

PORTABLE INSPECTOR V4™ 24/7 Real Time Monitoring System

Can You Afford To Risk Lose Your Investment?



Portable Inspector V4™ monitors environmental conditions, electrical parameters and any critical parameters needed by customers, suitable for any sophisticated systems, modalities, environment or facilities.

Applications:

- Medical Equipment
- Industrial Facilities
- Data Centers
- Renewable Energy
- Telecom
- IT Infrastructure
- Building Management Systems



Inspector™ is the first step

Inspector V4 Standard Specifications

Main Unit Specifications

Processor	Quad-core ARM Cortex-A72- 1.5 GHz
Flash Memory	16 GB
RAM	2 GB
Display	7 inch touch screen

Internal Power Supply Specifications

Input Voltage source	Powered from Separate L-N
Input Voltage Range	90 ~ 264 VAC
Input Frequency	47 ~ 63 Hz
RATED POWER	60 Watt
Power Supply standard	IEC60601-1, TUV BS EN/EN60601-1, UL ANSI / AAMI ES60601-1 (3.1 version), EAC TP TC 004 CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved; Design refer to BS EN/EN60335 1

Battery Specification

Type	Lithium-ion 4S2P
Back up time	6 hours
The battery voltage	14.5 VDC
Nominal capacity	6700mAh
Protection type	Over voltage, Under voltage, Over Temperature, Under Temperature, Over Current, Cell balancing
Battery certificates	UN38.3, IEC62133, UL [CU 72405569]

Main Unit Interfaces

SD Memory Card	32 Giga (Externally access)	
	Ability to add up to 256 GB	
Ethernet	RJ45 Connectors	10/100/1000Base-T
	Number of port (2)	1 for internet connection 1 for local monitoring and configuration
RS 485	Number of port (6)	RJ45 interface
USB	Number of port (2)	USB 2.0
HDMI	Number of port (1)	HDMI 2.0

Communication Protocols

HTTP/HTTPS - DNP3 - BACnet - ModBus - IEC 61850 - MQTT - SNMP - Emails - IEC 62056

Main Unit Environmental & Mechanical Specifications

Indicators	Five LEDs (Running, Internet, Error, AC, Battery)
Enclosure	IPx1 (Indoor use only).
Operating Temperature	0 - 50 °C
Storage Temperature	-20 - 60°C
Relative Humidity	10-85% RH
Weight	5 kg with battery
Dimensions	278 mm x 222 mm x 114 mm

Main Unit Power Quality Specifications Measurement

Power Quality Channels	Two Isolated Power Quality Channel
Number of input/channel	Voltage: 5 / Current: 5 per channel
Configuration/Connection	Single phase 2 wire - 1P2W 3-phase/3-wire (Delta connection)-3P3W 3-phase/4-wire (stare connection)-3P4W

	Range	Resolution	Accuracy
Voltage	0 - 1000 VRMS	0.1 VRMS	± 0.5%
Current	0 - 1000 A	0.1 A	± 2%

Maximum input voltage	Voltage input: 1000 V AC
Maximum rated terminal to-ground voltage	1000 V AC (CAT III) or 600 V AC (CAT IV)
Input Voltage Frequency	40 – 70 HZ
Sampling rate	32 KSPS for each input
ADC Resolution	24-Bits

Measurement parameters**Voltage Parameters**

RMS Voltage L-L, RMS Voltage L-N, Voltage Crest Factor, Active Power Demand Value, Reactive Power Demand Value, Apparent Power Demand Value, Voltage Total Harmonic Distortion, Voltage Harmonic Amplitude, Harmonics Voltage Phase Angle, Harmonics Voltage-Current Phase Difference, Voltage Waveform Peak (+, -), Voltage Unbalance Factor (Negative-Phase, Zero-Phase)

Current Parameters

RMS Current, Current Crest Factor, Active Power Demand Quantity, Reactive Power Demand Quantity, Apparent Power Demand Quantity, Current Total Harmonic Distortion, Current Harmonic Amplitude, Harmonics Current Phase Angle, Current Waveform Peak (+, -), Current Unbalance Factor (Negative-Phase, Zero-Phase)

Power Parameters

Active Power, Reactive Power, Apparent Power, True Power Factor, Displacement Power Factor, Demand Power Factor, Active Energy, Reactive Energy, Apparent Energy, Interharmonics Power

Frequency Parameters

Frequency (10/12 cycle), Frequency (10 sec)

Flicker Parameters

Instantaneous Flicker Value, Short Term Voltage Flicker, Long Term Voltage Flicker

Harmonics and Interharmonics

Harmonics Power, Interharmonics Voltage, Interharmonics Current

Other Parameters

K-Factor, Phase Sequence Detection

Power Events Detection According to IEC classifications Of Power Quality (IEC61000-4-30).

Types of events Detected	Voltage Dips, Voltages Swells, Interruption, Voltage Transients, Total harmonics distortion, RVC, Frequency variation, Inrush Current
Other Types of Events	Phase Sequence Detection
Event Details Saving	Start and End of event is captured and reported accurately with 5 cycles before and after.

Grounding Measurement Specifications:

Measurement Methods

	Tripping	Non Tripping	
One Earth Resistance Channel phase L1,N,E	Range	Resolution	Accuracy
Earth Current Measurements	0 - 10 Amp	1 mA	± 2%
Earth Resistance Measurements	0 - 200 Ω Max	0.1 Ω	±3 %

Main Unit Environmental Measurements Specifications

Temperature sensors ATMP "3 sensors"

Specification of sensors	Range	Resolution	Accuracy
	0 - 85 °C	0.1 °C	± 0.5 °C

HTC sensors (optional) "2 sensors"

Specification of sensors	Range	Resolution	Accuracy
Temperature	0 - 85 °C	0.1 °C	± 0.5°C
Humidity	0 to 100 %RH	0.1 RH	± 2% RH

(4-20 mA) Interface "2 slots"

Type of Sensor	Any type of analog sensor:(pressure, flow, temperature.....)
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Attached Unit

THPAQ Unit

THPAQ measures the Temperature, Humidity, pressure, Air Quality and Vibration parameters

The THPAQ is designed to monitor the air quality and continuously monitor carbon dioxide (CO₂), total volatile organic compounds (TVOC), and oxidizing gases such as (NO_x or O₃), Particulate Matter (PM), Temperature, Relative Humidity, Barometric Pressure.

Specifications

Humidity Sensor Measurement Range	Resolution	Accuracy
0 – 100 % RH	1% RH	±3 %RH
Temperature Sensor Measurement Range	Resolution	Accuracy
(0)°C - (+85)°C	0.1 °C	±1 °C
Pressure Sensor Measurement Range	Resolution	Accuracy
300 - 1100 mbar	1 mbar	±2mba
TVOC – Total Volatile Organic Component Rang	Resolution	Accuracy
0 – 1000 ppm	1 ppb	±15 %
NO _x – Mono Nitrogen Oxides Range	Resolution	Accuracy
0 – 10 ppm	1 ppb	±15 %
CO ₂ – Mono Carbon Dioxide Rang	Resolution	Accuracy
0 to 1000 ppm	1 ppb	± (40 ppm + 5%)
PM – Particulate Matter Rang	Resolution	Accuracy
0 to 1000 µg /m ³	11 µg /m ³	(PM _{2.5}) ± 10 µg /m ³

Vibration Sensor Specification

Measurement Range	Up to ± 8 g
Sensitivity	4 mg/digit
Accelerometer Type	Three-axis "Nano" accelerometer
Sampling Rates (Output Data Rate)	1-400 Hz (Sample Per Second)
Other Monitoring beside the vibration	Free-fall detection & shock and Impact

Interface & Powering of THPAQ Unit

Interface to Main Board	RS-485
WIFI	Optional
Power	24 volt – internally form Main Board using RS485
Indicators	Two LED (online, Alarm)
Selectable address	7 Dip switches
USB type C	Transfer instantaneous data using Jason format to PC Powering unit using USB

Environmental & Mechanical Specifications

Enclosure	ABS Plastic
Operating Temperature	0 - 50 °C
Storage Temperature	-20 - 60°C
Relative Humidity	0-95% RH
Dimensions	104 mm x 92 mm x 42 mm
Weight	120 g

MMU - Motor Measure Unit

Measure any motors current consumption Ex (Helium compressor, Chiller pump...). MMU connected non-invasively without any interference with the equipment using the Split core current transformer.

**MMU measures: The efficacy of any pump or compressor. (Using current coils - noninvasive).
Measurements Specifications (Current Coil Per phase) -Three Channels.**

Measurement Range	Resolution	Accuracy
0-100 A Max	0.1 A	$\pm 1A$

Current Coils Specifications

Inner diameter	24mm
Dielectric Withstanding Voltage(Hi-pot)	2.5KV/1mA/1min
Impulse Withstand Voltage	5KV Peak
Insulation Resistance	DC500V/100M Ω min
Approx. Weight	85 gm

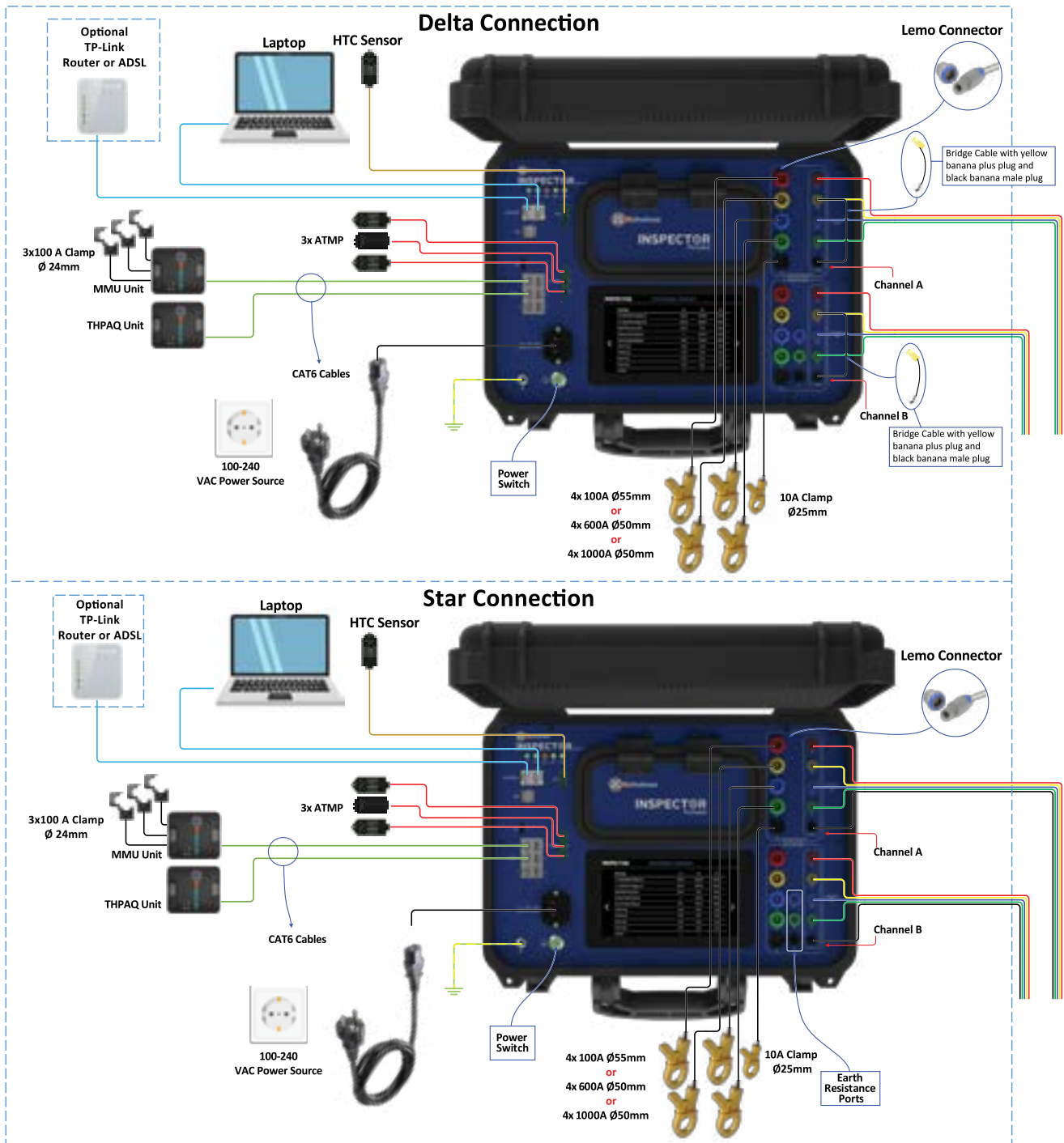
Interface & Powering of MMU Specifications

Interface to Main Board	RS-485
WIFI	Optional
Power	24 volt – internally form Main Board using RS485
Indicators	Two LED (online, Alarm)
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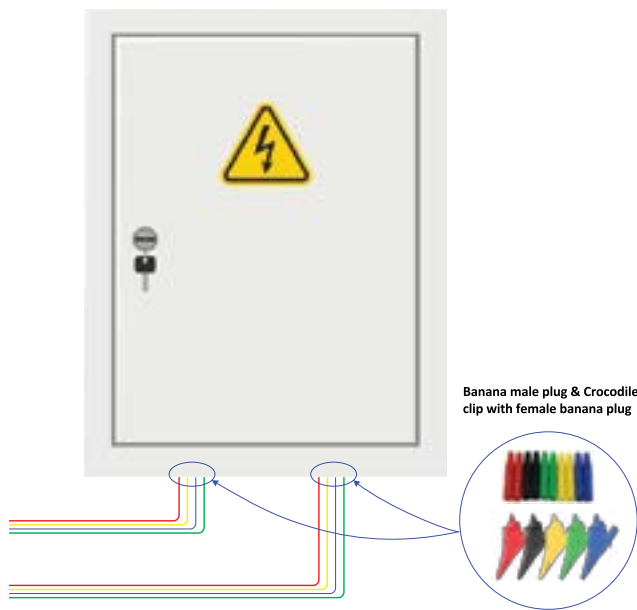
Environmental & Mechanical Specifications

Enclosure	ABS Plastic
Operating Temperature	0 - 50 °C
Storage Temperature	-20 - 60°C
Relative Humidity	0-95% RH
Dimensions	104 mm x 92 mm x 42 mm
Weight	100 g + (85/coil)

Portable Inspector System Layout



Accessories



Current Clamp on
3 meter cables

Lemo Connector

10A Clamp
Ø25mm
and
4x 100A Ø55mm
or
4x 600A Ø50mm
or
4x 1000A Ø50mm

Rogowski Coil Kit
5 meter cables

Lemo Connector

10A Clamp
Ø25mm
and
4x 4000A
Rogowski Coils

Bridge Cable with yellow banana plus plug and black banana male plug

Power Cables Banana - Crocodile

Banana male plug

3 meter

Banana male plug & Crocodile clip with female banana plug

Product Certificates





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