

R501

ADVANCED TRANSFORMER MONITOR

ROBUST | RELIABLE | RESPONSIVE

R501 MONITORING FUNCTIONS

Real Time Monitoring and Advance Control

Direct Winding Hot Spot

- HV Winding
- LV Winding
- MV Winding
- Core Hot Spot

Bushing Monitoring Integration

- Leakage Current
- TanDelta
- Power Factor
- Capacitance

Load, Power, Losses

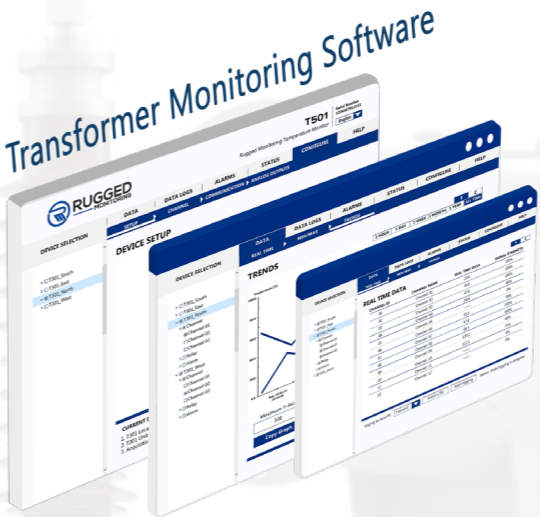
- Load/Over Current
- Active / Reactive Power
- Overload Capacity
- PF / Losses

Partial Discharge (PDM) Integration

- PD Amplitude
- PD Discharge Rate
- PD Trend

Dissolved Gas analyzer Integration

- Single gas DGA
- Multi-gas DGA
- Moisture



Transformer Health Assessment

- Remote Monitoring and Control
- Insulation Life Estimation
- Overload Capacity
- Bubbling Temperature
- Moisture in Insulation
- Real time Alarm and Notifications
- Easy Integration

Essential Monitoring

- Oil Temperature
- Winding Temperature
- Oil Level, Tank Pressure
- Moisture in Insulation
- Bubbling Temperature
- Ageing Rate
- Status/Relay Signals

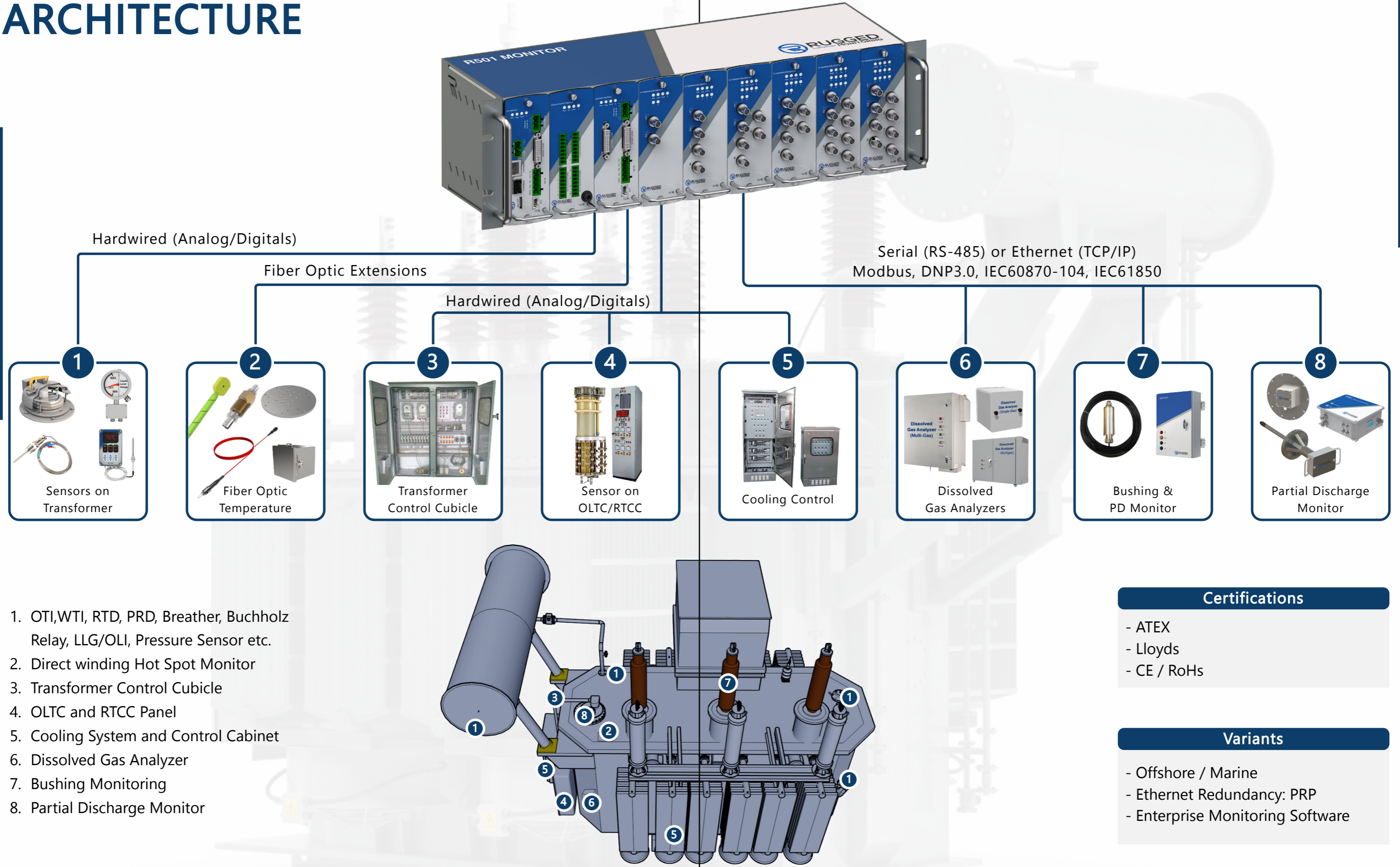
Cooling Monitoring/Control

- Fan/Pump condition
- Motor Condition
- Cooling Efficiency
- Oil/Water Flow

OLTC Monitoring

- Tap Position
- Motor Current / Voltage
- Motor Torque
- Power Consumption
- Oil Temperature
- Level Partial Discharge
- Dissolved Gases

R501 SYSTEM ARCHITECTURE



1. OTI,WTI, RTD, PRD, Breather, Buchholz Relay, LLG/OLI, Pressure Sensor etc.
2. Direct winding Hot Spot Monitor
3. Transformer Control Cubicle
4. OLTC and RTCC Panel
5. Cooling System and Control Cabinet
6. Dissolved Gas Analyzer
7. Bushing Monitoring
8. Partial Discharge Monitor

Certifications

- ATEX
- Lloyds
- CE / RoHs

Variants

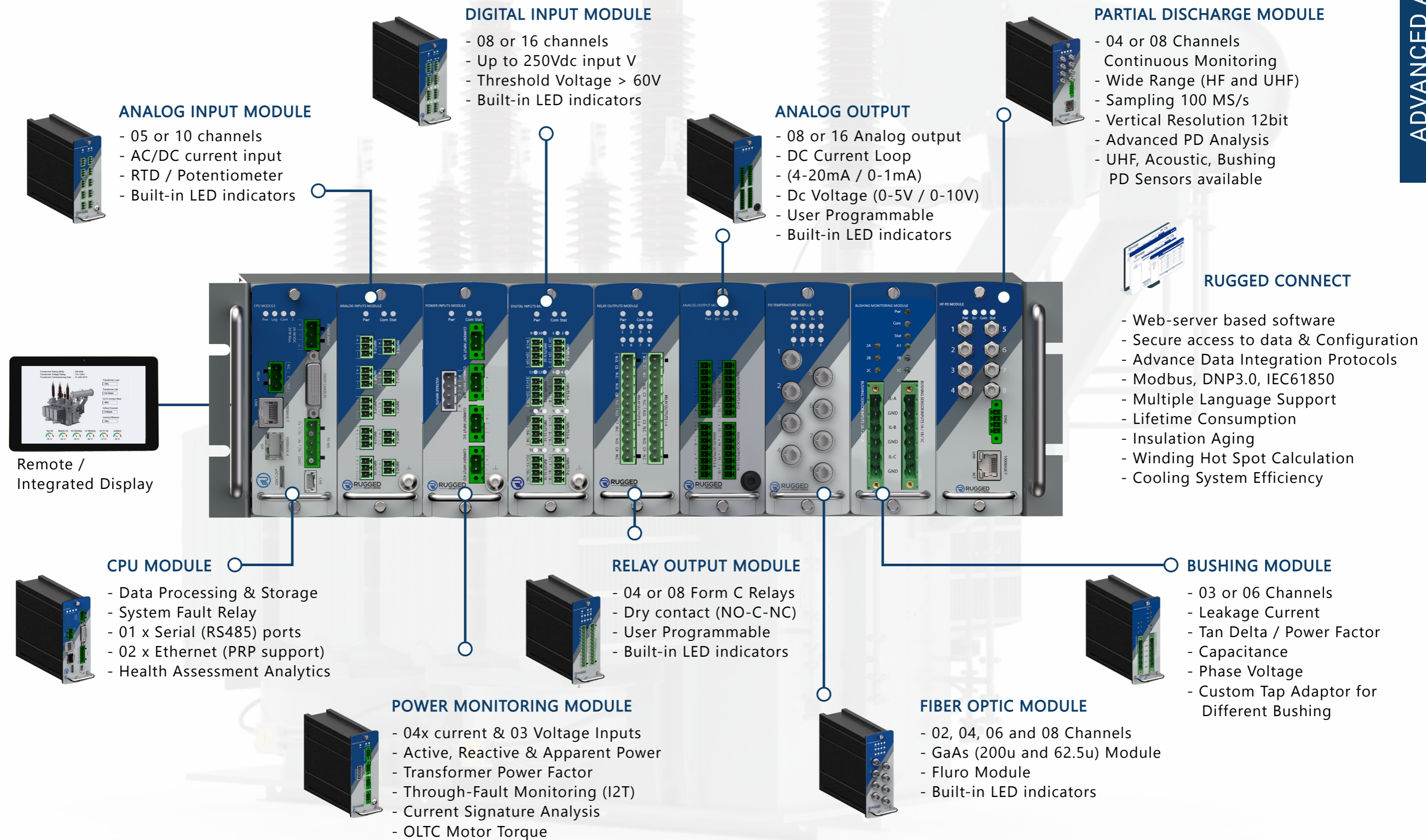
- Offshore / Marine
- Ethernet Redundancy: PRP
- Enterprise Monitoring Software

R501 FEATURES

Comprehensive Features to Meet Market Demand

FEATURES

ADVANCED ANALYTICS

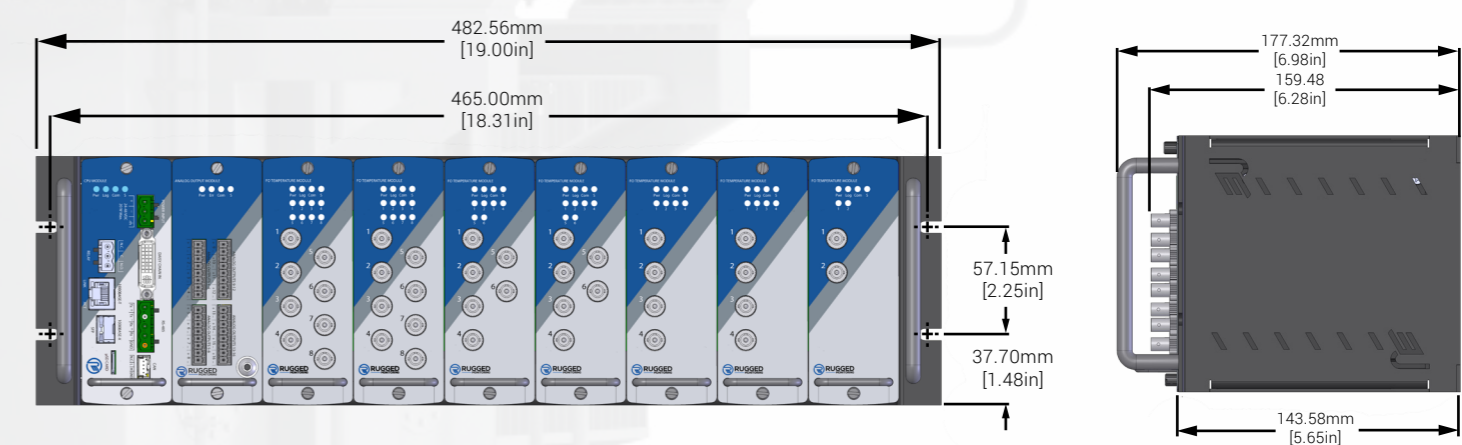


TECHNICAL SPECIFICATIONS

POWER SUPPLY	Input Power Requirement	24V DC (Default), Optional USB powered
	Data Storage Capacity	MicroSD external memory slot (up to 2 TB)
CPU MODULE	Logging Rate	1 sec interval on USB
	Config port	USB (to use with Rugged connect windows software)
SYSTEM CAPACITY	Maximum number of Channels	Expandable to 256 Channels, Daisy chain up to 32 units (with Modbus, Canbus)
FIBER OPTIC MODULES	# of Channels	2, 4, 6 and 8 channels
	Measurement Range	-80 °C to +300 °C (cryogenic 4 °K range optional)
	Resolution	0.1 °C
	Accuracy	±1.0 °C (±0.2 °C in relative temperature)
	Scan Rate	200 ms / channel (Optional: Faster scanning rates available)
ANALOG INPUT MODULE	# of Input Channels	05 or 10 Channels
	AC Current Input	Clamp-on CT with different ranges: 5Amp, 10Amp, 20Amp, 100Amp and others available
	DC Current Input	4 - 20 mA
	Temperature Input	100 ohm platinum (Pt100)
	Potentiometer	up to 20,000 ohms
POWER MONITORING MODULE	# of Input Channels	04 x Current and 03 x Voltage
	Current Input Range	0 - 5A
	Voltage Input Range	0 - 250V
	Sampling Rate	32 KS/s
	Measurement Parameters	Power, Through-Fault, Motor Torque etc.
DIGITAL INPUT MODULE	# of Input Channels	08 or 16 Channels
	Maximum voltage	250 Vdc
	Threshold voltage	>75 Vdc
ANALOG OUTPUT MODULE	# of Input Channels	08 or 16 Channels
	Output format	4-20 mA or 0-5V or 0-10V Configurable for any measured / calculated value
BUSHING MONITORING MODULE	# of Input Channels	03 or 06 Channels
	Leakage Current Range	1mA to 200mA
	Monitoring Parameters	Tan Delta (PF), Capacitance, Phase Voltage
PARTIAL DISCHARGE MODULE	# of Input Channels	04 or 08 Channels
	Acquisition Bandwidth	HPM: 0.01 - 100Mhz UPM: 100 MHz - 2 GHz
	Monitoring Parameters	PD Amplitude, Discharge Rate and PRPD
OUTPUT RELAY MODULE	# of Output Channels	04 or 08 Form C relays
COMMUNICATION OPTIONS	Ethernet Ports (RJ-45 & FO Ethernet)	Modbus, DNP3.0, IEC 60870-5-104, IEC61850
	Serail Port	RS485 with Modbus support
	CANBUS Port	CANBUS Master/Slave support for Can Dataloggers

EMC TYPE TESTING	Conducted & Radiated Emissions	ICES-003 (2016), CISPR32 (2015), CISPR11 (2015)
	ESD and EM Field Immunity	IEC61000-4-2, C37.90-3, IEC61000-4-3, C37.90.2
	Fast Transient & Surge Immunity	IEC61000-4-4, IEC61000-4-5, C37.90.2
	Magnetic Field Immunity	IEC61000-4-8, IEC61000-4-10
	Immunity from Conducted Disturbances	IEC61000-4-6, IEC61000-4-16
	Ripple, Dips & Damped Oscillatory	IEC61000-4-17, IEC61000-4-18, IEC61000-4-29
	Safety	IEC60255-26 and CE Certified
ENVIRONMENTAL AND MECHANICAL	Operating Temperature	-40 to 72 °C
	Operating Humidity	95% Non Condensing
	Storage Temperature	-40 to 85 °C
	Dimensions	W26.7 cm x H7.2 cm x D18.7 cm (10.5" x 2.8" x 7.4")
	Weight	App. 5Kg. (for complete filled Chassis)

PRODUCT DRAWINGS



Weight : 5 Kilograms

ORDERING CODE

Please Contact Factory for Ordering Code and Quotation

RUGGED MONITORING



Certification

- ISO9001
- ISO14000
- ISO 45001 (OHSAS 18000)
- ISO17025 Certification
- NIST Certification
- ATEX Certification



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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 leading team of fiber optic 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.

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