

WISE-750

Intelligent Vibration Gateway



Features

- Configurable between machine learning algorithm and rule-based condition monitoring for PHM application
- Data logger through Ethernet
- 4x Simultaneous Analog Inputs @ 200kS/s sampling rate
- Vibration sensor included
- Multiple selection of trigger type and sampling type
- LEDs for status indication
- 2x Ethernet port for daisy chain
- Alarm generation through digital output and Ethernet
- Low power consumption

Introduction

The WISE-750 is a direct solution, straight forward to the PHM for rotational machinery, i.e. motor actuated machinery such as machine tools, pumps and elevators . . . etc. It measures the vibration through the accelerometer PCL-M10 packed along with the WISE-750. After the measurement, it processes and gets the result then, telling the machine healthiness. The information can be sent through either Ethernet or the digital alarm signal. Combining DAQ, data processing, vibration sensor and Ethernet connectivity, the WISE-750 is ready for PHM application and serve the 7/24/365 healthiness monitoring work.

Specifications

Analog Input

▪ Channels	4-ch single ended, simultaneous sampling
▪ Resolution	16 bits
▪ Sample Rate	200kS/s max.
▪ Trigger Reference	Digital and analog triggers
▪ Trigger Mode	Start, Stop
▪ Overvoltage Protection	30 Vp-p
▪ Input Impedance	1 MΩ / 5 pF
▪ Input Range	±10 V
▪ Accuracy	DC INLE: ± 2 LSB DNLE: ± 1 LSB Offset error: ± 2 LSB Gain Error (%FSR): 0.02 AC SNR: 84 dB ENOB: 13.5 bits

Isolated Digital Input

▪ Channels	4, act as digital trigger
▪ Input Voltage	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)
▪ Isolation Protection	2,500 V DC
▪ Opto-Isolator Response	100 μs
▪ Input Resistance	3.2KΩ @1W

Isolated Digital Output

▪ Channels	4, act as alarm
▪ Output Type	Sink (NPN)
▪ Output Voltage	5 ~ 40V _{DC}
▪ Sink Current	500mA max./channel
▪ Isolation Protection	2,500 V DC
▪ Opto-Isolator Response	100 μs

Communication

▪ Configuration	Udp commands via utility
▪ Raw data	Udp via utility
▪ Feature Values	Modbus/TCP accessible

Operation

▪ Rule-based Mode	User defined criteria for MAX, MIN, Peak, Peak to Peak, RMS, Mean
▪ Intelligent Mode	Built-in machine learning algorithm base on frequency domain result
▪ Datalogger Mode	Saving raw data and feature data to CSV files

General

▪ Dimensions (W x H x D)	40 x 133 x 98mm (1.57" x 5.24" x 3.86")
▪ Power Consumption	Typical: 24V @ 70mA/Max.: 24V @ 130mA (without sensors connected) Each PCL-M10 connected: +24V @ 30mA
▪ Power Inputs	10 ~ 30 V _{DC}
▪ Weight	470g

System Hardware

▪ MCU	Renesas RZ/T1 ARM® Cortex®-R4 Processor with FPU core. Renesas e-AI is embedded.
▪ Indicators	LEDs for Power, Error and LAN (Active, Status)
▪ LAN	2 (1 MAC only for daisy-chain)

Environment

▪ Storage Humidity	5 ~ 95% RH, non-condensing
▪ Operating Temperature	0 ~ 60 °C (32 ~140 °F) @ 5 ~ 85% RH with 0.7m/s air flow
▪ Storage Temperature	-20 ~ 80 °C (-4 ~ 176 °F)

Ordering Information

▪ WISE-750-02A1E	WISE-750 with 2x PCL-M10 Package
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Optional Accessories

▪ PCL-M10-3E	Industrial Accelerometer, 80mV/g, 3m
▪ PSD-A40W12	DIN Rail AC to DC 100-240V 40W 12V
▪ PSD-A40W24	DIN Rail AC to DC 100-240V 40W 24V