Intelligence connects the future!

PowerMon200
Intelligent Data Acquisition Unit

Datasheet

July 30, 2024
CN Rev.v1.0.1

Product Overview

The Intelligent Data Acquisition Unit (abbreviated as IAU) is a key component of the Intelliunion Cloud system solution. Together with the IAU intelligent monitoring, analysis and diagnosis software, it constitutes a drive train vibration condition monitoring system. During continuous operation of large units, the IAU performs online monitoring and provides various parameters including vibration, operating speed, process variables and other indicators. The IAU can continuously acquire, process and store all kinds of data for monitoring and diagnosis.

Main Features

- **Intelligent monitoring:** Compatible with acceleration, velocity, displacement sensors, and process signals such as voltage and current.
- **Intelligent protection:** Provides signal isolation and protection for differential input channels.
- **Intelligent algorithms:** Provides advanced feature extraction algorithms, such as envelope analysis, frequency band energy capture, kurtosis, zero-phase technology, etc.

- **Intelligent self-test:** Automatically detects the status of data acquisition station hardware circuits, sensors, cables, networks, etc., and effectively distinguishes between signal faults and system faults.
- **Intelligent browsing:** Based on HTML5 technology (B/S architecture), no client software installation required, enabling quick browsing anytime and anywhere via any terminal.
- **Complete solution for powerful remote monitoring and diagnosis.**

Technical Parameters

Model	PowerMon200	
No.	Intelliunion	Product No. PowerMon200 intelligent data acquisition unit ISys-100 intelligent monitoring, analysis & diagnosis system
Basic Parameters	Installation method	19-inch rack-mounted, 2U
	Dimensions	89mm×440mm×483mm
	IP grade	IP50
	Operating voltage	100VAC-240VAC, 50/60Hz
	Power consumption	<30W
Signal Analysis	Max sampling frequency	102.4KHz
	Max analysis frequency	40KHz
	Max spectral lines	6400
Communication Interface	TCP/IP	1 100M/1000M Ethernet port
	RS485	1 × isolated RS485 channel
	CAN	2 × RS232 channels
Data Transmission	Upload to server	Millisecond-level
	Bandwidth usage (per unit)	2KB/S (factory default)

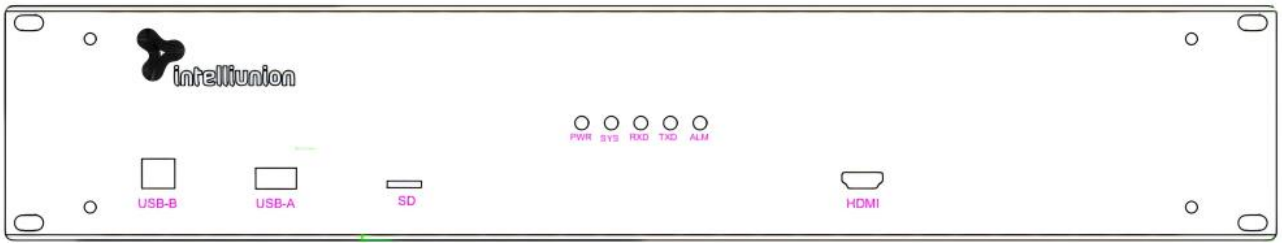
	Hardware storage space	500 MB, offline storage for approximately 6 months (factory default)
Vibration Input Channels	Number of channels	48
	Signal type	Vibration (acceleration, velocity, displacement)
	A/D conversion	Delta-Sigma, 24-bit full parallel acquisition
	Signal input range	±25V
	Input impedance	>100KΩ
	Measurement error	<±0.5%
	Channel crosstalk	100dB
Key Phase Input Channels	Number of channels	8
	Max frequency range	10KHz
	Input range	±20VAC
	Input impedance	>100KΩ
	Trigger level	0–24V adjustable
	Frequency accuracy	0.1%
	Speed range	0-600k RPM
Process Input Channels	Number of channels	24
	Signal type	4-20mA / 1-5V
	Measurement accuracy	0.1%
Intelligent Storage	Fixed interval storage	Configurable interval and operating condition storage
	Alarm triggered storage	Data storage on alarm
LED Indication	Power indicator	1 pc
	Alarm indicator	1 pc
	Communication indicator	2 pcs

	System indicator	1 pc
Analysis Diagrams	Overall diagram	Bar chart
	Multi-spectrum diagram	Waveform spectrum diagram
	Spectrum diagram	Full spectrum diagram
	Axis trajectory diagram	Axis position diagram
	Multi-axis trajectory diagram	Holospectrum
	Trend chart	3D holospectrum
	Polar diagram	Key-phase waveform chart
	Spectrum waterfall chart	Cascade plot
	Nyquist plot	Baud plot
	Dynamic balance	Characteristic value list
Environmental Test	Temperature range	-20-60°C
	Relative humidity	10~95%, no condensation
	Vibration test	1.5mm (5-28Hz)， 5g (28-150Hz), three directions
	Impact test	10g for 10 ms, 3 directions
	Atmospheric pressure	70kPa (≤3000m)
	Drop test	100 mm bottom drop without package
Product Certification	CE certification	Passed
	Electromagnetic compatibility test	Passed
	Surge immunity	Passed

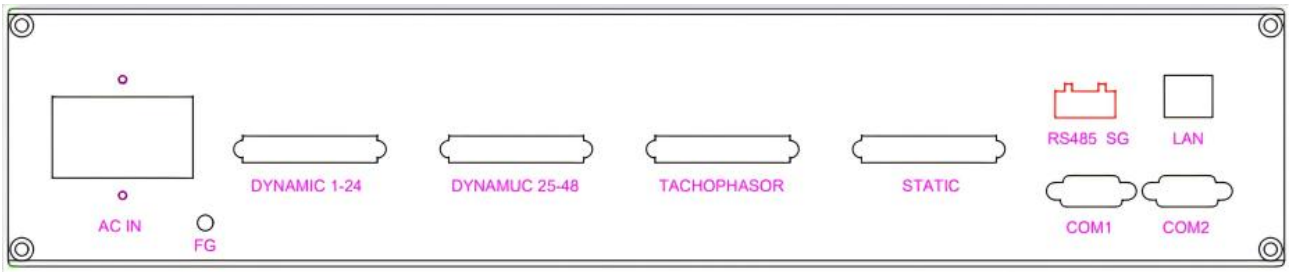
Product Drawing

Physical drawing:

Interface & indicators:



(Front)



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Indicator definition:

Indicator Label	Name	Status
PWR	Power indicator	Green ON: Powered; OFF: No power
SYS	System running indicator	Green ON: Normal; blinking: Fault
ALM	Alarm indicator	Red ON: Fault; OFF: Normal
RXD	Data receiving indicator	Green Blinking: Receiving; OFF: No data
TXD	Data transmission indicator	Green Blinking: Transmitting; OFF: No data

Terminal board selection:

Model	Purpose
VIB-TB-210	Vibration terminal board 1.0, positive polarity
VIB-TB-211	Vibration terminal board 1.1, negative polarity
KEY-TB-210	Key-phase terminal board 1.0, positive polarity
KEY-TB-211	Key-phase terminal board 1.1, negative polarity
STATIC-TB-210	Process variable terminal board
VIB-SPB-210	Vibration signal processing board
IOpt-S100	BNC terminal board for secondary meter signal input & debugging