A&F VTS Mechanical Neuron Sensor

A&F VTS is an integrated sensor with a 32-bit built-in cell processor, and can measure such parameters as acceleration, angular velocity, vibration, levelness and inclination. It is very suitable for the adjustment, monitoring and state prediction of precision mechanical equipment, actuators, machines, equipment and structures.

Neuron

VTS is lightweight, small, low-noise, portable, power-saving, plug and play, and can measure vibration levels up to VC-C. The support software with diversified functions enables VTS to be flexibly applied in various fields such as precision machinery, automotive, aviation, structural and civil engineering, and biomedicine, and assist in monitoring the performance and stability of different systems and structures. It is the best tool for monitoring, analysis, and optimization of machines, equipment, structures, and key components.

Product specification (VTS-B)	
Sensor	3-axis accelerometer + 3-axis gyroscope
Bandwidth	250 Hz
Accelerometer	Measurement range: ±2g; resolution: 0.061 mg/LSB noise: 90 μg/√Hz
Gyroscope	Measurement range: ±250 dps; resolution: 0.01 dps/LSB noise: 10 mdps/√Hz
Measurement accuracy of θx and θy angles	±0.05 °[Note 1]

Note 1: It needs to be equipped with CHIUAN YAN release software.

Product Features

6-axis vibration measurement
Realize synchronous and real-time measurement of the accelerometer and the gyroscope.

High-precision and high-accuracy quantity measurement
With built-in ambient temperature compensation function, it can also maintain low noise during long-distance transmission.

Integrated circuit, low power consumption
Equipped with Cortex-M4 processor, the integrated circuit provides stable data transmission not requiring additional data extractors.

Convenient transmission mode
Provide USB 2.0, BLE 5.0, and network connection [Note 1], and quickly realize Industry 4.0 layout.

Diversification of software selection
Provide a variety of application software for customers to choose. Users can quickly develop personalized application software through VTSAPI.

Plug and play
It can be used in such operating systems as Windows8, Windows10, Windows11, and Linux without the need to install additional drivers.

System Introduction

The A&F Vida-Rotest-mechanical operation smoothness detection system is based on the A&F VTS neuron ® sensor and is used for rapid inspection of the dynamic characteristics of the machine, equipment, and electric drive modules/mechanisms during operation (according to ISO20816). Through three simple steps, it can quickly generate inspection reports, so that you can easily and quickly grasp the machine condition, make accurate decisions, and use it for product consistency inspection, grading, and classification. It is an indispensable partner in design, assembly, warranty, product quality control, and so on.

① Install VTS　② Perform test　③ Generate reports

Complete test through three simple steps

System Features

◆ Easy to operate and quick to come online
◆ Automatic data analysis, use of multiple analysis tools
◆ Can switch the display of three frequency spectrums of speed, acceleration, and displacement
◆ Data extraction and establishment of test reports
◆ Automatic generation of test report numbers, easy to manage

Test Report

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- Kaifull Technology -
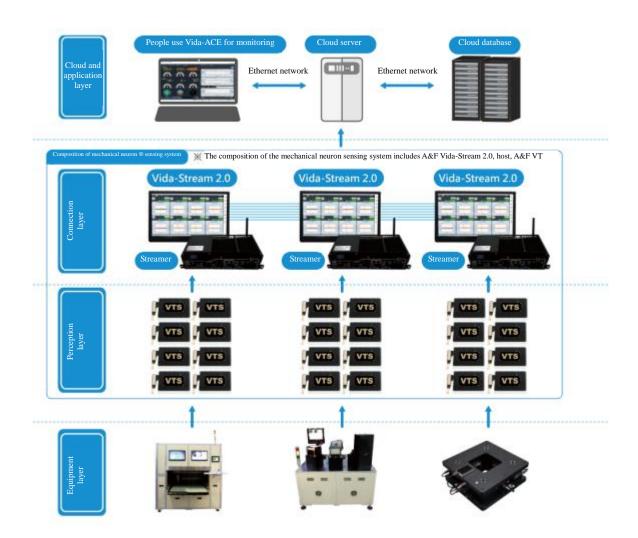
Mechanical Operation Smoothness Detection System

Kaifull A&F Vida-Rotest

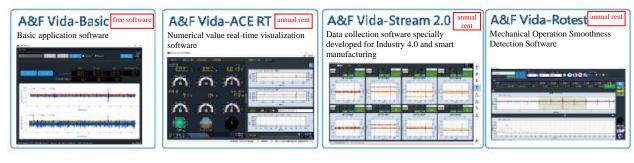Provide world-leading motion control solutions

Quickly establish a machine networking structure to achieve smart manufacturing and Industry 4.0

Integrating the application program Vida-Stream 2.0 developed by Kaifull Technology with a data streamer, one streamer can achieve up to 8 sets of A&F VTS machine networking architecture and upload data to the cloud database through Ethernet. It can help the industry quickly achieve the real-time status monitoring of mechanical equipment and build big data databases. The collected big data can be used by industry leaders to conduct backend data analysis, grasp the operational health status of machines and equipment, and complete predictive maintenance. Equipped with the Vida-ACERT developed by CHIUAN Technology Co., Ltd., it makes it easy for users to implement remote connection with Vida-Stream2.0, and enable them to monitor the operation status of the machine anytime and anywhere.
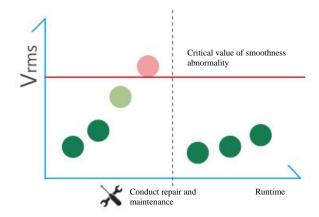
A&F release software introduction

Application Examples

Through the changes in the operation smoothness of machines and equipment (according to ISO 20816 specifications), it can serve the purpose of predictive maintenance, and can also be used for product quality inspection or grading and classification.
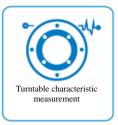

Product Application

| Monitoring of equipment and machine vibration changes | Servo adjustment of equipment and machine motors | Fourth and fifth-axis characteristic measurement | Audio measurement of speakers and musical instruments |

| Vibration test of mechanical equipment and transmission elements | Turntable characteristic measurement | Vibration measurement of status of unmanned aerial vehicles, and automatic guided vehicles/rail vehicles during movement | Integrating big data and AI technology to develop smart machines | Semiconductor equipment measurement |

Semiconductor packaging	Lithography equipment	Laser processing	Wafer detection	AOI detection	Electronic element assembly
Precision dispensing	Life medicine	PCB drilling	Textile	Digital printing	Intelligent sorting
Luggage transport	High-speed bonding equipment	Food processing	Coordinate measuring machine	Precision grinding	Wire cutting
Ultra-high speed cutting	……				

01 Linear Motor

| KE series | PMQ series | KUM series | Cross module series |

Product advantages

High accuracy

The linear motor can achieve direct transmission, eliminate various accumulated accuracy errors caused by intermediate links, and also avoid the shortcomings of traditional transmission such as reverse clearance, inertia, friction, and insufficient rigidity, achieving higher precision transmission.

Multiple rotors, synchronous/asynchronous

The stroke of a linear motor can be achieved through the splicing of the stator to achieve infinite stroke transmission, and multiple rotors can also be configured on the same stator to achieve independent motion control at the same axis direction.

Safe, reliable, long lifetime

The linear motor can achieve contactless transmission. Thanks to its almost zero mechanical friction loss and few faults, it has good safety, high reliability and has a long service life, with little maintenance.

Good dynamic characteristics

The frameless part of the linear motor is a non-contact component with no mechanical transmission limitations. It can achieve high-precision motion control from low speed to high speed in different ranges, with high dynamic response, strong real-time performance, and extremely high acceleration (up to 20g).

02 Alignment Platform

XXY G series	XXY series	XYR series	XXYE series

Product advantages

Module structuring

On the four-end planes between the base and the workbench, the XY-direction sliding tables are installed, and the special cross thick column box has module characteristics, implementing the function of XYθ structure.

High rigidity, high precision

The sliding table that constitutes the module uses cross roller guide rails, which achieve high precision and high rigidity after applying pre-pressing.

Ultra-thin, hollow structure

Support hollow, light and thin structures, and can be used as a visual or light source testing device. Easy to install, safe, highly reliably, long service life, requiring very little exception maintenance.

Complete sizes

100mm-1000mm, more suitable for higher accuracy and heavier loads.

03 Precision Fine-tuning Stage

| Linear type | Horizontal lifting type | Rotating type | Swing type |

Product advantages

Small size and compact structure
Small size and compact structure (the workbench can be small as 40*40, even smaller).

Flexible matching mode
Flexible matching mode (can flexibly configure 3-axis, 4-axis, 5-axis to achieve multidimensional motion control).

Support fully closed-loop control
Support full-closed loop control (used together with the grating ruler or encoder to achieve step full-closed loop control).

High positioning accuracy
High positioning accuracy (high-grade ball screw, with a maximum repeated positioning accuracy of ±0.3μm).