.
- This product provides both NO and NC output for selection.
- The product is made of glass and SUS304 / 316, can be for acid alkali, applicable to diesel fuel, waste water, solvent, alcohol, etc.
- With power polarity overcurrent protection.
- LED indicates the level status, the lights means liquid level has reached to the sensors.
- It has general and turbidity type. Turbidity type can measure turbid liquid or solvent.
- Also with time delay function for option, which is with default 5 seconds of delay time.

DIMENSIONAL(mm)





## EG32 High accuracy magnetostrictive level transmitter

### OPERATING PRINCIPLE

Magnetostrictive level transmitter is the product based on magnetostrictive principle. Its output signal is an absolute position, so it needn't to re-adjust the zero position even if the power is off and on. Magnetostrictive level gauge provides output directly, without installing any output interface, which reduces the cost of the whole circuit. Accurate and reliable output can reduce the downtime maintenance. Sensor is rugged With long life without regular maintenance or correction so needn't prepare large inventory of spare parts or increase the maintenance budget. And even available connecting to one or more sensors (by RS485) by PC for remote monitoring.

### FEATURES

- Absolute position output, needn't re-adjust for zero position as power is back restored.
- Fast response.
- High stability and reliability.
- Easy to install, and do not need regular calibration and maintenance.
- High-resolution, high-precision.
- Compact structure, environmental adaptability, stain resistant, dust-proof, resistant to high pressure.
- Enclosure protection class IP67/IP69K.
- Loop Power system, saving wiring costs.
- HART or RS485 communication interface and 4~20mA output.

### SPECIFICATIONS

Model	The EG32 high precision
Be applicable	2 Wire Loop Power output, high precision, comply with HART certification
Measuring range	25~4000mm
Nonlinearity	25mm or 500mm@ ± 100μm 501mm or 2500mm@ ± 0.02% F.S. 2501mm or 4000mm@ ± 0.04% F.S.
Repeatability	± 0.002% F.S.
Temperature Coefficient	± 100 ppm/°C
Operating pressure	30 BAR (max)
Ambient temperature	-40°C~ 85°C
Operating temperature	-40°C ~ 125°C
Temperature accuracy	± 1°C
Analog Output	4~20mA, 20~4mA, HART
Maximum load	500Ω
Digital Output	RS485(HART Option)
Power supply	18~30V
Shell material	SUS304(SUS316 Option)
Connection	1/2"PT
Wetted material	SUS304
Shell protection	IP67 (housing) / IP69 (probe)



The hydrological and physiographic factors of river are with high connection. With high density rainfall, coupled with varying river slope and river water level changes, and various external weather factors will be difficult to present accurate alarm notification.

(FineTek) radar, ultrasonic level gauge and pressure transmitter have been physically used in many bridges and rivers such as: Yichang Bridge Fongbin Bridge Zhongshan Bridge, Zhongzheng Bridge, mountain bridge, Hualien Bridge, Taroko Gorge Bridge, ... hydrological areas and show its wide applicability. After various streams real test and worked with related systems integrators, its stability and durability are well known with good reputation.

In order to assist the flood control people to grasp the correct timing and parameters for potential disasters, FineTek's products provide stable measurement and long term record of definite and precise measurement for full range of hydrological data collection, monitoring, analysis and integration. And accordingly make a correct judgment as the future hydrological monitoring and disaster preparedness and also assist the responsible units implementing watershed management in order to achieve the purpose of disaster prevention and reduction.



## EA Ultrasonic level transmitter

## OPERATING PRINCIPLE

The ultrasonic detector capable of launching a bunch of strong ultrasonic pulse when this sound wave reaches the surface of the material will be reflected the wave returned sensing head, this reflected wave is converted into an electrical signal via the sensor head, and then sent sonic reflection transfer is calculated by the controller to the ultrasonic controller time, converted to a material level or distance.

$$D = (334.1 + 0.6 t) X_T / 2,$$

D representing the distance

t represents the temperature

T representative delivery time.

ZMICROFLEX-C is composed of one of the electronic unit with the sensing probe. Can provide continuous 4 ~ 20mA signal output and directly connect to PLC, DCS and SCADA system.

Adapt the unique tracking technology of PULSE and AGC echo to ensure measurements of high accuracy and precision, so that the system can work in harsh environments.

## Simple structure

Simple appearance, the built-in LCD display, three sets of keys placed in the box to avoid misuse. Eight kinds of parameters for easy usage and calibration to users.

### Simple operation

Can plan for material position or distance and the unit can be in meters, feet, inch.

Can input actual value at any position as for empty and full tank level position.

### Fast response

Generally, the reaction rate of the ultrasonic transmitter is slower, but the product's traceability of changes in the rate of up to 10 meters / per minute, not having the risk of loss of signal.

## Wide application environments

This product can be used in explosion-proof areas and corrosive environments, and can be used in ATEX ZONE 0 environment, material of sensing probe is PVDF can be suitable for a variety of corrosive environments.

**Product reliability is high**

There have been thousands of successful cases globally for the applications of ultrasonic level transmitters used for liquid measurements.

### Exclusion for invalid echo

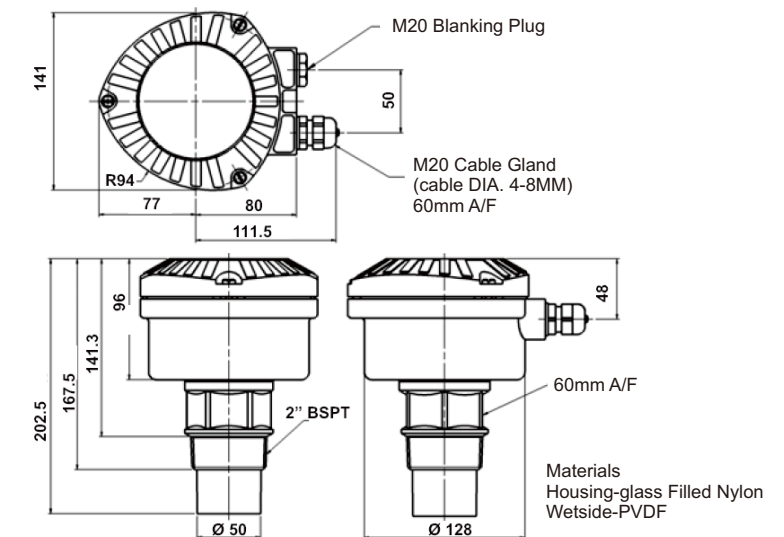
This product can be selected with function of invalid echo exclusion. Can memorize 2 sets of invalid echo positions and neglect the processing to have the accurate detected value.

## FEATURES

- 4-20mA two-wire output .
- 12-30VDC power supply .
- IP67 protection rating.
- The structure of the integrated.
- The sensing probe material for PVDF.
- Exclusion for invalid echo .
- 2 " connection structure.
- Non-contact measurement, easy installation.
- Fully isolated analog output.
- Internal temperature compensation, and can increase the measurement accuracy.
- Beam angle 6°.
- Not affected by the properties of the liquid, such as temperature, specific gravity, viscosity.

## SPECIFICATIONS

Dimensional(mm)



Model	ZMICROFLEX-C	ZMICROFLEX-CER	ZMICROFLEX-CIS
Measuring Range	8M(0.3~8M)	10M(0.45~11M)	10M(0.45~11M)
Accuracy	<1.0m±5mm. >1.0m±0.5%*	<1.0m±2.5mm. >1.0m/3.3ft±0.25%*	<1.0m±2.5mm. >1.0m/3.3ft±0.25%*
Resolution	1mm	1mm	1mm
Dead band	300mm	450mm	450mm
Ambient temperature	-20~70℃	-40~60℃	-40~60℃
Operating temperature	-20~70℃	-30~70℃	-30~70℃
Operating pressure	-0.25~3Bar	-0.25~3Bar	-0.25~3Bar
Power supply	2 wire 12~30Vdc	2 wire 12~30Vdc	2 wire 12~30Vdc
Analog output	4~20mA(750 Ohm)	4~20mA(750 Ohm)	4~20mA(750 Ohm)
Relay output	None	2XSPST/1A 24V DC	None
Communication protocol	None	HART	HART
Display	4 digital 12mm LCD	4 digital 12mm LCD	4 digital 12mm LCD
Electrical entry	2XM20X1.5	2XM20X1.5	2XM20X1.5
Transducer material	PVDF	PVDF	PVDF
Casing material	Nylon	Nylon	Nylon
Process connection	2" BSPT/NPT	2" BSPT/NPT	2" BSPT/NPT
Protection rating	IP67	IP67	IP67
Beam angle	±6°(3dB)	±6°(3dB)	±6°(3dB)
Electromagnetic compatibility	EN 50081-1 EN 50082-2	EN 50081-1 EN 50082-2	EN 50081-1 EN 50082-2
Explosion rating	None	None	EEx ia II C T4~T6
Weight	850g	1200g	1200g

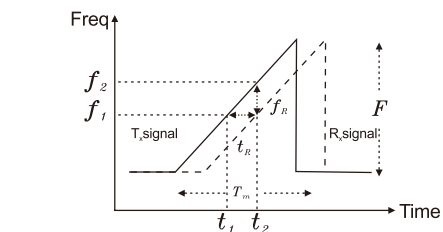


## JRF Radar material & liquid level transmitter

## OPERATING PRINCIPLE

FMCW radar (JFR): frequency modulated continuous wave, use high-frequency (The GHz level) scan mode, the electromagnetic wave is emitted via an antenna to the measured object, reflected back to the receiving end. When the transmitted wave reflected back from the measured object, and then received via the antenna, it will have a frequency difference. It can further calculate the distance between transmitted end to measured object and even know the volume of materials in tank.

FMCW radar measures by scanning X Band frequency. Bandwidth about 0.5G Hz, Fast Fourier transformation (FFT) to identify the signal in intermedium frequency (IF). This FMCW radar is innate with signal/ noise enhancement and filtering of echo-back via Phase-Lock Loop (PLL) circuit that is the best solution for complex environment and high accuracy measurement.



### Design formula

$$Slop = \frac{F}{T_m} = \frac{f_R}{t_R} = \frac{f_R}{\frac{2R}{c}} \quad t_R = \frac{2R}{c}$$

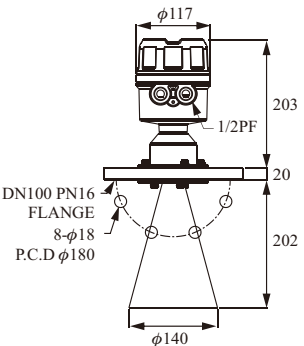
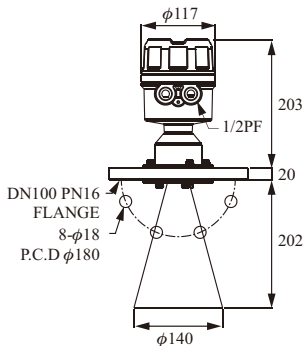
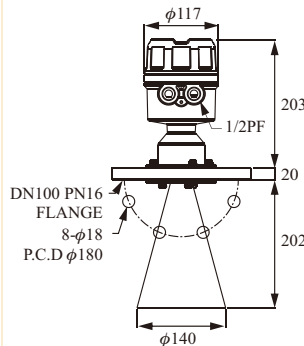
$$R = \frac{F_R \times c \times T_m}{2F}$$

## FEATURES

- Non contact measuring.
- Corrosive and toxic liquid, hydrocarbons, slurries.
- Not affected by specific gravity, pressure, temperature, viscosity, foam, and dust
- 5 digits LCM display.
- Indicate signal wave inside the silo.
- Selection of Different Measurement unit (m, cm, mm, inch, ft, %, mA)
- Measuring distance and actual level.
- Language selection of traditional Chinese, simplified Chinese, English.
- 4-20mA/ 4 lead wires.
- Modbus RS-485 to enhance isolation and easy for remote control.
- CE standards for isolation (EFT 2000V, B class or better)
- Suitable for mid-range signal.
- 4mA, 20mA output.
- Set functions to the continuous measuring device via FAS software.
- Isolated circuit design.

## SPECIFICATIONS

Dimensions Figures  
(mm)



Model	JFR-10-□-□□□-A	JFR-10-□-□□□-B	JFR-10-□-□□□-C
Measuring range	20m(max.30m)	20m(max.30m)	20m(max.30m)
Accuracy	± 5mm (1m~5m)	± 10mm (1m~5m)	± 20mm (1m~5m)
Repeatability	± 2.5mm	± 5mm	± 10mm
Digital comm.	RS485(Isolated)	RS485(Isolated)	RS485(Isolated)
Ambient temp.	-20~70℃	-20~70℃	-20~70℃
Operating temp.	-20~200℃	-20~200℃	-20~200℃
Operating pressure	0~40 bar	0~40 bar	0~40 bar
Frequency	X Band	X Band	X Band
Analog output	4~20mA/ 4 Wire	4~20mA/ 4 Wire	4~20mA/ 4 Wire
Power consumption	100mA/ 24Vdc	100mA/ 24Vdc	100mA/ 24Vdc
Protection rating	IP65	IP65	IP65
Min. dielectric constant	2.5	2.5	2.5
Power supply	24Vdc± 10%	24Vdc± 10%	24Vdc± 10%
Local display	5 digits LCM display	5 digits LCM display	5 digits LCM display
Housing Material	Aluminum	Aluminum	Aluminum
Antenna type	Horn	Horn	Horn
Antenna material	SUS 304/ 316 PTFE Coating	SUS 304/ 316 PTFE Coating	SUS 304/ 316 PTFE Coating
Sampling rate	1sec.	1sec.	1sec.
Blind distance	0.5	0.5	0.5

In general, reservoirs are with the functions of storage of water resources, additionally providing water and power generation for public life. As in typhoon season and flood, reservoirs can also adjust the flow and cease the moving of flood, indirectly provide a function for preventing flood occurred. The monitoring of the water level also includes a rainfall collect and list of the water level which provides the important information for flood prevention and adjustment for the amount of water in reservoirs. (FineTek) provides non contact radar level transmitters and ultrasonic level transmitters which are with easy installation, stable and reliable, greatly enhance the installation mobility and simplicity.

Pump stations play a key role for preventing flooding, regulating the liquid level inside and outside of the riverbank as in every typhoon and rainstorm season. Liquid level detection inside and outside of floodgate depends on reliable liquid level sensors to provide the correct measurement data analysis, take the necessary action at the right time to ensure the safety of lives and property of residents.



ED Speed monitor

OPERATING PRINCIPLE

ED4000 speed monitor is a totally new rotational speed monitoring equipment; it uses the principle of photoelectric detector and microprocessor to accurately calculate a wide range of rotational speed. It detects range 1 ~ 999rpm and the rotational speed display in the seven-segment LED. In monitoring process can provide a set of control contact as the use of an alarm or control. The alarm set point could be directly set by numerical knobs which is more convenient and accurate than conventional models. 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 situation.

APPLICATIONS

- Monitoring range 1 ~ 999rpm. Seven-segment LED display 0 ~ 999rpm.
- Alarm monitoring functions: low-speed, stop, power failure, overload.
- The boot delay monitoring function.
- The photoelectric switches for speed monitoring, free on-site environmental impact.
- Can be worked with FineTek's digital display panel meters for speed indication.

SPECIFICATIONS

Dimensions Figures (mm)	
Rotation speed measuring range	0~999 rpm
Monitoring set point	1~999 rpm
Alarm condition	Speed is too low, stop or power outage
Boot delay time	3 to 30 seconds, can be switched, the smallest change in the amount of 3 seconds
Contact capacity	5A/250Vac
Analog Output	4~20mA(0~100 /0~200 / 0~500 0~1000 rpm switchable)
Power supply	85~265Vac
Power consumption	6VA.
Operating temperature	-20°C~70°C
Shell material	Aluminum paint
Enclosure protection class	IP-65
Conduits	1/2" NPT X 2

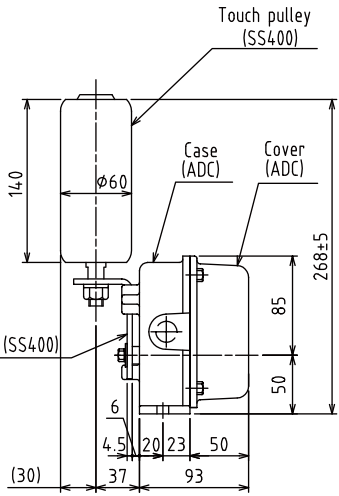



SRT Misalignment switch

OPERATING PRINCIPLE

SRT misalignment switch is the new design for safety control equipment, for detecting conveyor belt distortions occurred during the operation and equipment failure due to overload or misaligned from the centerline. Effectively prevented the conveyor belt misaligned and materials scattered and overload damage to machinery and casualties happened. When the conveyor belt operated and with overload, distortions and misalignments happened, the conveyor belts will squeeze rotating arm, driving the precision cam and touch the microswitch to send out the alarm signal. The alarm signal will be sent as the position of the rotary arm swing more than 20 degree , the downtime signal will be sent as the degree more than 35 degree.

SPECIFICATIONS

Dimensions Figures (mm)		
		
Switching Capacity	10A, 125/250 Vac 1/2A 125 Vdc SPDTx2	
Action Force	3.4~5.4N.m (0.35~0.55kgf.m)	
Reset Way	Auto	
Ambient Temp.	-20~60°C	
Enclosure Protection Grade	IP67	
Enclosure Material	Die cast ADC	
Weight	Approx. 2.9kg	

FEATURES

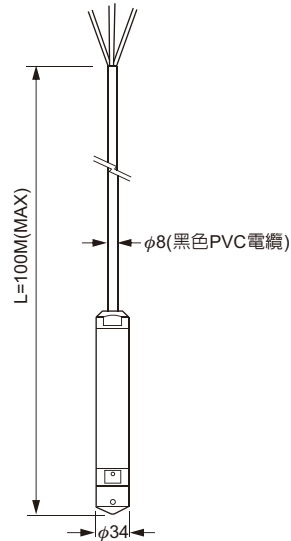
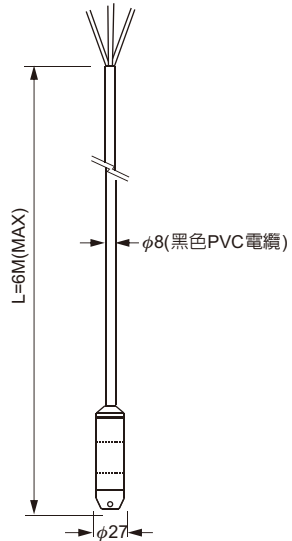
- Easy Installation, operation sensitive
- Roller arm can move up to 75 degrees in either direction
- Dust tight, IP 67 weatherproof, Die cast aluminum housing
- Roller lever actuating angle 20° for alarm signal and 35° for shutting down system
- To save process downtime, product loss and replacing cost of damaged conveyor belt

EC Pressure transmitters

OPERATING PRINCIPLE

The pressure transmitter is constituted by a piezoelectric Wheatstone bridge. Pressure exerted on the diaphragm and passed through the silicon oil and to the Wheatstone bridge. The voltage across two side of Wheatstone bridge becomes imbalanced and this imbalanced signal via the amplifier and then transferred into 4 ~ 20mA signal, this signal is connected with 4 ~ 20mA indicator to show the actual liquid level. By the formula  $P = \theta \times H$ , When  $\theta$  (pressure constant ) and P are known, the  $P \div \theta$  is equal to the actual measured level H. The value of  $\theta$  can be known that every 1M of water height can occur 0.1kg/cm2 pressure.

SPECIFICATIONS

Dimensions Figures (mm)		
		
Model	EC1320 Extension Cable Model	EC2500 Extension Cable Model
Pressure range	0.1,0.2,0.5,1,2,5,10 bar	0.25, 0.4, 0.6 bar
Measuring range	0.1,0.2,0.5,1,2,5,10 bar 0~20M,0~50M,0~100M (assumed with the water S.G:1)	0~2.5M,0~4M,0~6M, (assumed with the water S.G:1)
Linearity	0.3%FS	0.3%FS
Long term stability	<0.1%	<0.1%
Operating temp	-10~80°C	-10~80°C
Ambient temp	N. A.	N. A.
Supply voltage	13~36Vdc	10~30 Vdc
Output	4~20mA,Loop resistance should be less than 500 Ω	
Wetted material	SUS 304/316/PVC cable	SUS 316/PVC cable
Weight	approx. 0.8kg (L=1M)	approx. 0.8kg (L=1M)