

GRID EDGE SOLUTIONS

e-mesh Monitor

Cloud-enabled digital solution



A cloud-based digital platform, exclusively designed to aggregate data from distributed energy assets and turn it into actionable business insights.

Hitachi ABB Power Grids' e-mesh™ ecosystem of solutions and products ensure power reliability and availability, grid stability, and the integration of renewable energy enabled by advanced automation technology. e-mesh Monitor is a scalable cloud-enabled digital platform that brings information technology and operational technology together to transform data collected from different distributed energy assets into business insights. It facilitates better, more informed business decisions to maximise productivity and avoid down times. e-mesh Monitor is a seamlessly integrated software as a service (SaaS) solution.

Solution at a glance

Monitor, manage and analyse your distributed energy resources for optimal performance:



Connectivity, aggregation & centralisation

- Secure data collection from all DERs using Hitachi ABB Power Grids Digital Enterprise Connect Edge
- Southbound over Modbus TCP/IP
- Northbound secure web connectivity
- 3G/4G connectivity optional
- Data ingestion and processing
- Secure data storage on cloud side
- Custom web application protocol interfaces (APIs) developed on demand
- Cybersecurity services



e-mesh Monitor

- Real-time & historical data processing
- Intuitive web interface accessible from PC, laptop, tablet or mobile phones
- Three subscription plans: Standard, Pro and Expert



e-mesh Applications

- Transforms data into insights to help improve business performance
- Four suites: Analytics, Optimiser, Service and Premium

Site IoT Edge		Digital Enterprise Connect Edge
Hardware	CPU	Intel E3826 dual-core Atom, operating at 1.46GHz Integral GPU
	RAM	4GB DDR3L 1333MHz SO-DIMM
	Ethernet	2 x GbE Ethernet ports (each is a discrete GbE solution)
	Serial Interface	1 x RS-232 or RS-422/485 serial port (BIOS configurable)
	USB	2 x USB 2.0 ports and 1 x USB 3.0 port
	Display	1 x VGA and 1 x HDMI
	Disk	32GB SATA
	Wi-Fi	2x2 11ac Wi-Fi / BT
	Mobile communication	3G Modem (available only in 1KHW003477P0002) SIM card not provided
	External Antenna Kit	Accessory with dedicated separate ordering number
	Dimensions	Width: 140mm, Height: 36, Depth: 117
	Din Rail Mounting	Mounting Kit included
	Power Supply	12V DC, with total consumption, 10.5 Watts typical Universal power kit- USA, UK, Euro, JPN
	Shock and Vibration	3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B (RF), PTCRB, GCF with Intel AC7260 WIFI Card and Telite HE910G 3G module) CE/FCC Class B (w/o RF) with bare bone only
Safety Certifications	CB, UL, CCC, BSMI, KCC	
Digital Enterprise Connect Edge Software	Southbound connectivity	Modbus TCP/IP master
	Northbound connectivity	Mutual Transport Layer Security (TLS)
	Data buffering in case of lost connectivity	Up to 4,000,000 messages for e-mesh Monitor standard plan
	Provisioning Service	Device Provisioning Service (DPS) dedicated to ensure only legitimate Edge devices can connect to the cloud side
	Services	Remote software and configuration updates for site edge (Optional)
Extensions	Flexible edge architecture allowing future extensions (on demand)	
Security	Secure Storage	Trusted Platform Module (TPM)
	Isolation of Interfaces	Using firewall rules
	Outbound connections	All communications are device initiated and no direct access from public internet
	Secure and Authenticated connections	Server authentication for edge to cloud communications
Environmental	System Inlet Temperature - Extended Operating	-20°C to 60°C (-4° to 140°F) at sea level with extended temperature peripherals
	System Inlet Temperature - Non Operating	-40° to 60°C (-40° to 140°F)
	Relative Humidity – Operating	5 to 95% relative humidity (Rh), 40°C (104°F) maximum wet bulb temperature, non-condensing
	Relative Humidity – Non Operating	5 to 95% relative humidity (Rh), 40°C (104°F) maximum wet bulb temperature, non-condensing
	Acoustic Noise	None - Passively cooled solution with solid state drives

e-mesh Monitor Cloud Instance		
Device Twin	Compatible information models	Fully Integrated with e-mesh Control, e-mesh PowerStore Generic information models solar PV, wind energy, battery energy storage system, conventional generators, power meter, utility connection and weather station
	Additional information models	Easy to extend to other equipment information representation (on demand)
	Compatibility	Supported browsers: Chrome, Firefox, Safari, Microsoft Edge Devices with supported browsers: PC, Laptops, Tablets, and Mobile phones
Data archiving	Historical data archiving	Standard plan up to 18 months at 10 mins averages – extra durations on demand
Security	Authentication policies	Tokens for user and applications authentication
	Authorisation policies	Role-based access control (RBAC) system, and Active Directory Integration
	REST APIs Security	Exposed only over HTTPS protocol
Localisation	Display Language	English, other languages on demand
DevOps	Services	Remote support and updates, remote edge services (on demand)
	Continuous Integration and Delivery	Automatic upgrades while subscribed

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