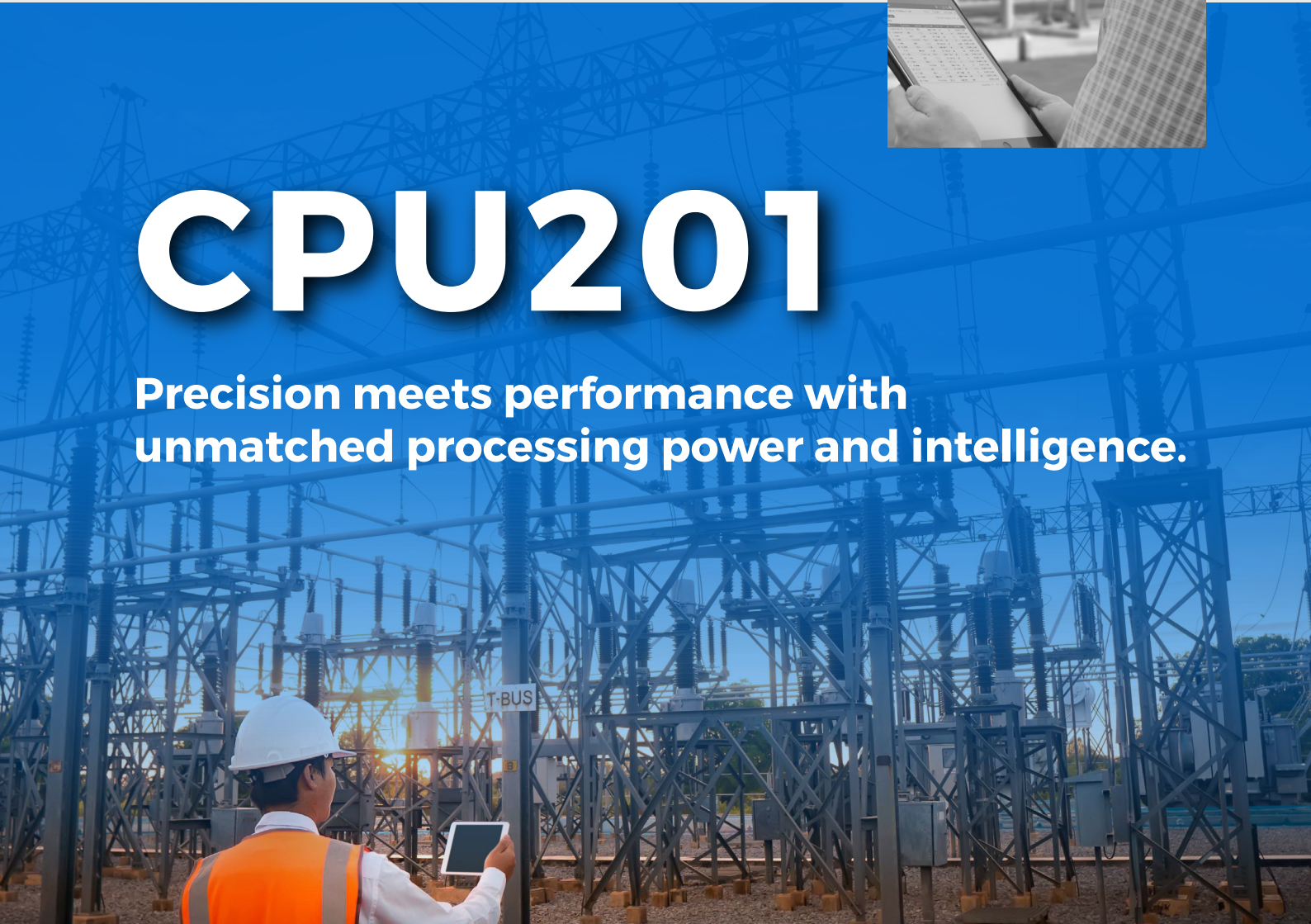# RUGGED
MONITORING

MONITORING SIMPLIFIED

CPU201

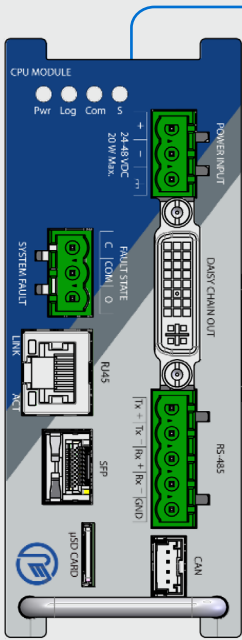## Precision meets performance with unmatched processing power and intelligence.

Where Intelligence Meets Reliability:
Introducing Our Smart CPU201 for Monitoring

CPU201

Precision meets performance with unmatched processing power and intelligence.

RM's CPU201 is a revolutionary addition to our advanced condition monitoring solutions, ensuring optimal performance and reliability of your critical assets the CPU201 takes condition monitoring to new heights. This cutting-edge module is equipped with a range of intelligent features, making it the ideal choice for precision monitoring and data-driven decision-making.

Working Principle:

System Fault Relay

The CPU201 comes with a System Fault relay, featuring a Form-A relay with two contacts. This relay is "hard wired" and automatically energizes or activates upon power-up, providing instant notifications of any system faults, ensuring timely actions to safeguard your assets.

MicroSD Memory Card Slot

With a built-in microSD memory card slot, the CPU201 allows for seamless instrument temperature logging. By simply inserting an SD card, you can log temperature data effortlessly, ensuring comprehensive monitoring and analysis of asset conditions.

Easy Data Retrieval

Retrieving the logged data from the microSD card is effortless. Easily access the SD card content by removing it from the instrument and connecting it to a PC computer using a USB adapter. This user-friendly process ensures convenient data analysis and archiving.

Webserver Data Transfer

For added flexibility, the CPU201 facilitates data transfer to a PC using the built-in webserver. While this method is suitable for smaller data files, we recommend using the microSD card for larger files to ensure efficient and faster data retrieval.

With the CPU201 Central Processing Unit, gain unparalleled control and insights into your electrical assets' condition. Stay ahead of potential issues, make informed decisions, and optimize maintenance strategies with this powerful and intuitive module. Invest in the CPU201 and unlock the true potential of your assets for a future of enhanced reliability and performance.

Features

- Instantaneous processing
- Comprehensive Data Analysis
- Precise Fault Detection and Diagnosis

- Alarm & Notification
- Historical Data Storage
- Seamless Communication & Integration

Applications

Transformer Monitoring
(Oil Filled / Dry type)

Motors/Generators Monitoring
(DOL / VFD)
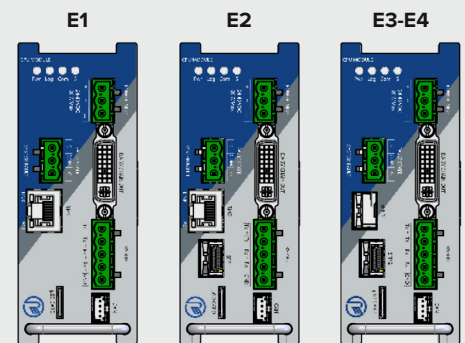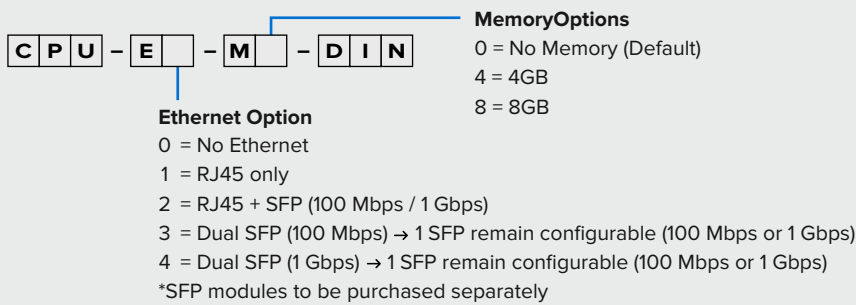
Cable Monitoring
(EHV / HV / MV)

Switchgear Monitoring
(GIS / AIS / MV Panel)

Benefits

- System boasts powerful gateway and media converter capabilities
- Historical Data Storage and Trend Analysis
- Proactive Maintenance and Cost Savings

- Informed and Quick Decision Making
- Reliability and Longevity of assets
- Prevents unexpected failures and reduces downtime
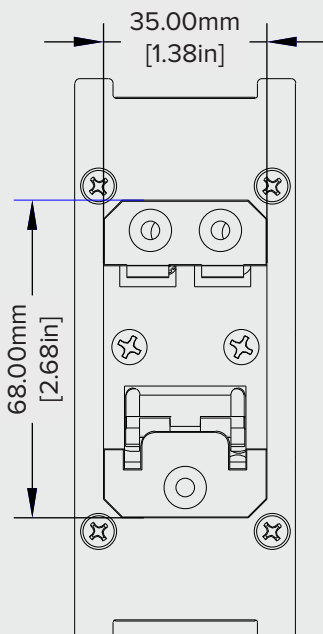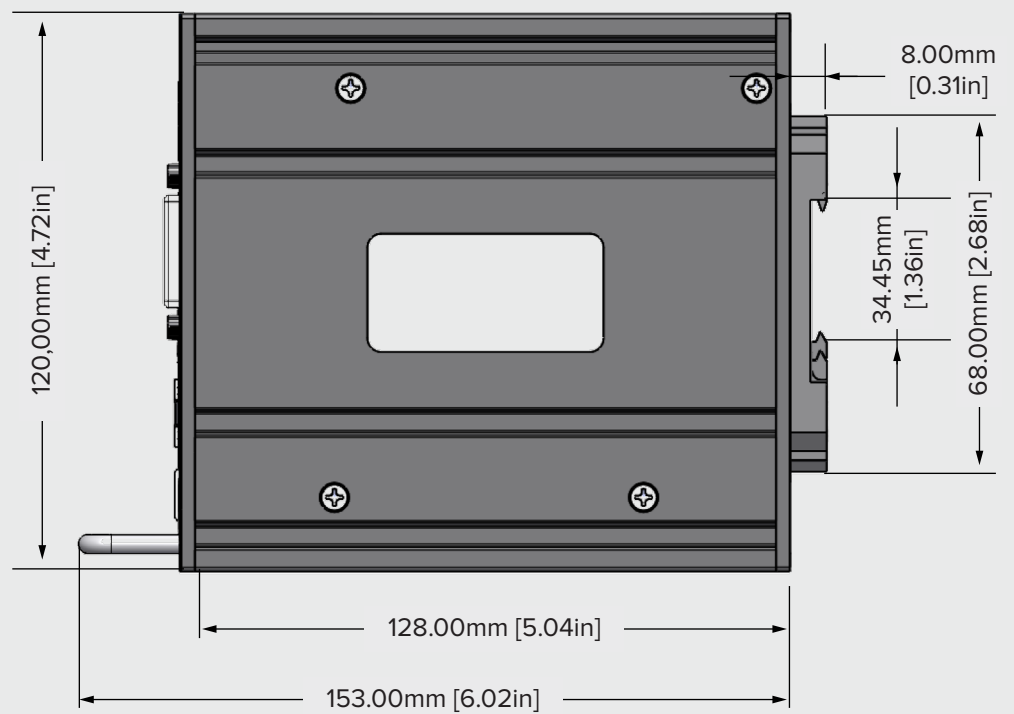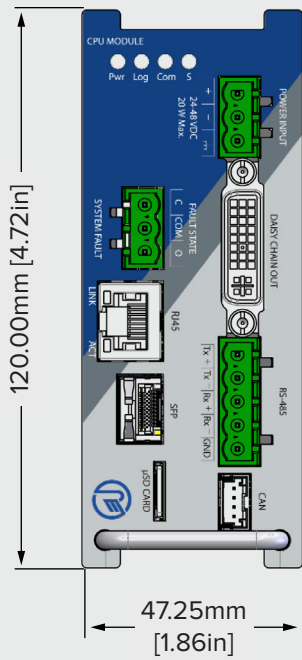
Ordering Code

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C P U – E [ ] – M [ ] – D I N
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Ethernet Option
0 = No Ethernet
1 = RJ45 only
2 = RJ45 + SFP (100 Mbps / 1 Gbps)
3 = Dual SFP (100 Mbps) → 1 SFP remain configurable (100 Mbps or 1 Gbps)
4 = Dual SFP (1 Gbps) → 1 SFP remain configurable (100 Mbps or 1 Gbps)
*SFP modules to be purchased separately

MemoryOptions
0 = No Memory (Default)
4 = 4GB
8 = 8GB

E1   E2   E3-E4

-EX OPTIONS	-E0	- R501 with 01x RS485 port only. - No Ethernet Port available - Supports Modbus RTU, DNP3.0 RTU and IEC60870-101 protocols
	-E1	- R501 with 01x RS485 port - 01x Ethernet Port (RJ-45) - Supports Modbus, DNP3.0, IEC60870-101, IEC60870-104, and IEC61850 protocols
	-E2	- R501 with 01x RS485 port - 01x Ethernet Port (RJ-45) - 01x SFP (100mbps/1gbps) Slot only (No Module included) - Supports Modbus, DNP3.0, IEC60870-101, IEC60870-104, and IEC61850 protocols
	-E3	- R501 with 01x RS485 port - 01x SFP (100mbps) Slot only (No Module included) - 01x SFP (100mbps/1gbps) Slot only (No Module included) - Supports Modbus, DNP3.0, IEC60870-101, IEC60870-104, and IEC61850 protocols
	-E4	- R501 with 01x RS485 port - 01x SFP (1gbps) Slot only (No Module included) - 01x SFP (100mbps/1gbps) Slot only (No Module included) - Supports Modbus, DNP3.0, IEC60870-101, IEC60870-104, and IEC61850 protocols
SFP MODULES	RM-SFP-SX-LC	SFP Module with 1gbps Speed (1000Base-SX), Multimode (covers up to 550m), LC Connector type, Fits into SFP slot of R501
	RM-SFP-FX-LC	SFP Module with 100mbps Speed (1000Base-FX), Multimode (covers up to 2Km), LC Connector type, Fits into SFP slot of R501

Technical Specifications

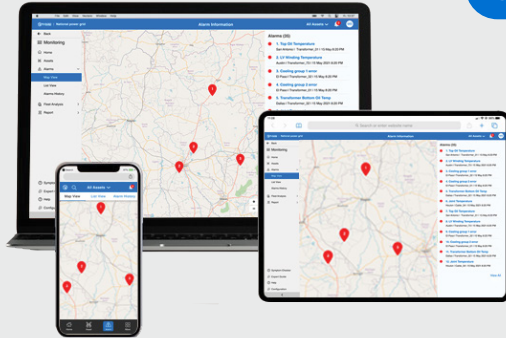| Data storage capacity	Micro SD external memory lot (up to 2 TB)
Logging Rate	1 Sec interval on USB
Config Port	USB (to use with Rugged Connect Windows software)
Dimensions(mm)	H 120 x W47.25 x D 128
Communication & Integration Options	Can integrate with any third party devices that are compatible with Modbus, DNP3.0, IEC 60870-5-104, MQTT, IEC61850, PRP

Drawings

Asset Monitoring :
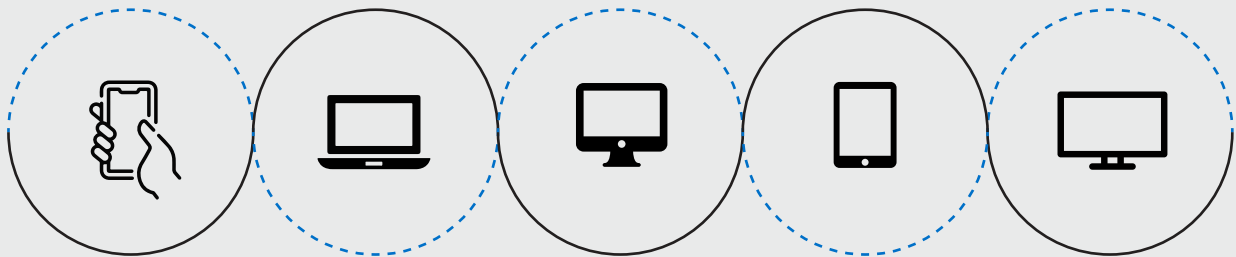# Enterprise Architecture

Compatible with Rugged Monitoring Enterprise Solution

UI UX

- Data Layer
- Analytics
- User Interface
- Custom Dashboards
- Reporting
- Email/SMS Notifications

RM EYE

Private Cloud (Customer Cloud),
Rugged Monitoring Cloud

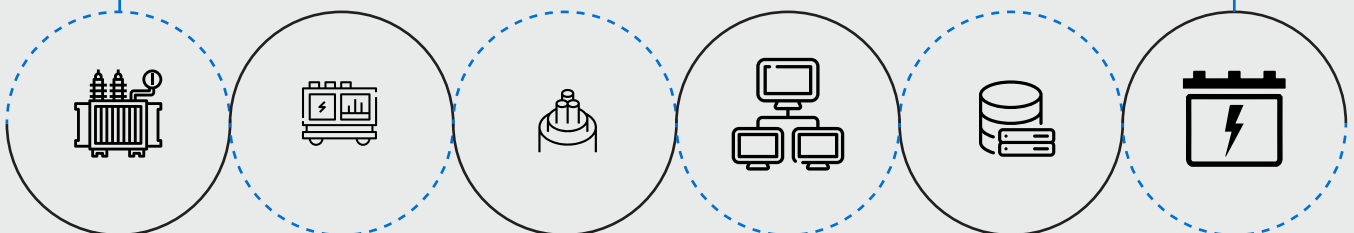| IEC 60870-104 | | ODBC |
IEC 61850	**Data Collection**	MODBUS
FTP/SFTP		DNP 3.0
- XML, JSON		HTTPS
- CSV, COMTRADE		MQTT

Asset Data

Transformer Monitoring System

Switchgear Monitoring System

Power Cable Monitoring System

- Offline Test Results
- Inspection Records
- Name Plate

- Historian
- CMMS
- SCADA/ DCS

Power Electronics (Battery, UPS, VFD, Relay)

One Solution for Multi-Site
Multi Asset Monitoring

RM Eye - Unified platform to monitor entire network of electrical assets

Features

- **Advanced asset health monitoring** with analysis and recommendations to increase asset effectiveness in addition to maximizing equipment uptime

- **Modern remote monitoring solutions** provide valuable insights to Multiple Assets at Multiple Sites from time to time

- **Establish a real time and consistent monitoring** by getting the right information into right hands

- **Simple and user-friendly interface** providing easy and fast access to all the features

- **Everything about the asset at one place** The raw data, analysis and recommendations

- **Advanced asset algorithms** for electrical assets to evaluate asset health

- **Advanced reporting technology with automated alerts**

- **An efficient, reliable partial discharge monitoring for all the assets**

- **A detailed comprehensive DGA analysis**

- **Built on well-established remote and cloud-based monitoring technology**

- **Quick configuration** so that you are not required to configure separately.

- **Protocols: MODBUS, MQTT, IEC61850**

- **Robust integration with 3rd party systems and devices** with industry standard protocols

- **Bulk configuration imports for fast deployment**

- **Encompasses a secure access to data and configuration**

- **QR code scanner on mobile devices**

- **Accessible on web browser and mobile app**

- **Historical data storage and on demand access** via export feature

- **Extended multilingual support** to handle product inquires or troubleshoot problems proactively

- **Systematic fleet management analysis**

- **Offline test data integration and analysis**

Why Customers Choose Us?

RM solution, the trusted monitoring solution for over 10000+ assets across 50+ countries. We are a leading High Value Electrical Asset Monitoring Company integrating fibre optic technology to the assets.

Attention to Details
It's our attention to the small stuff, scheduling of timelines and keen project management that makes us stand out from the rest.

A plan for Success
Our Customers are well satisfied with the advisory services that we offer to help them with best in class technological performance and a long durable life.

Experts only
We bring-in our diversified experienced team with over 100+ years of experience in Asset Monitoring

Meeting Deadlines
Work with us, and you'll work with seasoned professionals – vigilant of deadlines, and committed to exceeding client expectations.

Money Matters
We protect you against currency fluctuation with competitive and fair market prices

Rugged Monitoring Services

Rugged Monitoring provides customization of sensors, monitors & software. In addition we offer on-site commissioning services, maintenance contracts and technical support to all customers worldwide.

About Rugged Monitoring

Industry's leading team of asset condition monitoring experts with 100+ years of combined experience committed to delivering customizable solutions for challenging applications. We offer a range of reliable, high performance, customizable sensors and monitoring solutions that are immune to external influence.

Certification

| ISO 9001 | ISO 14001 | ISO 45001/ OHSAS 18000 | Llyod's Register | ATEX Certification |

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