

# IEC 61850-3

## Ethernet Switch

- IEC61850-3, IEEE1613
- Zero packet loss
- Wide operating temperature : -40~85°C
- IEEE1588 PTP v2
- GOOSE Message



In power substation environments, where electromagnetic interference is very high, the IPS series of Ethernet switches, complying with IEC61850-3 and IEEE 1613 standards, are especially designed for power substation. In smart grid applications, zero packet loss must be maintained with wide temperature tolerances to ensure reliable packet transmissions.

IP30 rugged metal housings and special heat dissipation design enable IPS series Ethernet switches to operate normally under extreme weather conditions without suffering failures.

### ■ GOOSE Message

For mission-critical applications, GOOSE messages can be placed into the highest QoS priority so as to avoid packet loss and delay.

- IPS series Ethernet switches can communicate with GOOSE multicasts.
- Critical communications are prioritized with the highest QoS priority.
- Achieve zero packet loss to ensure reliable transmissions.



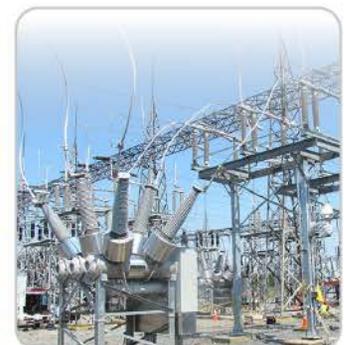
Hydroelectric  
Power Stations



Wind Power Plant



Solar Energy  
Power Plant



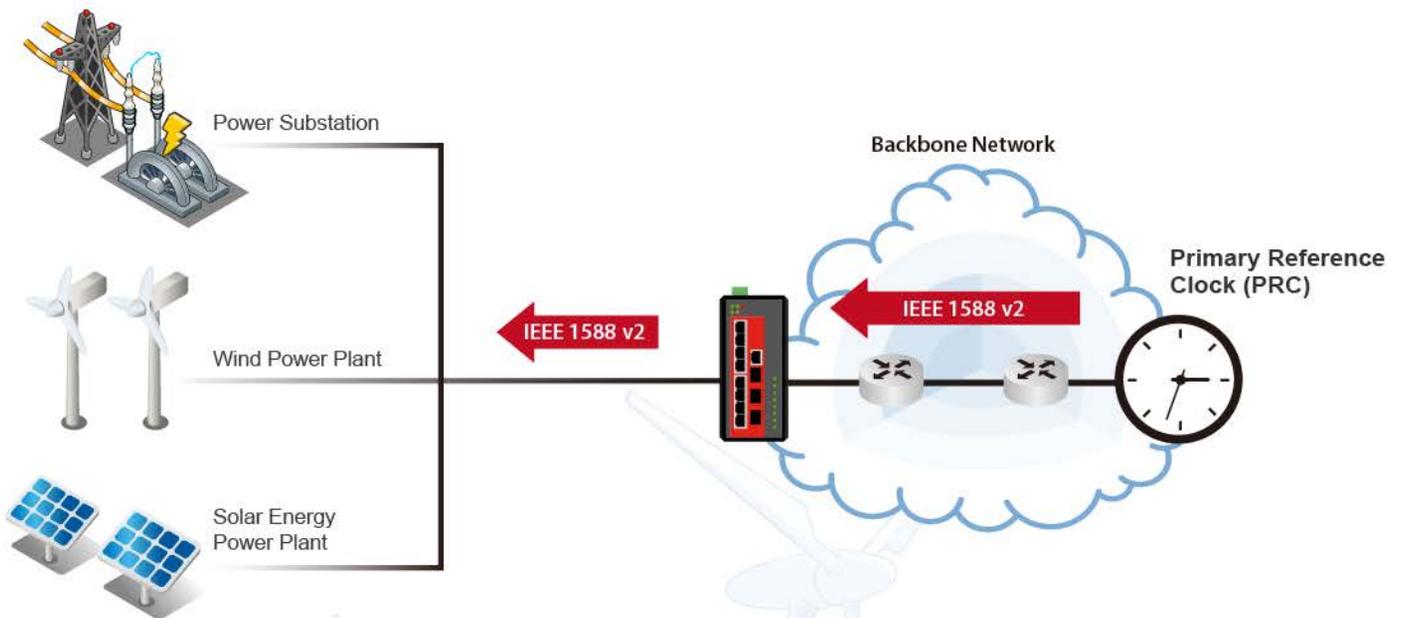
Power Substation

## ■ IEEE1588 PTP V2

Ethernet equipment has become a widely accepted commodity as it replaces traditional and expensive legacy technology. The multitude of nodes needed to be synchronized as precisely as possible over the network are ever increasing. IEEE1588 PTP V2 is a packet based network protocol that carries time stamps in Ethernet format. The applications requiring this technology fall within the major markets for smart grids and telecommunication networks.

Supports 5 operating mode :

- Ordinary-Boundary
- Peer to Peer Transparent Clock
- End to End Transparent Clock
- Master
- Slave



IEEE 1588 PTP v2 Application in Power substation & Smart Grid