

# No. 1 IEC61850 Industrial Networking Solution Provider

## About KEMA / DNV GL

KEMA was founded in 1927 as the Dutch electricity industry's Arnhem-based test house, providing electrical safety testing and certification services. KEMA offered management and technical consulting, operational support, measurements & inspection, testing and certification services to the energy value chain. KEMA was a key member of IECEE and GENELEC, well acknowledged by Siemens, ABB, Alstom...etc. A KEMA tested device is regarded rugged & robust by most of the utility companies.

On 22 Dec. 2011, DNV (founded in 1864) acquired 74.3% of KEMA's shares, while on 12 Sep. 2013, DNV and GL merged into DNV GL, becoming the world's largest ship and offshore classification society and a world-leader of consulting and certification services for cleaner energy, sustainability, power generation, transmission and distribution sectors.

KEMA / DNV GL has >15,000 employees including 2,500 energy experts. It is the most reputed & worldwide recognized IEC61850 & IEEE1613 testing & certification organization.



## IEC61850 & IEEE1613 Industrial Ethernet Switches



### SICOM3024P

- ▼ Max. 24+4G Tx or Fx ports, Layer 2
- ▼ Operating Temp. -40°C to 85°C
- ▼ >100,000pcs installed in State Grid of China
- ▼ >5,000pcs by Schneider, Honeywell, Toshiba, ABB, SEL
- ▼ IEC 61850-3 and functional test by KEMA in 2008
- ▼ Authentic dual redundant power supply



### SICOM3028GPT

- ▼ Max. 24+4G or 28G, Layer 2 or Layer 3
- ▼ Modular design: Ethernet, Fiber, Serial, GPS, IRIG-B, PTP over E1/T1, HSR/PRP, TMS-Trigger
- ▼ Supports Hardware-based IEEE1588v2 (T model)
- ▼ Operating Temp. -40°C to 85°C
- ▼ >1,000 pcs installed & operating in Uruguay
- ▼ IEC 61850-3 and functional test certified by KEMA in 2016



### SICOM3009A

- ▼ Max. 6TX+3FX ports, Layer 2
- ▼ 24/48/220V power input
- ▼ Operating Temp. -40°C to 85°C
- ▼ IEC61850-3 and functional test certified by KEMA in 2016



GPT-GPS Module



GPT-IRIG-B Module



GPT-PTP over E1/T1 Module



### SICOM3000

- ▼ Max. 8+2G ports, Layer 2
- ▼ 24/48/220V power input
- ▼ Operating Temp. -40°C to 85°C
- ▼ IEC61850-3 and functional test certified by KEMA in 2016



GPT-HSR/PRP Module



GPT-Serial Device Server Module



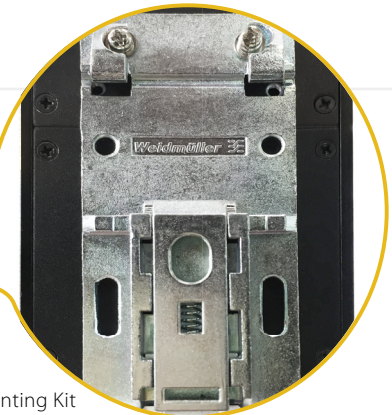
TMS-Trigger Module

### SICOM3000A

- ▼ Supports 6/8/16T, 2SFP/2GX8T, 4SFP/4GX8T, 8GE, 2GX/4GX8GE16GE, 2GX/4SFP/4GX16T, 2GX/4GX16GE, 8SFP/8GX8T, 8GX/12GX8GE
- ▼ Supports Hardware-based IEEE1588v2
- ▼ Supports EtherNet/IP and Modbus/TCP protocols
- ▼ Supports Auto-Config. Backup tool KyACB
- ▼ 12/24/48/110/220V power input
- ▼ IEC61850-3 test is in progress by KEMA

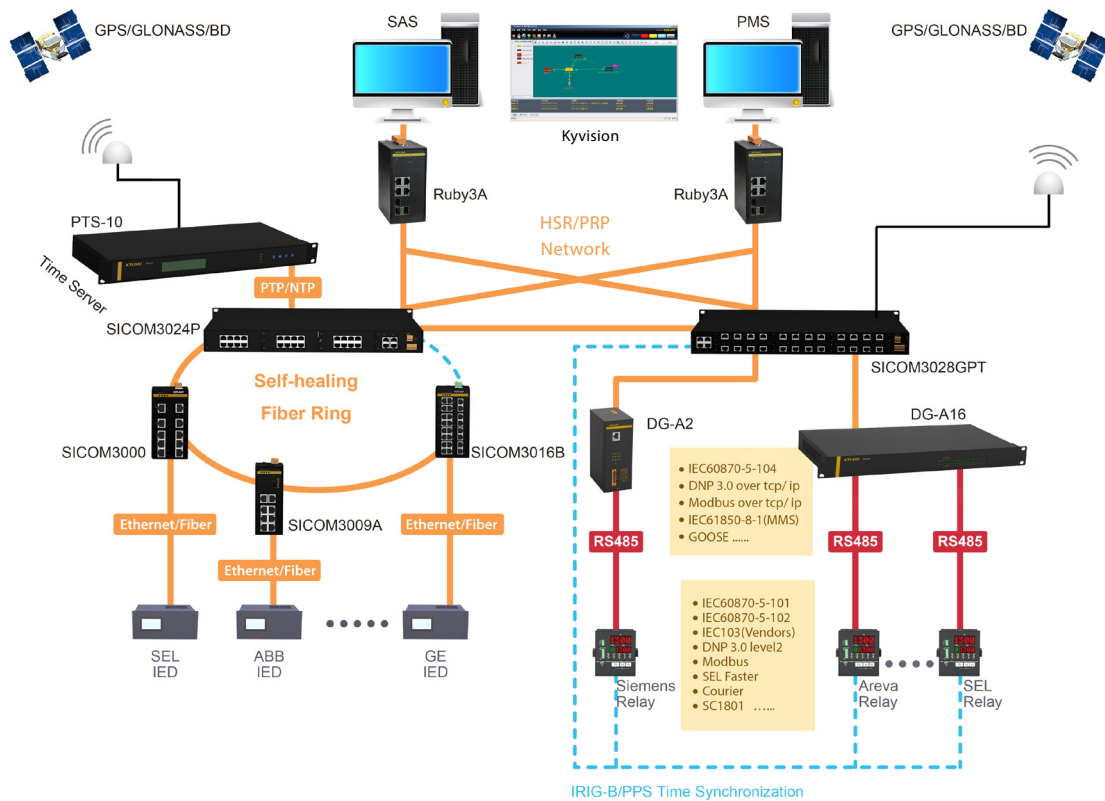


Robust DIN Rail mounting Kit



# IEC61850 Protocol Conversion & Time Synchronization

Kyland DG series Gateway, FRTU and PTS series Time Server are the most sophisticated solutions for smart substation and power distribution systems.



## DG-A2/A4/A8/A16 Smart Gateway



- ▼ Up to 8\*RS232/485+8\*485 ports
- ▼ 1,2 or 4\* 10/100M TX ports
- ▼ 12-24VDC/85-264VAC Power input
- ▼ Supports Modbus-RTU, Modbus-TCP, DNP3, IEC60870-101/103/104
- ▼ Supports IEC61850 MMS/GOOSE
- ▼ Optional 3G connectivity and CAN bus
- ▼ Supports Micro SD (except A2)
- ▼ Operating Temp. -40°C to 85°C

## PTS-DR200 and PTS-10/30 Time Server



- ▼ GPS, GLONASS or BD time source
- ▼ OCXO or Rubidium oscillator
- ▼ PTP, NTP, IRIG-B, Serial or PPS/PPM/PPH output
- ▼ Time Monitoring & Management: IEC61850, IEC60870-104, DNP3 or SNMP
- ▼ PTS-DR200: 24/48VDC or 110/220VDC/VAC
- ▼ PTS-10/30: 48VDC or 110/220VDC/VAC
- ▼ Operating Temp. -20°C to 70°C

## Kyvision (Element Management Software)



- ▼ Supports up to 1,000 devices
- ▼ Supports 10 users simultaneously
- ▼ Supports SNMP v1/v2c/v3
- ▼ Auto-topology for any devices support LLDP
- ▼ Supports real-time event alert

## Ruby3A Redbox



- ▼ Supports IEC62439 PRP/HSR
- ▼ Supports 3G Combo Ports
- ▼ Supports Hardware-based IEEE1588v2
- ▼ Supports 24-48VDC or 110/220VDC/VAC
- ▼ Complies with IEC61850-3 and IEEE1613
- ▼ Supports PRP/HSR Coupling
- ▼ Supports Quadbox
- ▼ Operating Temp. -40°C to 85°C

## About Kyland

Kyland was founded in 2004 and listed in Shenzhen Stock Exchange since 2012 (SZSE code: 300353). It is dedicated to Industrial Internet Communication & Controlling Solutions. Kyland is the No.1 Industrial Ethernet Switch Supplier in China, products installed and operating in power, rail, oil & gas, military...etc. all mission critical industries.

Kyland is also well recognized by IEEE1588 WG and successfully held the ISPCS 2015 event in Beijing (<http://www.ispcs.org/2015/index.html>).