



# iX10

Intelligent Facility Management System



**DAXView iX10** is an advanced facility monitoring and fault detection system. IoT Cloud ready to scale from a small number of in building nodes, to a large number of distributed nodes across country wide. Expandable to support diverse range of monitoring endpoints.

Timely notification of equipment fault is the key in managing facility KPI to prevent unplanned service downtime. The DAXView iX10 is designed to be easily integrated to electrical and environmental monitoring infrastructure and provide advanced remote monitoring functions in a compact package size.

Equipment faults are unpredictable and proactive resolution can be applied before problem strike. The iX10 provides a continuous data collection from power meters, water meters, protection relay and environment sensors to build a long-term energy & behavioural profile of the facility. Fault incident, tripping of circuit breaker, abnormal sensor level are detected immediately by iX10 which sends SMS and Email alert to the operation team. Events are logged into memory and allow user to review at a later time.

### Intelligent FMS

- Real time event notification
- Equipment operation trend logging
- Anomaly pattern pre-fault detection
- IoT Cloud ready
- MH Protection Relay integrated

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## HMI with cloud capability



The iX10 is an industrial compact computer with a rich sets of on-board digital input/output, analog input/output, Modbus RTU and Ethernet TCP network communication interface. Industrial grade mobile network gateway that supports multi-channel sending are used in the iX10 to connect to 3G/LTE/4G network to deliver alert SMS and email. An integrated UPS supply ensure that all alert SMS will be sent regardless of main utility power supply condition. The high contrast ruggedized IP65 rated touch screen display allow local operator to read live system status, review historical event log and download trend report on to a removable storage. The iX10 can operate as a standalone local unit or as a networked intelligent remote node when it is configured with the iX10-Cloud Enabled option.

When the DAXView iX10 connects to our DAXView-1000 Cloud Service, the iX10 remote node become part of an intelligent analytic network which predict fault before it happens. Data are consolidated by the iX10 data uplink buffer and batch uploaded via secured encrypted protocol to reduce network transmission traffic load and prevent network attack. These data are fed to the DAXView-1000 IoT Cloud Server which perform Machine Learning algorithm to pick up anomaly pattern. The DAXView-1000 automatically learn and reviewing these anomaly pattern and notify the operation team on early signs of equipment malfunction before it develops into a disruption. The DAXView-1000 IoT Cloud Service can be licensed as a hosted service or on premise hardware solution.

### Industrial Grade

- IP65 protection level touch screen HMI
- Redundancy SIM auto failover backup mobile network
- OPC/ MQTT/ RESTapi open protocol (Cloud enabled service)
- Integrated UPS ensuring reliable SMS notification during mains supply failure



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## Integrated function with MH Protection Relays



The iX10 is designed to be natively compatible with MH range of Protection Relay products with the following models:

- REA 200n
- ROA 052n
- REF 207n
- EF18
- ELR
- OUV400

The MH protection relay provide comprehensive coordinated fault detection with the following functions:

- ANSI 51 Time delay Overcurrent
- ANSI 50 Instantaneous Overcurrent
- ANSI 51G Time delay Earth Fault
- ANSI 50G Instantaneous Earth Fault
- ANSI 59 Over-Voltage
- ANSI 27 Under-Voltage
- IEC 60755 Earth Leakage–Type A, AC

The system also complement with the MTB mechanical reset button feature, ANSI 86 Lockout Relay function, by preventing accidental remote reset. A human must perform manual reset at the relay to confirm normalization before energizing of a breaker.

iX10 is designed to communicate with the MH protection relay via Modbus or Output Contact from the relay. Live reading via Modbus are accessible from the HMI screen.



**MH Protection Relay integration with iX10**

- Logging of trip event with fault details
- Event time stamp synchronized to NTP
- Live status of relay
- Modbus communication or contact output status

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## Intelligent Facility Management System



### DAXView iX10 technical specification:

Functional and System Features	iX10	iX10 (Cloud enabled)
<ul style="list-style-type: none"> <li>Industrial Touch Screen computer system with 1.2GHz 64-bit Quadcore ARM Cortex-A53 processor running Linux OS</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>10" Resistive Touch Screen LCD display (1024x600 resolution) other resolution size available upon request</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>1GB RAM, 16GB Flash Disk</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>On-board Real Time Clock with NTP time sync</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>11x On-board Digital Input</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>11x On-board Digital Output</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>4x On-board Analog Input</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>2x On-board Analog Output</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Expandable with external module x64 Di</li> </ul>	Optional	Optional
<ul style="list-style-type: none"> <li>Expandable with external module x64 Do</li> </ul>	Optional	Optional
<ul style="list-style-type: none"> <li>Expandable with external module x32 Ai</li> </ul>	Optional	Optional
<ul style="list-style-type: none"> <li>Expandable with external module x16 Ao</li> </ul>	Optional	Optional
<ul style="list-style-type: none"> <li>1x Ethernet RJ45</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>3x USB.20</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>1x RS485</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>1x RS232C</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Piezo sound buzzer</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Audio Jack Output</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Ultra-capacitor UPS power backup (15years maintenance free)</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Water Resistance Rating of Touch Screen Display</li> </ul>	IP65	IP65
<ul style="list-style-type: none"> <li>Operating temperature &amp; humidity</li> </ul>	0°C~50°C 95%RH	0°C~50°C 95%RH
<ul style="list-style-type: none"> <li>SMS Auto Paging</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Email Sending</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>WiFi Access Point IEEE802.11b/g/n</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>Mobile 3G/4G router with Firewall/ DDNS function with dual SIM auto failover switching (Dual mobile SIM router optional)</li> </ul>	Standard	Standard
<ul style="list-style-type: none"> <li>DDC communication protocol</li> </ul>	Modbus (standard)	Modbus/ RESTful/ MQTT/ OPC-UA
<ul style="list-style-type: none"> <li>Optional DDC protocol support BACnet / RESTful / OPC-UA / MQTT</li> </ul>	Upon request	(standard)
<ul style="list-style-type: none"> <li>Anomaly Pre-Fault Detection</li> </ul>	Not Available	Standard
<ul style="list-style-type: none"> <li>Centralized Remote Device Management</li> </ul>	Not Available	Standard
<ul style="list-style-type: none"> <li>Centralized Data Warehouse supporting async data pull</li> </ul>	Not Available	Standard
<ul style="list-style-type: none"> <li>Cloud Dashboard consolidated network view</li> </ul>	Not Available	Standard
<ul style="list-style-type: none"> <li>Event Acknowledgement and Workflow Assignment tracking</li> </ul>	Not Available	Standard
<ul style="list-style-type: none"> <li>Power supply</li> </ul>	230VAC 50Hz 2A	230VAC 50Hz 2A
<ul style="list-style-type: none"> <li>Enclosure weight</li> </ul>	12kg	12kg
<ul style="list-style-type: none"> <li>Enclosure dimension</li> </ul>	400mm (width) 600mm (height) 200mm (depth)	400mm (width) 600mm (height) 200mm (depth)
<ul style="list-style-type: none"> <li>Installation</li> </ul>	Wall/ Panel Mounting	Wall/ Panel Mounting
<ul style="list-style-type: none"> <li>Epoxy powder coated steel enclosure for wall mounting c/w lockable swing door</li> </ul>	Standard	Standard

**Note:**

DAXView iX10 Cloud Enable model require the software license of DAXView-1000 Cloud Server to perform the IoT functions. Please contact our solution team for a product walk through and a license offer proposal to suit your needs.

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