OpreX™ Field Instruments

Wireless vibration sensor FN510 (ACAI type)

Field Wireless Multi-Function Module

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Operator rounds to continuous observation





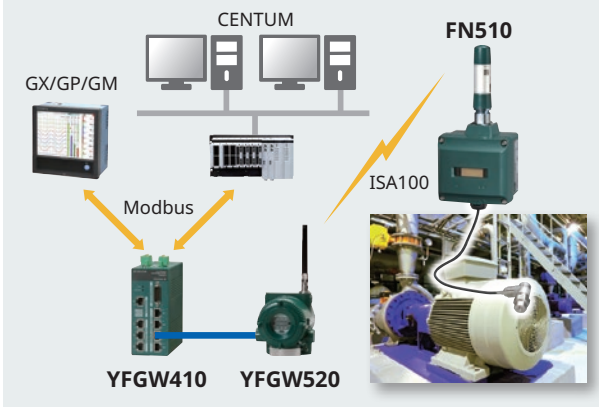
Early abnormality detection, and fault prediction of compressor, pump and other rotating equipment

Features

- Minimum 10 sec. update period, monitors vibration and its trend of rotating equipment.
- Battery powered, for continuous and temporary measurements.
- Compatible with ISA100 (IEC62734) wireless infrastructure.

ISA100 WIRELESS

System configuration

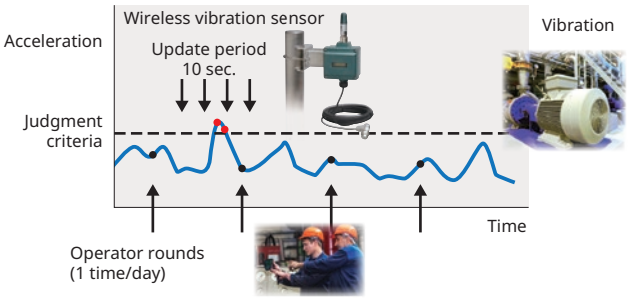


Typical specifications

Number of input channels	1
Sensing mode	Acceleration, Velocity, Velocity LPF 160 Hz
Measurement data	Peak, RMS, Peak/RMS
Frequency range	10 Hz to 10 KHz
Measurement range	Acceleration: 0 to 300 m/s^2 Velocity: 0 to 160 mm/s
Update period	10 sec. to 3600 sec.
Battery life	2 years (update period 10 sec.) 10 years (update period 60 sec.)
Explosion protect type	Intrinsically safe device: FM (US and Canada) IECEx and ATEX

Benefits of introduction

- Enables continuous observation, that complements operator rounds.
  Operator rounds: 1 day to 1 week period
  Wireless monitoring: 10 sec. period
- Reduces patrols in hazardous area.
- Monitors equipment condition under high load.
- Uploads measurement data directly to host system.



Application examples

DCS (CENTUM), Recorder (GX/GP/GM), PC running Modbus client application can be host system.

- Trend monitoring
  Observes transition of vibration condition.
  Predicts maintenance timing.



(Judgment criteria on the figure is for reference only)

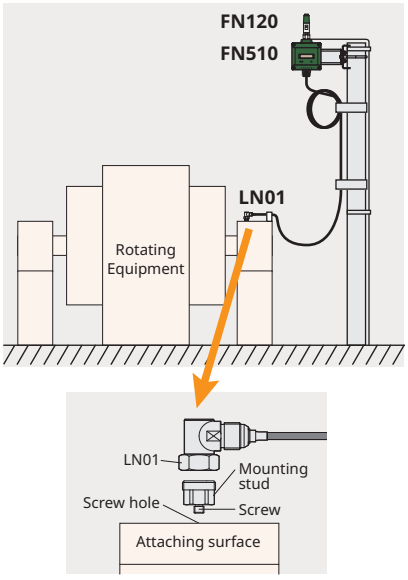
- Absolute judgment
  Compares measured value with judgment criteria on the host system to detect abnormality.

Velocity RMS (mm/s)	Typically Electric motor up to 15 kW	Typically Electric motor 15 kW to 75 kW	Large machine mounted on a rigid base	Large machine mounted on a soft base
45				
33	Danger	Danger	Danger	Danger
28				
18				Alert
11.2			Alert	
7.1		Alert		
4.5	Alert			Good
2.8			Good	
1.8		Good		
1.12	Good			
0.71				
0.45				
0.28				

Velocity measurement range for frequency of 10 Hz to 1 kHz
Created with reference to ISO 10816-1: 1995

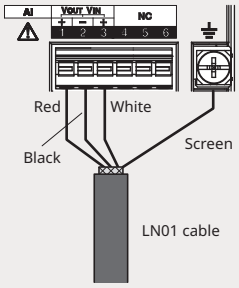
Installation and wireling

- LN01 is screwed to the target object with the mounting stud.
- Install the FN120 at least 1.5 m above the ground or floor.
- Confirm that each field wireless equipment can see the antenna of other devices which locate within its own communication range.

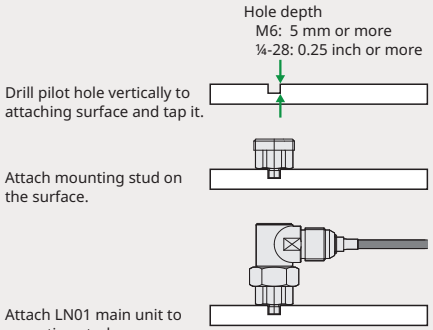


Wiring

Connect LN01 integral cable to FN510 terminals



Installation step



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