

# DDAU III

## Diagnostic Data Acquisition Unit - Type 2550

# Technical Datasheet



### Designed for the future

DDAU3 is a flexible, state-of-the-art machine condition monitoring unit. With powerful built-in analysis capabilities, DDAU3 is able to perform today's most demanding condition monitoring and diagnostic tasks and yet still provide a platform for customization and development for future monitoring requirements.

### Created to be unique

- **I-trigger data storage** – Unique data capture function for storing only relevant changes
- **Flight recorder** – Save data even if the network is down
- **Stand-alone operation** - Portable DDAU3 solution
- **High data sampling** – DDAU3 is designed with extra processing power
- **High connectivity** – PI data historian, Microsoft® Azure enabled, MODBUS, OPC UA
- **IIoT cloud networking** – True edge device
- Narrow Band Filter (NB)
- Bearing Condition Unit (BCU)
- Envelope Condition Unit (ECU)
- Narrowband Envelope Condition Unit (NBECU)
- DC
- Process
- Arithmetic calculations
- Statistics
- Feature Extraction
- Envelope Time Waveform Array
- Autospectrum, Order Spectrum
- Envelope Spectrum, Selective Envelope Detection, Envelope Order Spectrum
- Cepstrum, order cepstrum
- Time waveform

### Condition monitoring methods

- Digital input
- Bandpass (BP - Tracking, Fixed)

# Specifications Summary

Electrical	
Voltage	18-26 V DC
Power Consumption	10W
Fuses	Over-voltage and fire protection

Input	
<b>Dynamic Input (12 AC/DC Input Channels)</b>	
Sensor Types	CCS (IEPE) accelerometers, displacement sensors, MEMS based sensors, microphones, etc.
Sampling Frequency	204.8 kHz
Analysis Freq. Range	0Hz (DC) - 80kHz
Input Type	Differential, bipolar (-25.5V to +25.5V)
Dynamic Range	> 100dB at 1kHz, > 94dB at 0.1kHz
Channel Interference	> -100dB
AC Amplitude Accuracy	±0.5dB
DC Amplitude Accuracy	1% of full scale with ±40mV Offset
Total Harmonic Dist.	< 0.01%/250Hz/4Vpp
Input Impedance	>100kΩ
Common Mode Rejection	>50dB at 50Hz
Phase Error	<0.3° at 80kHz (between channels)
Sensor Power Supply	+24V, 10mA per sensor for CCS (IEPE)
<b>Speed Input/highly accurate DC (4 Input Channels)</b>	
Input Range	0-150,000 RPM
Speed Accuracy	500RPM < 0.04RPM, 1500RPM < 0.1RPM
Sampling Frequency	8kHz
DC Error	< ±5mV
Dynamic Range	> 100dB
<b>Analog Input (8 Analog 4-20mA Inputs)</b>	
Sampling Rate	4kHz
Bandwidth	20Hz
Offset Current Drift	< 6.5µV/°C
NAMUR Compatible	Yes
Current input	Active or passive
<b>Digital Inputs (4 Input Channels)</b>	
Digital Input (IEC 946)	Input high: 13-33V, Input low: -3 – 5V
Input Logic	1001, 1002, 2002, 1003, 2003, 3003, 1004, 2004, 3004, 4004

Connectivity	
Network Connection	3x RJ45 Connectors (up to 3 networks, switched), 1x Optical SFP connector
Serial Connection	RS485 (MODBUS RTU interface)
OPC	UA Client, UA Server
IoT Hub Interface	Microsoft® Azure IoT Edge runtime module for direct interface to Microsoft® Azure IoT Hub using MQTT protocol.
Modbus	TCP/IP Client/Server, RTU Master/Slave

Compliance	
Vibration	IEC 60068-2-6
Rough Handling (Storage)	IEC 60068-2-31
EMC	IEC 61326-1, IEC 61000-6-2/3
Inclination	IEC 60092-504
Corrosion	ISO 9223 Class C3-medium
IP Rating	IEC 60529 IP20 (no cabinet), IP66 (with cabinet enclosure)
CE Marking	EMC and RoHS 2011/65/EC
UL Approval	IEC 61010-1

Environmental	
Ambient Temperature	- 40 °C to + 85 °C (storage) - 30 °C to + 60 °C (operation in cabinet) + 70 °C (operation with de-rated MTBF) - 40 °C (operation with reduced accuracy)

Physical	
Size	L: 280mm W: 153.5mm H: 35mm
Weight	1.5 kg
Mounting	DIN rail

