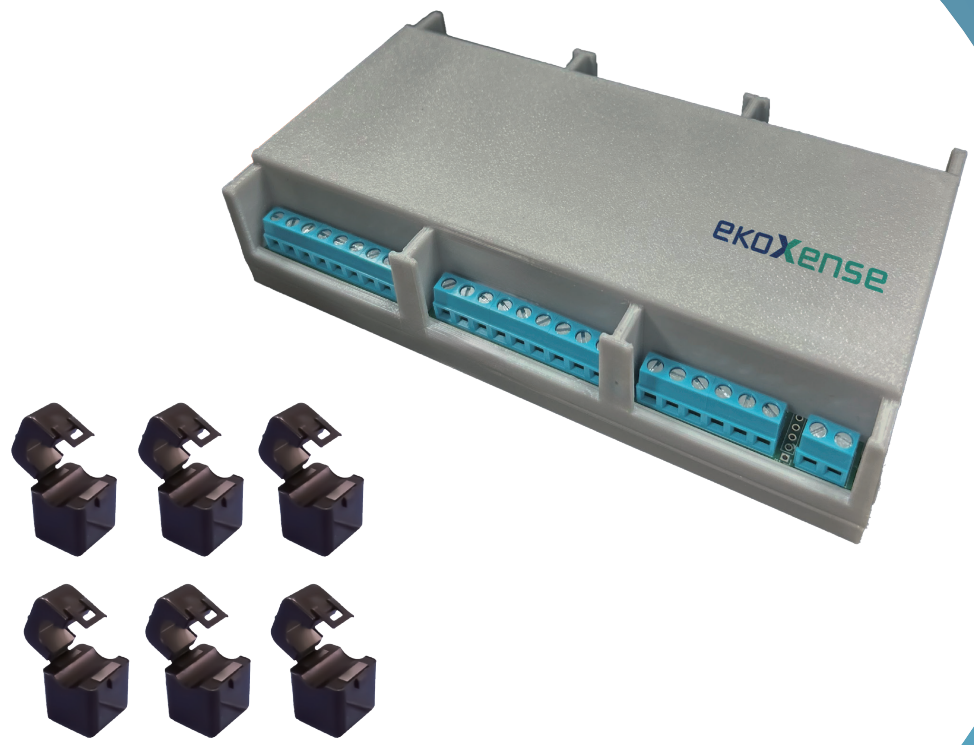
ekoXense

Edge AI Module

Specification Sheet



產品簡介 (Product Introduction)

PdM 是一款專為設備健康管理設計的電力監測感測器，透過高頻電流頻譜分析技術，提供精確的電力數據。本產品具備體積小、重量輕、安裝方便的優勢，能有效節省傳統電表 60% 以上的設置成本。它能監測多種電氣數值，並提供多重保護設計，是實現馬達等設備預知保養的理想選擇。

產品特色 (Key Features)

- **設備健康管理：**支援高頻電流頻譜分析，有助於精確評估設備運行狀態。
- **體積小、重量輕：**輕巧設計，方便安裝於各種工業環境。
- **緊湊輕巧設計：**體積小巧、重量輕，方便攜帶與安裝，特別適用於空間受限的環境。
- **高精確度：**功率精確度高於 99% (I、V、kW)，確保數據可靠性。
- **成本效益：**相較傳統電表，可節省 60% 以上的設置成本。
- **工業導軌安裝：**支援標準工業導軌安裝，施工方便快捷。
- **多參數監測：**可量測 kW、W、VA、V、A、PF、Hz、CF 等多種電氣數值。
- **即時通訊：** 採用 Web Socket 通訊協議，反應時間小於 1 秒，實現即時數據傳輸。
- **多重保護：**提供類比輸入 ESD 保護、極性保護、突波保護及過溫警報。
- **規格自由搭配：**可配合多種不同規格之 CT 使用，根據狀況搭配選擇。

功能說明 (Functional Description)

- **高頻電流頻譜分析：**深入分析電流波形，提供設備異常診斷依據。
- **即時數據傳輸：**透過 Ethernet 和 WebSocket 協議，實現快速、穩定的數據傳輸。
- **易於安裝與整合：**工業導軌安裝設計，方便快速部署，並易於與現有系統整合。
- **多重安全防護：**提供全面的電氣保護功能，確保設備和系統安全。

技術規格 (Technical Specifications)

通用規格 (GENERAL)	
模型名稱 (Model Name)	eK Power Meter
尺寸 (Dimensions)	160 x 90 x 58 mm
重量 (Weight)	270 g
操作溫度 (Op. Temp.)	-20°C 至 +65°C，R.H. < 90% (非凝結)
指示燈 (Indicators)	LED 指示燈號
電源供應 (Power Supply)	DC 9-24V / 250 mA，漣波 < 150 mV
感測方式 (Sensing Method)	扣環式
架設方式 (Installation)	導軌式

通訊規格 (COMMUNICATION)	
通訊介面 (Interface)	IEEE 802.3 Ethernet
頻寬 (Bandwidth)	100 Mbps
通訊協議 (Protocol)	Web Socket，反應時間 < 1 秒

技術規格 (Technical Specifications)

量測能力 (MEASUREMENT CAPABILITIES)	
電流範圍 (Current Range)	0.1A ~ 600A (標準)、600A ~ 3000A (特規)
電流解析頻率(Current Sampling Frequency)	7812.5Hz
頻率範圍 (Frequency Range)	50~60Hz
頻率解析度 (Freq. Resolution)	0.01Hz

保護設計 (PROTECTION DESIGN)	
類比輸入 ESD	1.5kV, 300V
其他保護 (Other Protection)	極性錯誤保護, 突波保護
頻率範圍 (Frequency Range)	50~60Hz
頻率解析度 (Freq. Resolution)	0.01Hz

Product Introduction

PdM is a power monitoring sensor specifically designed for equipment health management. By leveraging high-frequency current spectrum analysis technology, it delivers precise electrical data. The product features a compact size, lightweight design, and easy installation, achieving more than 60% savings in setup costs compared with traditional meters. It supports monitoring of multiple electrical parameters and incorporates comprehensive protection mechanisms, making it an ideal solution for predictive maintenance of motors and

Key Features

- **Equipment Health Management:** Supports high-frequency current spectrum analysis, enabling precise assessment of equipment operating conditions.
- **Compact and Lightweight:** Small size and lightweight design for easy installation in various industrial environments.
- **Slim Design for Limited Spaces:** Portable and space-efficient, particularly suitable for installations in constrained environments.
- **High Accuracy:** Power measurement accuracy exceeding 99% (I, V, kW), ensuring reliable data.
- **Cost Efficiency:** Reduces installation costs by more than 60% compared with traditional meters.
- **DIN-rail Installation:** Supports standard industrial DIN-rail mounting for fast and convenient setup.
- **Multi-parameter Monitoring:** Measures a wide range of parameters including kW, W, VA, V, A, PF, Hz, and CF.
- **Real-time Communication:** Utilizes WebSocket protocol with response time less than 1 second for real-time data transmission.
- **Comprehensive Protection:** Provides analog input ESD protection, polarity protection, surge protection, and over-temperature alarms.
- **Flexible CT Compatibility:** Supports a variety of CT specifications, allowing flexible selection based on application needs.

Functional Description

- **High-frequency Current Spectrum Analysis:** Enables in-depth waveform analysis to support equipment anomaly diagnostics.
- **Real-time Data Transmission:** Ensures fast and stable data transfer via Ethernet and WebSocket protocols.
- **Easy Installation and Integration:** Designed with industrial DIN-rail mounting for quick deployment and seamless integration with existing systems.
- **Comprehensive Safety Protection:** Provides full electrical protection features to ensure the safety of both devices and systems.

Technical Specifications

GENERAL	
Model Name	eK Power Meter
Dimensions	160 x 90 x 58 mm
Weight	270 g
Op. Temp.	-20°C to+65°C , R.H. < 90% (non-condensing)
Indicators	LED status indicators
Power Supply	DC 9–24 V / 250 mA, ripple < 150 mV
Sensing Method	Clamp Type
Installation	DIN-Rail Type

COMMUNICATION	
Interface	IEEE 802.3 Ethernet
Bandwidth	100 Mbps
Protocol	WebSocket, response time < 1 second

Technical Specifications

MEASUREMENT CAPABILITIES	
Current Range	0.1A ~ 600A (standard)、600A ~ 3000A (custom)
Current Resolution Frequency	7812.5Hz
Frequency Range	50~60Hz
Freq. Resolution	0.01Hz

PROTECTION DESIGN	
Analog Input ESD Protection	1.5kV, 300V
Other Protection	Reverse Polarity Protection, Surge Protection
Frequency Range	50~60Hz
Freq. Resolution	0.01Hz