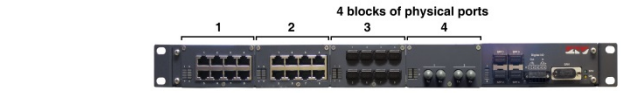
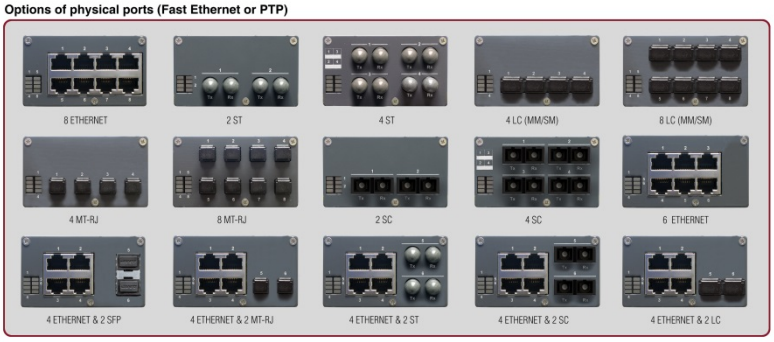
SWT
L2/L3 PTP

Gigabit/Fast Ethernet Switch

e-NET comms



Options of physical ports (Fast Ethernet or PTP)



The SWT is a Gigabit/Fast Ethernet switch specially designed to perform switching functions (L2) and IPv4 routing functions (L3).

It is also designed to meet the standards IEC 61850-3 and IEEE 1613 for the automation of electrical substations.

The SWT is a highly flexible device that allows different number and type of ports to be selected.

The SWT supports standard IEEE 1588v2 clock synchronization (Precision Time Protocol).

SWT technology

The SWT supports the **SNMPv1**, **SNMPv2c** and **SNMPv3** management protocols, the **RIPv1**, **RIPv2, OSPFv2** and **BGPv4** routing protocols, the **VRRP** redundancy protocol, as well as other protocols and services such as **GARP/GMRP, IGMP, DHCP, NTP, TACACS+** and **RADIUS**.

The SWT not only complies with the STP and RSTP protocols for resolving loops in the network and operation in rings, but it also exceeds the recovery times obtained through said protocols.

Main applications

- **Level 2** capabilities enable deployment of big scale LANs when the main requirements are: port density, switching performance, and logical complexity.
- **Level 3** capabilities offer routing functionality between two or more configured VLANs, with each VLAN being made up of a set of local ports (Ethernet and Gigabit Ethernet).

Equipment interfaces

- 1 service console (DCE mode).
- 1 I/O connector.
- 4 front or rear Gigabit Ethernet SFP bays (copper and fiber).
- Up to 32 front or rear Fast Ethernet ports type 10/100Base-Tx (RJ-45), 100Base-Fx (MT-RJ, ST, SC and LC) and 100Base-Lx (LC SM) or Up to 24 front or rear IEEE 1588 (Precise Time Protocol) ports.
- Redundant power supply.
- Up to 8 electrical PoE ports (4 & 4).

Main facilities

- Full Duplex Wired Speed switching core. Port speed automatic detection. STP and RSTP. Multiple VLANs management (250 simultaneously). QoS. Broadcast and Multicast traffic limitation. MAC access control lists and 802.1x user authentication. Q-in-Q operation (double-tagged). Link aggregation by LAG function (static). Port mirroring. Links in VLAN Native mode. Interoperability with IEDs that complies with IEC 61850. Traffic filtering (ACL) and firewall.
- Compatible with standard IEEE 1588v2 clock synchronization (Precision Time Protocol) in Transparent Clock (TC) E2E and P2P mode.
- L3 routing protocols (RIPv1, RIPv2, OSPFv2, BGPv4).

Management system

- HTTP graphical web-based, SSL.
- SNMP v1, v2c, v3.
- Telnet, VT100, SSH.
- Command Line Interface (CLI).
- RSA Key Management.
- Authentication and Accounting - TACACS+ (encrypted), RADIUS client.

Additional services

- GARP/GMRP, IGMP, DHCP, NTP, VRRP.

Technical Information

Fast Ethernet ports	Up to 32 ports resulting from: ➢ 8, 16, 24 or 32 ports 10/100Base-Tx (RJ-45). Up to 8 PoE ports (4 & 4). ➢ 4, 8, 12, 16, 20 or 24 ports 100Base-Fx MM (MT-RJ). ➢ 2, 4, 6, 8, 10, 12, 14 or 16 ports 100Base-Fx MM (ST or SC). ➢ 4, 8, 12, 16, 20 or 24 ports 100Base-Fx MM (LC). ➢ 4, 8, 12, 16, 20 or 24 ports 100Base-Lx SM (LC SM).
IEEE 1588 (PTP) ports	Up to 24 ports resulting from: ➢ 6 ports 10/100Base-Tx (RJ-45). ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 Gigabit Ethernet SFP bays. ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 ports 100Base-Fx MM (MT-RJ). ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 ports 100Base-Fx MM (LC). ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 ports 100Base-Lx SM (LC SM). ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 ports 100Base-Fx MM (ST) ➢ 4 ports 10/100Base-Tx (RJ-45) & 2 ports 100Base-Fx MM (SC)
Service port	➢ DB9 female connector in DCE mode. Speed of 115200 bit/s
Mounting	➢ Stand-alone (19”/1 s.u. chassis). ➢ Dimensions: Height: 44 mm; Width: 445 mm; Depth: 283 mm. ➢ Weight: 3.4 kg
Power supply	➢ 36-72 V_{DC} (48 V_{DC} nominal) or multirange (80-360V_{DC}, 80-260V_{AC}) ➢ Max. consumption at 48 V_{DC}: 40 W ➢ Redundant power-supply option
Temperature range	From -25° C to +70°C
Material	Grey (RAL 7024) zinc-plating iron
EMI immunity & environment compliance	IEC 61850-3. IEEE 1613. IEC 61000-6-5.

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