

AGENT-2 S42R



IEC61850/IEEE1613 Modular Managed 24-port 10/100BASE + 4-port GbE Advanced Ethernet Switches with SFP options



Modular design

Overview

IEC61850-3 & IEEE1613 Certified for power substation applications, this Line of Modular Switches comes with a combination of twenty four 10/100BASE-TX/FX/BX ports split in three slots – with up to eight ports in every slot –, plus four 10/100/1000BASE-TX and/or Gigabit SFP combo (1000BASE-SX/LX/BX) ports in a package. This Line of Switches functions at temperatures ranging from -40°C to 85°C (-40°F to 185°F). Fully manageable via SNMP, Web Browser, Telnet or Console port, this Line is designed to integrate 10/100Mbps networks into fibre optic Gigabit backbones. Four Gigabit SFP combo ports can be fibre optic or copper ports. This Line also supports Snooping, Multiple and Rapid Spanning Tree for Redundancy, QoS for priority queuing, and port mirroring. Users may choose among SNMP RMON, Web browser or Telnet for remote monitoring and configuration. It also supports rate control, which allows users to set the maximum bandwidth on each port individually.

Features

- Complies with IEC61850-3 & IEEE1613 Environmental requirements for power substation automation Systems
- Complies with EN50121-4 environmental requirement for Railway application
- Supports RSTP/MSTP/STP for Ethernet redundancy and GOOSE Message
- Zero Packet Loss pass by GOOSE Message
- IP Multicast Filtering through IGMP Snooping V1, V2 & V3
- Port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP
- IEEE802.1p QoS with four priority queues
- MAC-based trunking and LACP
- IEEE802.1x Security
- Bandwidth Rate Control
- Per-port programmable MAC address locking
- Up to 24 Static Secure MAC addresses per port
- Port mirroring
- NTP synchronization time
- DHCP Client/Server
- RS-232 Console, SSL, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- Full wire-speed forwarding rate
- -40°C to 85°C (-40°F to 185°F) operating temperature range
- Supports NTP

Technical specifications

Technology

Standards

- ▶ IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX/100BASE-FX, IEEE802.3ab 1000BASE-T, IEEE802.3z 1000BASE-SX/1000BASE-LX, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1x

Forward and Filtering Rate

- ▶ 14,880pps for 10Mbps
- ▶ 148,810pps for 100Mbps
- ▶ 1,488,100pps for 1000Mbps

Packet Buffer Memory: 3M bits

Processing Type

- ▶ Store-and-Forward
- ▶ Half-duplex back-pressure and IEEE802.3x full-duplex flow control

Address Table Size: 8192 MAC addresses

Power

Input

- ▶ (T): +/-48VDC(36~75VDC) Internal Universal PSU
- ▶ (W): 88~370VDC and 90 ~ 264VAC Internal Universal PSU
- ▶ (C): 90~264VAC, 50 ~ 60Hz Internal Universal PSU

Power Consumption: 42.7W Max.

Overload Current Protection: Present

Mechanical

Casing: Metal case; IP 30

Dimensions

- ▶ Single Power: 442mm (W) x 343mm (D) x 44.2mm (H)
- ▶ (17.4" (W) x 13.5" (D) x 1.74" (H))

Weight: 4.5Kg (9.9lbs.)

Installation: Rack Mounting

Interface

Ethernet Port

- ▶ 10/100BASE-TX: 24, 16, 8 or 0 ports
- ▶ 100BASE-FX: 0 to 18 ports
- ▶ Gigabit: 0, 2 or 4 ports

Console Port: One DB9 RS-232 port

LED Indicators

- ▶ Per Unit: Power Status
- ▶ Per Port: 10/100TX, 100FX: Link/Activity (Green)
10/100/1000TX, 1000SX/LX: Link/Activity (Green)
SFP Selected: Selected/Unselected (Green)

Environment

Operating Temperature: -40°C to 85°C (-40°F to 185°F)

Storage Temperature: -45°C to 85°C (-49°F to 185°F)

Ambient Relative Humidity

5% to 95% (non-condensing)

Regulatory Approvals

ISO: Manufactured in an ISO9001 facility

Safety: UL60950-1

EMI:

- ▶ **FCC Part 15, Class A**
- ▶ **EN61000-6-4**
EN55022
EN61000-3-2
EN61000-3-3

EMS: EN61000-6-2

- ▶ **EN61000-4-2** (ESD Standards)

Contact: + / - 8KV

Air: + / - 15KV

- ▶ **EN61000-4-3** (Radiated RFI Standards)

35V/m, 80 to 1000MHz, 1400 to 2000MHz, 2000 to 2700MHz; 80% AM

- ▶ **EN61000-4-4** (Burst Standards)

Signal Ports: + / - 4KV

A.C. Power Ports: + / - 4KV

- ▶ **EN61000-4-5** (Surge Standards)

Signal Ports: + / - 4KV; Line-to-Earth

A.C. Power Ports: + / - 4KV Line-to-Earth

D.C. Power Ports: + / - 2KV Line-to-Earth

- ▶ **EN61000-4-6** (Induced RFI Standards)

Signal Ports: 10Vrms @ 0.15 - 80MHz; 80% AM

A.C. Power Ports: 10Vrms @ 0.15 - 80MHz; 80% AM

D.C. Power Ports: 10Vrms @ 0.15 - 80MHz; 80% AM

- ▶ **EN61000-4-8** (Magnetic Field Standards)

1000A/m @ 50, 60Hz

- ▶ **IEC61000-4-10** (Oscillatory wave magnetic field test)

100kHz and 1MHz : 30A/m

- ▶ **IEC61000-4-16** (Power frequency immunity test) 50Hz: 300V

- ▶ **IEC61000-4-18** (Oscillatory wave immunity test):

100 kHz, 2.5kV CM and 2.5kV DM

1MHz, 2.5kV CM and 2.5kV DM

- ▶ **IEEE1613:** power frequency withstand voltage: 2KV, Insulation resistance >550 MOhm

RJ45 Port 500V, Insulation resistance >550 MOhm

Impulse voltage: 5Kv, Insulation resistance >550 MOhm

- ▶ **IEC60870-2-1:** AC/DC power supply voltage variations

Environmental Test Compliance

- ▶ IEC60068-2-6 Fc (Vibration Resistance)

1g @ 10 - 150Hz, Amplitude 0.35mm

(Operation/Storage/Transport)

- ▶ IEC60068-2-27 Ea (Shock)

25g @ 11ms (Half-Sine Shock Pulse; Operation)

50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)

- ▶ IEC60068-2-32 Ed (Free Fall)

1M (3.281ft.)