

INSPECTOR™

PW PowerWadi

INSPECTOR™ Basic Panel Mount The First AI-Powered Power Quality Analyzer

Can You Afford To Risk Lose Your Investment?



Inspector™ panel mount monitors environmental conditions, power quality, electrical parameters, and any critical parameters required by customers, suitable for any sophisticated systems, modalities, environments, or facilities.

Applications:

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



Inspector Basic Panel Mount Specifications

Main Unit Specifications

Processor	Quad-core ARM Cortex-A72- 1.5 GHz
Flash Memory	16 GB
RAM	2 GB

Internal Power Supply Specifications

Input Voltage source	Powered from Separate L-N
Input Voltage Range	90 ~ 264 VAC , 50 ~ 60 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

Main Unit Interfaces

LCD display	3.16" , With Touchscreen
SD Memory Card	32 Giga (Externally access), Ability to add up to 256 GB
Ethernet	2 x RJ45 Connector - 10/100/1000Base-T
RS 485	2 x RJ45 interface for XMBs (External THPAQ, MMU ..etc)
USB	3 x USB
Digital Input	2 x Channel, 0-30VDC
Relay Output	2 x Channel, 30 V AC or DC, 1A max

Environment sensors

ATMP Inputs		3 x Channels	
	Range	Resolution	Accuracy
Temperature	0 - 85 °C	0.1 °C	± 0.5 °C
(4-20 mA) Inputs	2 x Channels		
Type of Sensor	Any type of analog sensor:(pressure, flow, temperature.....)		
HTC sensors		3 x Channels	
	Range	Resolution	Accuracy
Temperature	0 - 85 °C	0.1 °C	± 0.5 °C
Humidity	0 to 100 %RH	0. 1 RH	± 2% RH

Communication Protocols

Protocols	HTTP/HTTPS - DNP3 - BACnet - ModBus - IEC 61850 - MQTT - SNMP - Emails - IEC 62056
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Main Unit Power Quality Measurement (AC)

AC Power Quality Channels	Two Isolated Power Quality Channel (One of them as an Optional-External Module)
AC 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 - 630 VRMS	0.1 VRMS	± 0.5%
Current	0 - 1000 A	0.1 A	± 2%
Sampling rate	32 KSPS for each input		

Main Unit Power Quality Measurement (DC)

DC Power Quality Channels	One Isolated Power Quality Channel
DC Number of input/channel	Voltage: 1 channel , Current: 1 channel

	Range	Resolution	Accuracy
Voltage	0 - 630 VRMS	0.1 VRMS	± 0.5%
Current	0 - 1000 A	0.1 A	± 2%
Sampling rate	Up to 125 ksps		
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

Working Environmental Specifications

Operating Temperature	0 - 60 °C
Storage Temperature	0 - 60°C
Relative Humidity	0-95% RH

External modules

Power Quality and RE module (Optional)

AC Power Quality Channels	Isolated Power Quality Channel
AC 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
Voltage Range	0 - 630 VRMS
Voltage Resolution	0.1 VRMS
Voltage Accuracy	± 0.5%
Current Range	0 - 1000 A
Current Resolution	0.1 A
Current Accuracy	± 2%
Sampling rate	32 KSPS for each input

RE Measurement

Measurement Methods	Triping / Non Triping
Earth Current Range	0 - 10 Amp
Earth Current Resolution	1 mA
Earth Current Accuracy	± 2%
Earth Resistance Range	0 - 200 Ω Max
Earth Resistance Resolution	0.1 Ω
Earth Resistance Accuracy	±3 %



Battery module (Optional)

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]



Attached Unit

THPAQ R1 Unit

THPAQ R1 measures the Temperature, Humidity, pressure, Air Quality and Vibration parameters

The THPAQ R1 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 %
CO₂ – 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	

THPAQ R2 Unit

THPAQ R2 is designed to monitor the Temperature, Relative Humidity and 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

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	± 1A

Current Coils Specifications

Inner diameter	24mm
Dielectric Withstanding Voltage(Hi-pot)	2.5KV/1mA/1min
Impulse Withstand Voltage	5KV Peak
Insulation Resistance	DC500V/100MΩ 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)
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	100 g + (85/coil)

SIB – Sensor Interface Board

SIB module is designed to integrate any sensor (4-20) mA to the Inspector™ monitoring system such as fluid temperature, fluid flow, fluid pressure and PH.

Sensor Interface Board can interface UP to 8 Sensor: (Flow, Pressure, Temperature, PH.....)

Interface	(4-20mA) for the 8 Sensor
Unit address	Dip switch 5 bit
Number of cascaded unit	Up to 32 unit
Configuration	Configurable from main unit

Interface & Powering of SIB specifications

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	200 mm x 120 mm x 60 mm
Weight	500 gram

SMU

Sulfur Measurement unit used to quantify the amount of sulfur ampiant, often used in industries. It measures H2S (Hydrogen Sulfide) and SO2 (Sulfur Dioxide).

SMU measurement Specifications

Gas Measure H2S	Range 0 - 50 Parts Per Million
Gas Measure SO2	Range 0 - 20 Parts Per Million

Interface & Powering of SMU specifications

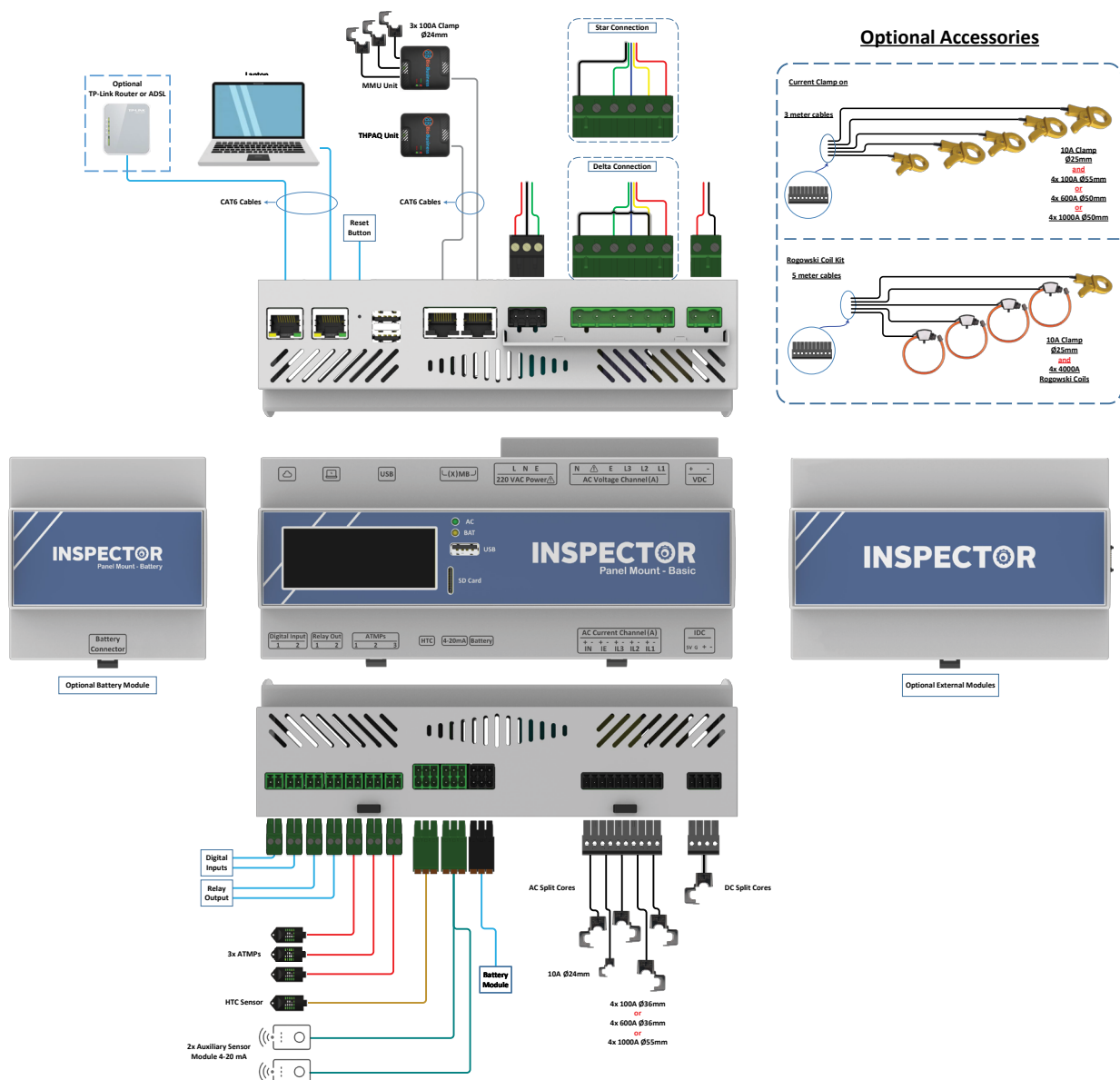
Interface to Main Board	RS-485
WIFI module	optional
Power	24 volt – internally form Main Board using RS485

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

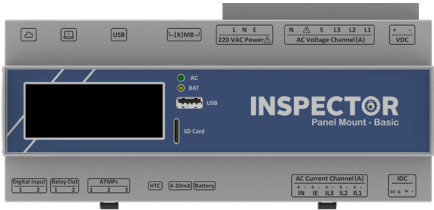



Environmental & Mechanical Specifications

Enclosure	ABS Plastic
Operating Temperature	0 - 50 °C
Storage Temperature	-20 - 60°C
Relative Humidity	0-95% RH
Dimensions	103 mm x 92 mm x 42 mm

Installation Layout



Inspector Standard Package Content Part No. BB0203010

Type	Contents	Qty	Picture
	Main Unit	1	
ATMP Kit	ATMP (External temperature sensor)	3	
	ATMPs Cable 0.5mm2 - 22 AWG - 2 conductors (Roll 50 meters)	1	
	ATMPs TERM BLOCK PLUG 2POS connector	3	
	3M Scotchlok UY2 connector	10	
MMU Kit	MMU (Motor Monitoring Unit)	1	
	Split Core Current Coils- 100 Amp range	3	
THPAQ	THPAQ (T/H/P + Co2+ Air quality unit)	1	
Installation Kit	Voltage cables 5 wires banana connector + 5 crocodiles	1	
	CAT6 Network Cable (5 m)	3	
	CAT6 Network Cable (1.8 m)	1	
	Extra Fischer Expansion plug SX 6 x 30	4	
	Extra Self-tapping screw - ST 3.5mm X 38	4	
	Delta/Star bridge cable	1	
Current kit	Split Core Current Coil -10 Amp range for Earth current	1	
	Split Core Current Coils - 600 Amp range for 3phases+N	4	

Additional Items And Accessories:

Current Clamp

Felexible Rogowski Coil Up to 4000A

EM5



Split Core Current Coil -10 Amp range for Earth current 1

EM6



Split Core Current Coils- 100 Amp range

EM7



Split Core Current Coils - 600 Amp range for 3phases+N

EM8



Clamp ON Current Coil- 10 Amp range for Earth current

EM9



Clamp ON Current Coil- 100 Amp range for 3phases+N

EM10



Clamp ON Current Coil- 600 Amp range for 3phases+N

EM11



HTC Kit (External humidity and temperature sensor) with Cable

EM12



SF6 Sensor Unit

EM13

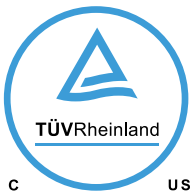
Pressure Sensor 4-20 mA

EM14

Flow Sensor 4-20 mA

EM15

Product Certificates





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