

INSPECTOR™



INSPECTOR V3™ 24/7 Real Time Monitoring System

Can You Afford To Risk Lose Your Investment?



Inspector V3™ monitors environmental conditions, electrical parameters and any critical parameters needed by customers, suitable for any sophisticated systems, modalities, environment or facilities.

Applications:

- Health facilities & Blood banks
- Medical Equipment (MRI, CT, X-Ray, PET CT ..)
- Food industries
- HVAC Systems



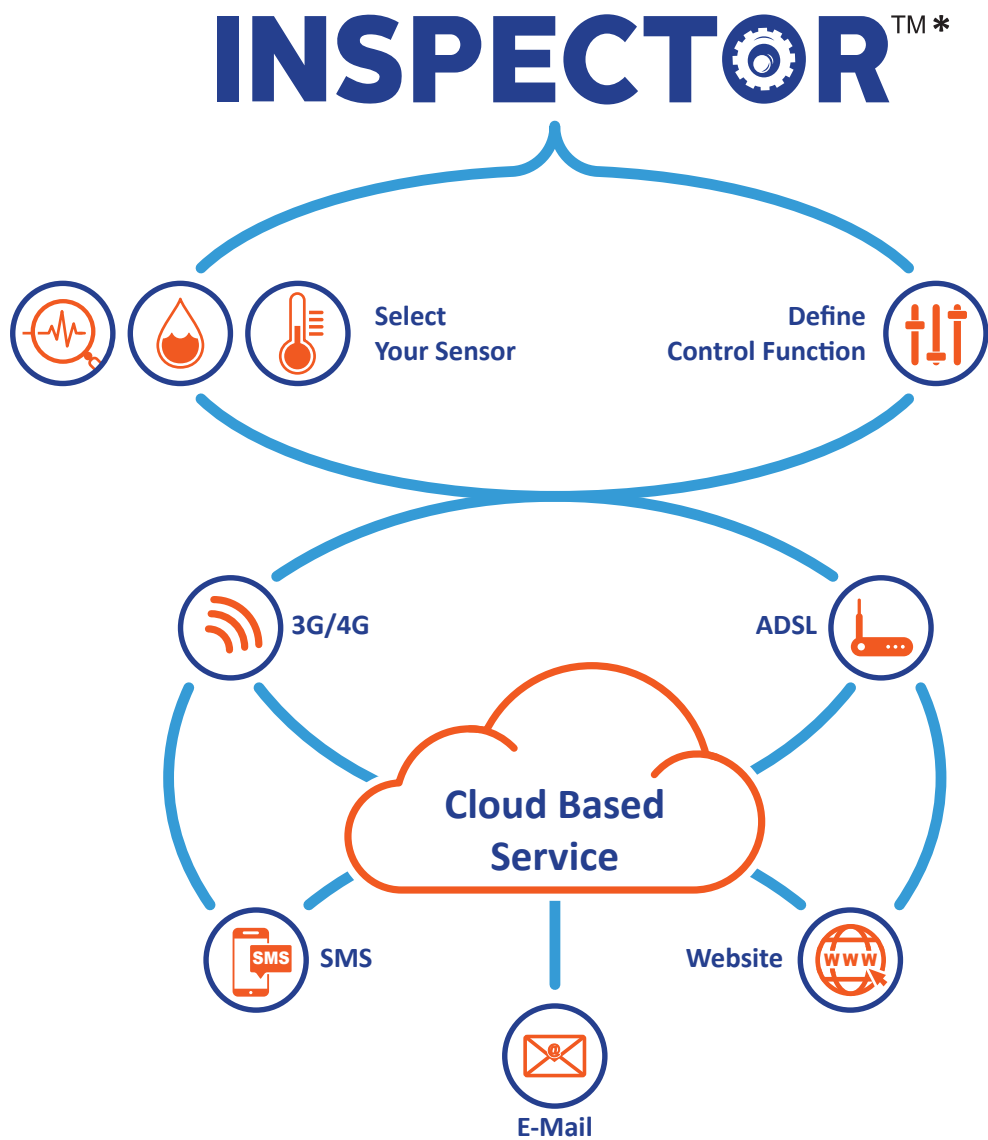
INSPECTOR V3TM
Cloud Based Monitoring System

Inspector V3 is a unique customizable system for real time monitoring based on cloud computing technology designed to be an advanced tool for data logging in any industrial, environmental and Medical application with wide varieties of applications.

The Inspector V3 monitors external conditions and critical parameters of any sophisticated systems, modalities, environment or facilities.

The cloud-based service of the inspector ensures excellent performance, high data security, cost effectiveness, scalability and avoid maintenance problem.

Inspector System Components		
Customizable hardware based on customer's needs can monitor electrical and environmental parameters.	Internet connection through Ethernet (ADSL, 3G, WiFi)	Cloud-based application Accessed through (Mobile, Tablet, PC and Laptop)



* Internet Connectivity Provided by the Customer

Monitoring Parameters



Electrical Power

Preventive and Predictive Maintenance

- Identify sources and frequency of any power line events
- Store the precise timing of events
- Develop maintenance schedules based on trend analysis

Decision-making support and mitigation plan

- Monitor, trend and conditions
- Analyze interruption, voltage sags, voltage swell and many power parameters
- Make decisions based on documented trends via our reporting service

Benchmarking and dash boarding

- Full access to all parameters on-line
- Online alarms and statistics

Electrical power monitoring parameters

- | | |
|---|-------------------------------|
| 1. Three phase voltage measurements | 2. Power line frequency |
| 3. Three phase current measurements | 4. Voltage imbalance |
| 5. Ground to neutral voltage | 6. Ground current |
| 7. Ground resistance, Line Impedance, Loop impedance | |
| 8. UPS status (Survive or not) | 9. Status of main input power |
| 10. Power events detection according to IEEE classification of power quality (IEEE Std 1195 TM – 2009) which include: | |
| • Voltage Sags | • Voltage Swells |
| • Interruptions | • Over voltage |
| • Under voltage | |



Environmental Monitoring

Any type of environmental sensors can be interfaced to inspector hardware through our customization process. After this customization plug and play your sensor. The inspector hardware can interface to any types of sensors based on customer needs.



Temperature Monitoring

Inspector hardware provides a complete solution to your air or water temperature data logging needs and applicable to add more sensors and probes (Up to 128 sensors).



Humidity Monitoring

Inspector hardware provides an advanced humidity monitoring system in an environment or cold chain application and in another area of concern with wide varieties of applications.



Air Quality Monitoring

Inspector hardware interface directly air quality sensor to measure the quality of indoor air and ensure the safety and comfort of workers in commercial and industrial environment.

INSPECTOR V3™ Technical Specifications

Part No. BB0201030

Power Quality

Standard	IEEE Std 1159-2009
RMS Voltage range	0:480 VAC nominal per channel
Current sensing rang	0:30A
Frequency range	A Zero crossing detection technique is implemented to measure frequency from 45 to 65 Hz
Voltage Imbalance	Voltage imbalance percentage
RTC	Real time clock is configured to report events with accurate time in millisecond
Sampling Rate	8μSPS/ channel (Sample/Second)
Measurement Inputs	Three channels
Time Synchronization	Auto clock synchronization to time server UTC using NTP protocol
Events	Unexpected power line events such as: (sags, swells, interruptions, over-voltage, under voltage) or events that cause device damage
Event Trigger	Voltage deviation of ½ cycle RMS voltage ($\leq 90\%$) or $\geq 110\%$ of set nominal
Event Details	Start and end of event is captured and reported accurately with 4 cycles before and after
Periodic RMS Data Logging	Maximum, Minimum and average voltage recorded for each 2 minutes period
Power Supply and Battery Backup	Line powered from channel 1 (L1 to Neutral). Battery support with four hour working.
Data Storage	Storage cache for (500) power quality events and (8000) readings, cleared after automatic upload to cloud virtually unlimited permanent event storage in Cloud server
SD Memory Card	32 Giga (Externally access) Ability to add up to 256GB

Humidity Sensor

Humidity Range	0-100 %RH
Humidity Resolution	14 bit. (0.01% RH)
Humidity Accuracy	$\pm 2\%$ error

Temperature Sensor (3sensors)


Temperature Range	-40 - +125 °C
Temperature Resolution	14 bit. (0.01% °C)
Temperature Accuracy	$\pm 0.3\%$ °C Error
Types	NTC

Communication

Ethernet	Supported
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Attached Units

SMB Specifications		Part No.
SMB measures three parameters: Temperature, Humidity and air quality.		MODSB4B010
Humidity Sensor Specifications		
Measurement Range	0-100 %RH	
Measurement Resolution	0.04 %RH- 12 bits	
Measurement Accuracy	±2 %RH	
Temperature Sensor Specifications		
Measurement Range	-40 - +125 °C	
Measurement Resolution	0.04 °C - 12 bits	
Measurement Accuracy	±0.3 °C	
Air Quality Sensor Specifications		
Target Gas	Ammonia gas, toluene, hydrogen, smoke, sulphide, benzene series steam.	
Detection Range	"10~1000 ppm (ammonia gas, toluene, hydrogen, smoke)."	
Sensitivity	Rs(in air)/Rs(in 400ppm H2) ≥5	
Preheat Time	48 Hours	
Interface & Powering of SMB specifications		
Interface to Main Board	RS-485	
Power	12 volt – internally form Main Board	
Indicators	One LED (online, Alarm)	
Environmental & Mechanical Specifications		
Enclosure	ABS Plastic	
Operating Temperature	0-50 °C	
Storage Temperature	0-70 °C	
Relative Humidity	0-95% RH	
Weight	100 gram	





CMB Specifications

CMB measures: Three phase electrical current values and earth current value.
(Using current coils - noninvasive).

Part No.

MODSB2A010



Three Phase Current Measurements Specifications (Current Coil Per phase) -Three Channels.

Measurement Range	0-80A Max
Measurement Resolution	.1 A
Measurement Accuracy	2% Max
Current coil Internal Hole Diameter	16 MM
Current coil Dielectric Withstanding Voltage(Hi-pot)	2.5KV/1mA/1min
Current coil Impulse Withstand Voltage	5KV Peak
Current coil Insulation Resistance	DC500V/100MΩ min
Current coil Approx. Weight	85 gm

Earth Current Measurements Specifications- One Channel.

Measurement Range	0-1A Max
Measurement Resolution	1 mA
Measurement Accuracy	2% Max
Alarm LED	ON if earth current value > 250 mA
Current coil Internal Hole Diameter	16 MM
Current coil Dielectric Withstanding Voltage(Hi-pot)	2.5KV/1mA/1min
Current coil Impulse Withstand Voltage	5KV Peak
Current coil Insulation Resistance	DC500V/100MΩ min
Current coil Approx. Weight	85 gm

Interface & Powering of CMB Specifications

Interface to Main Board	RS-485
Power	12 volt – Internally form Main Board
Indicators	Two LEDS (online ,Alarm)

Environmental & Mechanical Specifications

Enclosure	ABS Plastic
Operating Temperature	0-50 °C
Storage Temperature	0-70 °C
Relative Humidity	0-95% RH
Weight	400 gram

HCMU Specifications

Part No.

HCMU measures: The efficacy of any pump or compressor. (Using current coils - noninvasive).

MODSB3A010



Pump/Compressor Measurements Specifications (Current Coil Per phase) -Three Channels.

Measurement Range	0-80 A Max
Measurement Resolution	.1 A
Measurement Accuracy	2% Max
Threshold for detection	>1.5 A for All phases.
Alarm LED	ON if pump or compressor is off
Current Coils Specifications	The same specifications like CMB current coils

Interface & Powering of HCMU Specifications

Interface to Main Board	RS-485
Power	12 volt – Internally form Main Board
Indicators	Two LEDS (online ,Alarm)

Environmental & Mechanical Specifications

Enclosure	ABS Plastic
Operating Temperature	0-50 °C
Storage Temperature	0-70 °C
Relative Humidity	0-95% RH
Weight	320 gram

Additional Item

Disconnect Box

Part No.

The electrical disconnect box is a crucial component that safely isolates power to connected devices. It has two isolation stages to protect the user and equipment.

Safety features include two LOTO (Lockout/ Tagout) sets and an IP65-rated ABS enclosure. The box can be configured for delta or star electrical connections.

MODB03A010





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