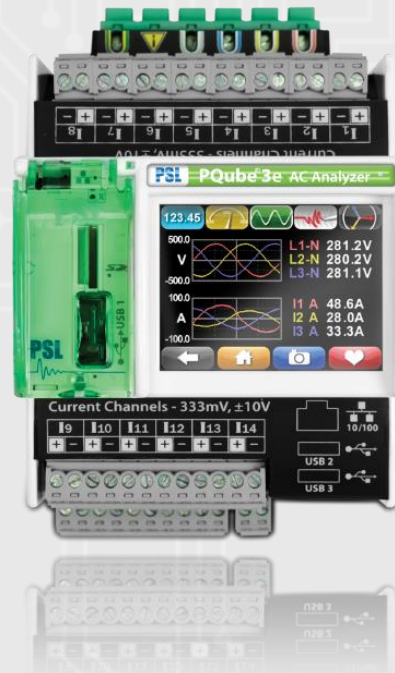


 **PQ-CT[®]** with
PQube3 series for
AC/DC Power Quality Monitoring



INDEX

- J&D Introduction
- New PQube 3 series – PQube 3e
- PQube 3 installed for power quality monitoring
- PQ-CT – suitable for PQube 3 series
- PQube 3 series future in South Korea

J&D INTRODUCTION

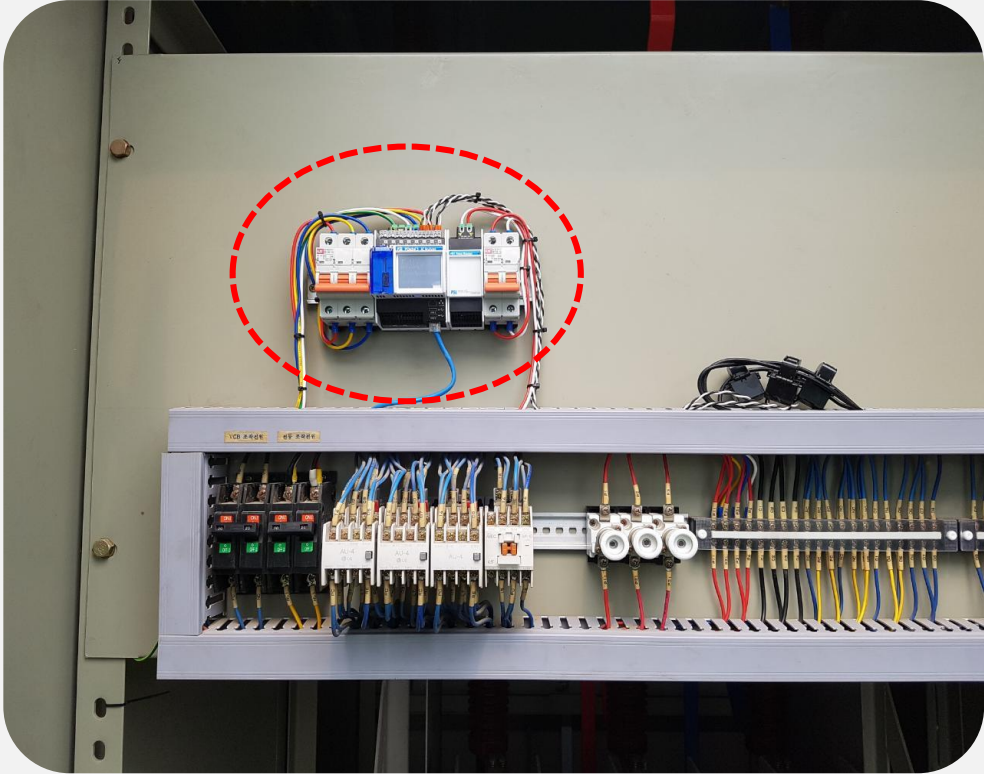
- Established in 1994, expert manufacturing for current & voltage sensors, smart meters, power quality meter in South Korea.
- To be a market leader, recently J&D starts JAGUAR IoT TEAM for energy saving monitoring – JAGUAR brands for power quality meter, PQ-CT the high precision current sensors and PQ-VT the high performance voltage sensors.

New PQube 3 series

PQube 3e

- The ultra-accurate power quality analyzer with Class A certification as per IEC 61000-4-30 Edition 3
- Can be used to monitor four 3-phase loads, 14 single-phase loads, or any combination.
 - ▶ Measuring range: 1A – 6000A
- Various measuring parameters; sag, swell, voltage interruptions, harmonics up to 50th, THD, flicker, imbalance, in-rush currents, 4-quadrant energy, etc.
 - ▶ High-frequency sampling up to 4MHz for impulse detection and event triggered recording features for most of the parameters.
- Communication: Ethernet with various protocols– Modbus TCP, SNMP, FTP/HTTP, NTP/SNTP, FTPS and HTTPS.

PQube 3 installed for power quality monitoring



PQ-CT suitable for PQube 3 series



- **For AC current: JPS series**

- ▶ Wide range of rated current: 5A – 1600A
- ▶ Accuracy class 0.2S / 0.5S / 1.0 class under IEC 61869-2, 0.3 / 0.6 / 1.2 class under IEEE/ANSI C57.13
- ▶ UL 61010-1 Listed – CAT IV 600V
Pollution degree 3 (Altitude 3000m)
- **First** certified product above specs in the world

PQ-CT suitable for PQube 3 series



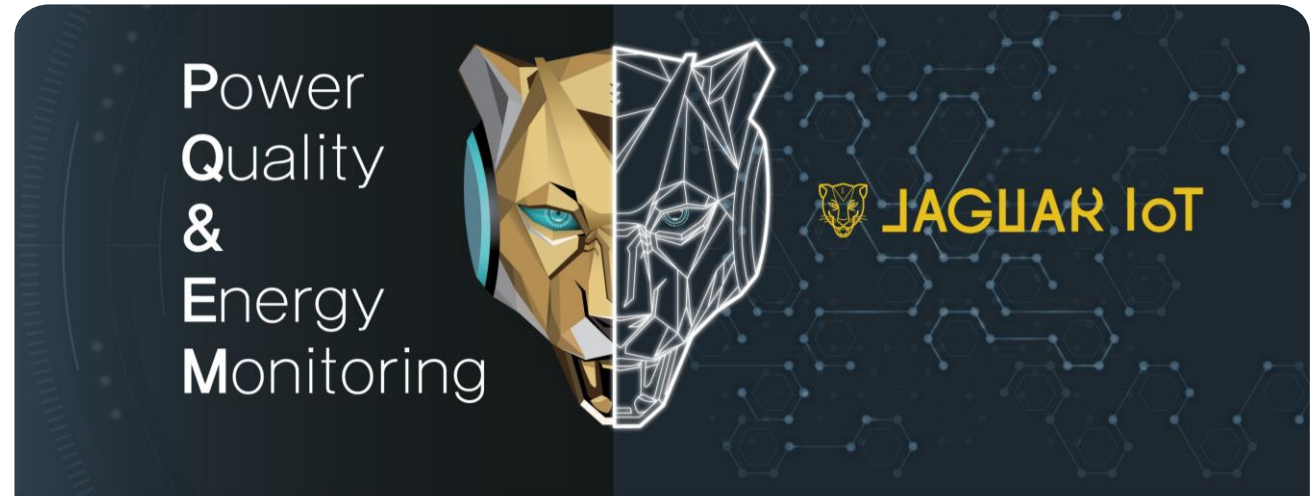
- For AC/DC current: **JPS-XXX-NH series,**
JHAO-XXXXSD series
 - ▶ Using hall element to enable for AC or DC current measuring
 - ▶ JPS-XXX-NH is available for precise measuring without DC influence and harmonics for AC power quality monitoring
 - ▶ JHAO-XXXXSD is using for high current, especially DC power metering

PQube 3 series Future in South Korea

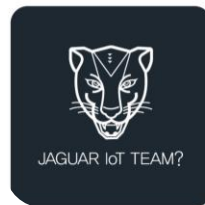
- J&D launched JAGUAR IoT brand for power quality and energy saving. Make “IoT” solution via LTE Cat.M1 communication – customers can see the data even through cell phone.
- On May 31, JAGUAR IoT has been introduced at Korean Seminar, and has been noticed including PQ3 series.



JAGUAR IoT Power quality & Energy saving monitoring platform

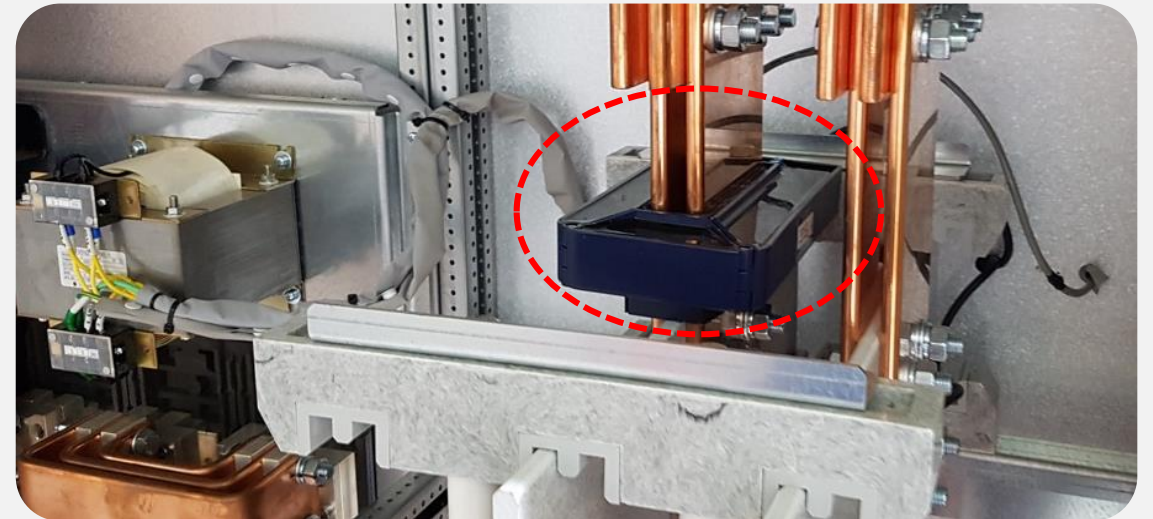


PQ3 series
will be announced as
power quality monitoring solution for
KEPCO Energy market platform 4.0
in October 2018



PQube 3 series Future in South Korea

- PQ3 series is optimized for UPS, PV energy, ESS and Power quality monitoring market – Now starting to grow its share in the market
- DC1500V and DC3000A is popular spec for ESS (Energy storage systems) application in Korea
- PQ3 will be installed with **JHAO-XXXXSD** / JPS-XXX-NH series into SAMSUNG and LSIS.



PQube 3 series

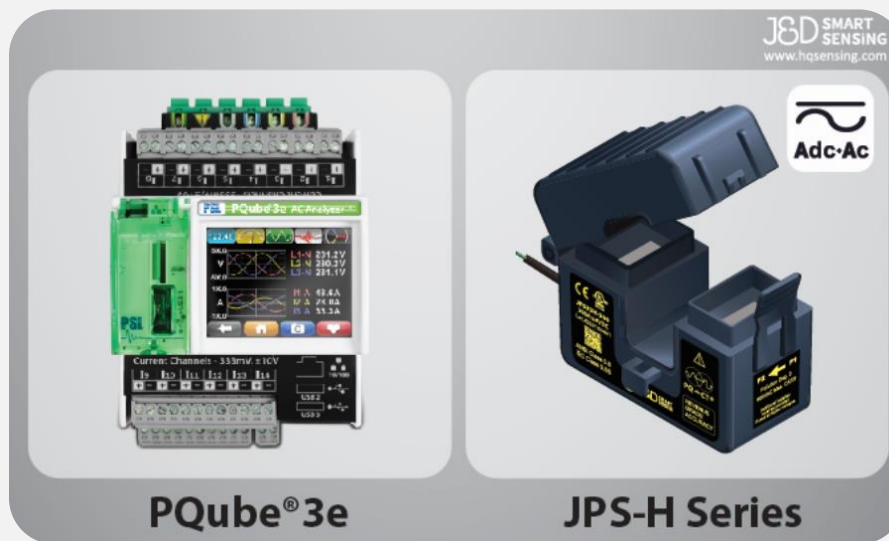
Future in South Korea

- Power quality will be the most important factor for Korean Microgrid especially for EV charging, PV Energy, Inverter, etc.
 - ▶ Korean government will support Electric vehicle industry, EV charging system will be supported as well.
 - ▶ DC Microgrid will be growing, connected to PV Energy, Battery and Inverter/motor monitoring, etc.
- For power quality monitoring, PQ3 series + JPS-XXX-NH series would be the best solution – JPS-XXX-NH series is free from DC tolerance.

PQube 3 series Future in South Korea

Be together for Data center / PV energy / PCS / Battery / ESS / UPS / Inverter.....

PQ3 series with PQ-CT series will be the market leader



2017 metering issue:

<http://hqsensing.com/news/jps-series-delivers-the-best-certified-power-analysis-in-combination-with-pqube-3e/>

Thank you

J&D SMART
SENSING