

# Machinery Protection System V6000



- V6000 system is a total solution for the vibration measurement and continuous on-line protection with condition monitoring (optional) of medium to large sized critical plant machinery

### Configurations available:

#### I) Vibration Protection System

Easy setup with V6000 configuration tool for performing protection monitoring of one or several machines.

Measured values are shown on the local indicators and also transmitted to PLC/ DCS/ HMI with Modbus RS485 or 4-20 mA output.

#### II) Protection & Conditional Monitoring

Connecting to condition monitoring and diagnostic software easily whatever. With V6000 there are no external modules, no additional wiring and no extra rack slots required. Simply use the Ethernet port in the V6000-G Rack Interface Module and a single network cable to communicate with our Vibsens-PRO software

### Description of various V6000 cards:

#### V6000-G Communication Gateway (Optional):

The V6000 System monitor supports Modbus® protocol via serial (RS232/485) for digital communications with PLCs, DCSs and other instrument and automation platforms. Key lockable to prevent unauthorized tampering.

#### V6000-V Vibration Signals(required):

Four vibration inputs can be connected to Accelerometer, Velocity Sensor, Proximity Probes or Analog Signals (mA or VDC)

#### V6000-M 19" System Rack (required):

Aluminum Alloy - 426\*277\*259 mm All input and output terminals are available on the back plane with push-in type connectors.

#### V6000-RPS Power Supply (required):

Accepts worldwide ac/dc voltages and frequencies and can be supplied redundant to assure uninterrupted the process

#### Trip Multiply Factor

Includes relay bypass and trip multiply configurable per channel

#### V6000-K Keyphasor® (Optional):

This card can process up to two tachometers for phase & speed measurements with 8 configurable dry relay outputs.

#### Buffered Outputs

Every dynamic input signal is available on the front panel via BNC connectors for easy connection to portable data loggers / test instruments.

#### V6000-K V6000-DIAG (Optional):

Ethernet interface with Vibsens-PRO condition monitoring software via TCP/IP protocols

#### Local Monitor & key pad

Each monitor features a high visibility digital LED display. The displays show current values, set points and alarm status etc. In addition, operator can configure all settings for each input.

#### Analog Communications

All monitor module channels are available with analog 4-20 mA proportional outputs for compatibility with recorders, process control systems and other instrumentation.

#### V6000-M Multifunction Monitor (Optional):

This card can accept up to 8 4-20 mA process inputs and it has 8 configurable dry relays.



Compressor



Cooling Tower



Fan



Gear Box



Generator



Electromotor



Pump



Turbine



Wind Turbine



Hydro Turbine

# Technical specifications of V6000 Machine Protection System

Characteristics	V6000	
<b>Analogue inputs</b>	IEPE / voltage mode accelerometer Proximity probe Velocity Sensors KeyPhasor®/ Tachometer Any type of voltage or current output transducers	
<b>Input channel:</b>	4 up to 28 vibration channels, 2 keyphasor channels and up to 8 multifunction channels (4-20mA)	
<b>Signal Conditioner:</b>	Amplifier/integrator to obtain velocity or displacement response by integration	
<b>Analog Outputs:</b>	Four 4-20mA outputs per card	
<b>Logical outputs</b>	8 (4 Alerts, 4 Danger) per card , 1 malfunction	
<b>Relay Specification:</b>	Form C, SPDT, 1 Amp 110 VAC, Latching or Non-Latching Selectable Normally Energized or Normally De-Energized (User Defined) Bypass Relay or Active Relay Selectable	
<b>Alarm Time Delay:</b>	1 to 60 Seconds (User Defined)	
<b>Reset Function:</b>	Push Button /Terminal for Remote Reset if Latching Alarms Selected	
<b>Trip Multiply Function:</b>	Terminal for None , variable 10 to 90% Alarm Trip multiply	
<b>Communication with HMI</b>	3 redundant Serial port RS-232/RS-485 Modbus RTU Protocol	<b>HMI Software:</b> Any standard HMI Software Like Wincc
<b>Communication with CMS</b>	Ethernet (10/100 base T) Vibsens Protocol	<b>CMS Software:</b> VibSenS-CMS
<b>Environment</b>	Protection: IP 55 Temperature range: -20°C, +60°C0 Humidity: 95% max without condensation	
<b>Detection mode</b>	RMS, True Peak, True Pk-Pk	
<b>Alarm Indication:</b>	OK = Green LED, Alert = Yellow LED, Danger = Red LED	
<b>Local indicators:</b>	Up to 20 parameters and adjusting configuration With 7Segment Front of Cards	
<b>Accuracy:</b>	1% Full Scale	
<b>Dynamic Range:</b>	65dB	
<b>Phase Linearity:</b>	(0.1 Hz to 10 kHz ) ±1 deg	
<b>Resolution:</b>	12 bit	
<b>Sample rate</b>	Up to 4 KHz synchronous sampling	
<b>Frequency Response:</b>	Acceleration and Velocity and Displacement: 2 to 10,000 Hz (In Factory Defined) Thrust / Position :DC	
<b>Buffered Outputs:</b>	2 type Buffered Outputs :With sensor offset / without DC	

