

# **COMMANDO Scout IE1000 Series Industrial Ethernet Unmanaged Switches Data Sheet**

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### **Product Overview**

COMMANDO Scout IE1000 series Switches consists of Industrial unmanaged switches which are ideal to stand up to extreme temperatures, surges, vibrations, and shocks found in industrial automation, outdoor applications with high power perpetual PoE/PoE+ requirement on all ports of Switch ideal for small to medium-sized businesses, Industrial and outdoor use for Internet cafes, hotels, schools and surveillance purpose which required perpetual PoE/PoE+ for no power downtime on all ports of switch which provides power to network devices like surveillance cameras, network printers, wireless APs and all PoE/PoE+ capable devices support temperature range -40°C to 75°C with IP40 casing. They are easy to install and maintain and provide rich services, helping customers build secure, reliable, and high-performance networks.

It is an economical way for SOHO and Small-to-Medium Businesses (SMB) to take advantage of Gigabit Ethernet speeds with copper/fiber ports as well as PoE/PoE+ with power budget for all ports while reducing energy consumption and minimizing noise. This series switches are available in 4 to 8 Gigabit Ethernet ports and 8 Port SFP model with two 1GE copper or 1G fiber fixed Uplinks having enclosure type Desktop, Rack/Wall mountable- 1U. Designed for operational simplicity to lower total cost of ownership, they enable scalable access layer office and home operations all ports PoE/PoE+ switches.

It can be quickly set up with plug and play with Zero Touch Provisioning. It is SOHO (Small Office/Home Office) Switches, are designed for Small Business Networks, unmanaged Switches empower your growing business instant flexibility with copper as well as fiber ports connectivity along with perpetual PoE/PoE+ reliable performance at a very affordable cost. This switch Giga ethernet high-speed network connectivity, auto-negotiation for optimal speed detection through RJ45 Category 5, 5e or 6 cables and supports up to 250 meters distance for copper cables length.

It can identify and determine the correct transmission speed and half/full duplex mode of the attached devices. It also supports standard Auto-MDI/MDI-X that can detect the type of connection to any Ethernet device without requiring special straight or crossover cables, Store-and-Forward forwarding scheme to ensure low latency and high data integrity.

It supports Energy Efficient Ethernet (EEE), which enables the switch to enter a power-saving mode when traffic is light. Switches can smartly automatically adjust the PoE/PoE+ power output for transmissions based on the cable length for PoE/PoE+ devices connected. It can also set any ports that are not transmitting traffic to sleep mode.

It is an ideal unmanaged switch, designed for Small and Medium Business Networks that require Plug & Play Network Switch. To optimize traffic on your Business Network, COMMANDO offers Portbased/802.1p/DSCP QoS to keep Latency-sensitive traffic moving smoothly and jitter-free. Additionally, port-based, tag-based and MTU VLAN can improve security and meet more network

segmentation requirements. Moreover, with its innovative energy-efficient technology, COMMANDO Switch can save up to 58% of power consumption, making it an eco-friendly solution for your business network.

## **Product Highlights**

- 4 to 8 \* 10/100/1000Mbps Ethernet Ports or 2 Port SFP along with fixed fiber/copper Uplinks and PoE (PoE+) & Non PoE Models.
- Perpetual PoE/PoE+ Provides non-stop PoE/PoE+ power. Switch can continue to provide power during configuration and reboot, the PDs will not lose power while reloading.
- Extra 2 Ports slots with separate, flexible 1GFiber/ 1GE Copper Switchports or Uplinks.
- Enclosure Type Desktop, Rack/Wall mountable 1U.
- Support temperature range -40° C to 75° C.
- Power over Ethernet (PoE)/Power over Ethernet plus (PoE+) models to provide power on all ports to IEEE 802.3af and IEEE 802.3at capable devices including Wireless AP, Bridges, IoT on all ports.
- All ports have PoE/PoE+ capability with 30W PoE budget Per port.
- PD detection will automatically detect and provide required power for your PoE/PoE+ devices.
- Easy Installation, Plug-and-play installation with no configuration required.
- Support Store-and-forward Switching.
- Backplane Bandwidth: Up to 24Gbps.
- MAC address Table: 8000 entries.
- MAC Address Auto-Learning and Auto-Aging.
- All 4 or 8 ports support auto-negotiation and auto MDI/MDIX.
- All ports capable of Gigabit Ethernet connections and provide full speed of data transferring with (Auto-Negotiation/Auto MDI/MDIX) model based.
- DC input power with Surge protection ±6 kV.
- All ports support jumbo frame of size 10000 bytes transmission.
- Plug and Play design simplifies installation with self-adaption.
- Desktop as well standard rack mountable option.
- Fan-less silent design with Small form-factor. Perfect for noise sensitive environments.

- Energy-Saving by Energy Efficient Ethernet (EEE), which enables the switch to enter a power-saving mode when traffic is light.
- Automatically adjust the PoE/PoE+ power for connected PoE devices based on the cable length.
- With Zero Touch Provisioning with Plug and play and no setup.
- Affordable, Easy-to-Use Switches for Small Business Networks, with Zero Configuration Required

### Features and Benefits

## Industrial-grade Ethernet Switches

It is specifically designed to connect devices in network environments that are subject to extreme operating temperatures of -40°C to 75°C along with Vibration and Shock resistant making them ideal for harsh work environments & Outdoor use.

## Perpetual PoE/PoE+

With Perpetual PoE/PoE+, no power downtime to connected PD devices. PD devices remains power ON even when any software process is not running on the switch. Provides non-stop PoE/PoE+ power and continue to provide power during configuration and reboot, the PDs will not lose power while reloading. The Perpetual POE provides uninterrupted power to connected powered device (PD) even when the switch is booting to make it highly available network without any interruptions.

## Compact, Fan-less, silent design

Small form-factor, Fan-less design for silent operation. Perfect for noise sensitive environments.

## Auto MDIX capabilities

Auto sensing/Auto PoE/PoE+ 10/100/1000 ports with auto MDIX capabilities which also removes speed and duplex mismatches automatically as well as covers larger physical distance with copper pairs compared to other brands best switches.

## Easy to Use

COMMANDO Scout IE1000 series switches is easy to use and manage. All switches are Plug-and-Play devices that requires no configuration, so setup is simple and hassle-free. Auto MDI/MDI-X crossover on all ports eliminate the need for crossover cables or uplink ports. Auto-Negotiation on each port senses the link speed of a network device (Either 10, 100 or 1000) and smartly adjusts for compatibility and optimal performance. Its compact size makes it ideal for desktops as well as rackmount with limited space. Dynamic LED lights provide real-time work status display and basic fault diagnosis.

## Robust industrial design

Designed tough for industrial use with IP40 casing, shock and vibration resistance. It can withstand harsh environments with temperature ranges (-40°C to +75°C). Hardened for vibration, shock and surge, and electrical noise immunity.

## PoE/PoE+ Capabilities

It supports all ports with (PoE/PoE+) Power Budget. This series switches smartly adjust IEEE802.3af/IEEE802.3at PoE/PoE+ (up to 30 watts on all ports). All ports in PoE/PoE+ capable switch allows Power-over-Ethernet (PoE /PoE+) to connect and power PoE/PoE+ capable surveillance cameras, Wireless access points, VoIP phones, IoT and all PoE/PoE+ capable devices using just Ethernet cabling and supports distance up to 250m.

## Green Technology

COMMANDO Scout IE1000 Series Switches features the Energy-Efficient Ethernet that can save power. It automatically adjusts power consumption according to the link status to limit the carbon footprint of your network. It also complies with RoHS, prohibiting the use of certain hazardous materials. Besides that, most of the packaging material can be recycled and reused.

## Compact design with flexibility of additional ports

It provides additional deployment flexibility, fiber connectivity with separate extra flexible copper ports or fiber ports options for easy expansion of your networks. So, you can directly connect to a high-performance storage server or deploy a long-distance uplink to another switch.

## Supports uninterrupted critical network infrastructure

It has DC input power which protect from power failures and power surges through their inline power supply automatically and have in build Surge protection of  $\pm 6$ KV. Due to inbuilt DC power this device life is doubled than normal switches. With this feature protect on cost and the impact to your business by losing these network devices and thus the user's PC /servers/cameras connected to them.

## **Cost Efficient**

State of art quality product that can serve on real time high-speed Performance with DC input power which covers larger physical distance with copper pairs compared to other brands best switches and are highly reliable, conformance to international open standards, durable, serviceable, aesthetics, perceived quality, enhanced performance with larger range with copper cables up to 250m and usability leads to value to money.

## Hardware

COMMANDO Scout IE1000 series Switches are specifically designed to connect devices in network environments that are subject to extreme operating temperatures of -40°C to 80°C with Vibration and Shock resistant and supports IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3af/at along with Auto-MDIX function which automatically identify straight cable and cross-over cable. Support port auto-negotiation function (Automatically negotiate transmission rate and Duplex modes). Support the Energy Efficient Ethernet (IEEE 802.3az) standard, which reduces energy consumption by monitoring the amount of traffic on an active link and putting the link into a sleep state during quiet periods.

#### Solid performance with non-blocking architecture

- CPU Dual Core having frequency 500 MHz along with packet Buffer memory of up to 1.5MB.
- All ports capable of Gigabit Ethernet speed. Full speed of data transferring with (Auto-Negotiation/Auto MDI/MDIX)
- Solid performance with non-blocking architecture, 8000 entries MAC Address Table with 4way hashing algorithm
- Maximum packet length 10000 bytes
- Jumbo frames of 10000 bytes.
- 2-hash algorithm selection for L2 table searching/learning with Aging timer range from 0.2s to 1600000s.
- Switching Capacity: up to 20 Gbps
- Forwarding Capacity: Up to 14.88 Mpps
- Store-and-forward Switching Scheme.

#### Physical Ports and Networking Interfaces

Up to 8 x 10/100/1000 Mbps Rj45 Ethernet Ports with separate ports 2 GE (RJ-45) or 2 SFP.
 These Extra separate 2 Ports increases port capacity with flexible 1G Fiber/1GE Copper Switchports /Uplinks.

• LED Indicators: Power, Link/Act.

#### IEEE 802.3af/at Compliant Power over Ethernet

Sufficient Power budget to PoE/PoE+ on all ports with 30W Max Per port (PoE/PoE+).
 PoE/PoE+ power supply transmission is more reliable due to design of robust network transformer which uses high current. All PoE/PoE+ ports are IEEE 802.3af-compliant PoE, IEEE802.3at-compliant PoE+. Each port delivers 15.4W PoE, 30W PoE+ power. PD detection will automatically detect and provide required power for your PoE/PoE+ devices.

#### Extra Long operational life

- High Quality PCB Circuit Board and PCB Surface Treatment Using Gold Sinking Process.
- Support temperature range -40° C to 75° C.
- Rugged and Hardened for vibration, shock and surge, and electrical noise immunity.
- Surge protection up to ±6KV to designed to automatically protect Switches from surge events by limiting transient voltages and diverting surge currents.
- Long life electrolytic capacitance to increase the operational life of switches. RJ45 Gold plated with 3U thickness.
- Desktop, Rack and Wall mount design that enables to mounts in an EIA- Standard 19-inch telco rack or equipment cabinet along with Rack-mounting kit available with device. Which enables horizontal surface mounting, desktop, wall mounting and also having durable robust metal body.

#### Green Energy and Silent operation

- Comply with IEEE 802.3az (Energy-Efficient Ethernet) standard, reduces power consumption
  up to 58% and reduce the noise pollution. Energy Efficient Ethernet (EEE) on the RJ-45
  ports and low-power operations for industry best-in-class power management and power
  consumption capabilities. The ports support reduced power modes so that ports not in use
  can move into a lower power utilization state.
- Small form-factor, Fan-less design for silent operation. Perfect for noise sensitive environments.

#### **Ethernet Protocols**

 Supports wide range of IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, 802.1p priority, Energy Efficient Ethernet, IEEE802.3af, Power over Ethernet, IEEE802.3at, Power over Ethernet plus.

#### High Reliability and Enterprise Design

- Mean Time Between Failure of system, MTBF > 200,000 hours
- Stability: 64bit packet, time delay <10us, packet loss rate: 0</li>
- Restorability of Network shaking or device breakdown, restart(recovery) time < 60 sec.</li>
- RoHS Compliant with most of the packaging material can be recycled and reused.

## **Specifications**

COMMANDO Scout IE1000 Series Switches hardware supports L2 VLAN function with IVL, SVL, and IVL/SVL with 2-hash algorithm selection for L2 table searching/learning along with Aging timer range from 0.2s to 1600000s. IEEE 802.1Q VLAN with 4K-entry VLAN Table with limited learned L2 MAC entry on each port and each VLAN. Supports up to 16 spanning tree instances for MSTP (IEEE 802.1s), RSTP, and STP. It has 8K entries in the 4-way hash L2 table for MAC address learning and searching also has two hash algorithms for IVL (Independent VLAN Learning), SVL (Shared VLAN Learning), and IVL/SVL (both Independent and Shared VLAN Learning) for flexible network topology architecture. Independent 512-entry L2/IP Multicast table for multicast function. Supports Reserved Multicast Addresses processing.

It also has per-port L2 storm filtering control mechanism which suppresses the flow rate of some specific packets for Unknown Unicast Storm, Unknown Multicast Storm, and Broadcast Storm. IEEE 802.3az Energy Efficient Ethernet (EEE) for 100Base-TX in full duplex operation and supports 10Base-Te for 10Base-T in full/half duplex. The Energy Efficient Ethernet (EEE) operational mode combines the IEEE 802.3 Media Access Control (MAC) Sub-layer with a family of Physical Layers defined to support operation in Low Power Idle (LPI) Mode. When Low Power Idle Mode is enabled, systems on both sides of the link can disable portions of the functionality and save power during periods of low link utilization. EEE operational mode supports IEEE 802.3 MAC operation at 100Mbps. For 100Mbps operation, the 100Base-TX PHY is supported interoperable with legacy 10Base-T PHYs over 100m of Class-D (Category 5) or better cabling.

It supports broadcast, multicast, unknown- multicast, and unknown-unicast packet suppression control, IEEE 802.1x, IEEE 802.3az Energy Efficient Ethernet (EEE), IEEE 802.3x full duplex flow control. If one port's received frame buffer is over the pause threshold, a pause-on frame is sent to indicate to the link partner to stop the transmission. When the ports received frame buffer drops below the pause threshold, it sends a pause-off frame. It has Auto MDI/MDI-X, to adjust automatically for straight-through or crossover cables on all 10/100/1000 speed ports. Loop protection, If the switch detects a loop, it disables the source port from forwarding data packets originating from the switch to avoid broadcast storms. SFP fiber uplinks provides greater distance connectivity using Gigabit fiber uplinks. The switch provides an estimated cumulative energy savings due to green Ethernet features being auto enabled along with power budget sufficient for all ports. SFP fiber uplinks provides up to 20Km distance connectivity using Gigabit fiber uplinks. The switch provides an estimated cumulative energy savings due to green Ethernet features being auto enabled along with 30W power budget available on all ports.

Table 1. Technical Specifications

IE1000 Switch Parameter	Specification
Flash (KB)	16Kbytes
Packet Buffer Memory	Up to 1.5MB
Switching Method	Store and Forward
Switching Capacity	Up to 20Gbps
MAC Address Table Size	8000 entries
Maximum packet length	10000 Byte
Operation Temperature	-40° to 75°C
Storage Temperature	-40° to 85°C
Operation Humidity (relative, non-condensing)	10% to 90%
Storage humidity (relative, non-condensing)	5% to 90%
Input Power Supply	DC: 12~48V, Amp depending on model
LED Indicator	Link/Act, PoE, PoE MAX, Power
Energy Saving	Comply with "EEE" Energy Efficient Ethernet (IEEE 802.3az)
Surge protection (kV)	±6 kV
Rack mountable	Desktop, Rack/ Wall mountable
Fan (Number)	Fan-less

Table 2. Hardware Specification

Product Code	Enclosure Type	Ports	Main Interface	Uplink Interfaces
IE1000-4GP-2SFP	Desktop	4 x 10/100/1000M PoE+ ports 2 x 1G SFP Uplink slot	4 GE	2 SFP
IE1000-8GP+2SFP	• •	8 x 10/100/1000M PoE+ ports 2 x 1G SFP Uplink slot	8 GE	2 SFP

IEEE 802.3X Flow Control Provides a flow throttling mechanism propagated through the network to prevent packet loss at a congested node. IEEE 802.3 af/at Power over Ethernet (PoE/PoE+) Provides up to 30 W per port having power budget available for all ports which allows support of the latest PoE/PoE+ capable devices such as Video IP phones, wireless access points, and advanced pan/tilt/zoom security cameras, as well as any 15.4 W IEEE 802.3af-compliant end device. This ensures that cost of additional electrical cabling and circuits reduced to zero also supports Temperature range from -40°C to 75°C with auto-PoE power configuration means switch automatically assigns the required power to a port for a PD device up to 250meters of cable length.

**Table 3. Power Specifications** 

PRODUCT CODE	Max no. of PoE+ (IEEE 802.3at) Ports	Max no. of PoE (IEEE 802.3af) Ports	Power Supply DC
IE1000-4GP-2SFP	All ports support PoE+ (30W)	All ports support PoE (15.4W)	DC: 48V, 3A
IE1000-8GP+2SFP	All ports support PoE+ (30W)	All ports support PoE (15.4W)	DC: 48-54V, 5A

The switching capacity indicates the total data exchange capability of the switch, in Gbps. MTBF is a basic measure of a system's reliability. This Series Switch is having higher MTBF, means very reliable product.

**Table 4. Bandwidth Specifications** 

Model Number		Switching Capacity Forwarding rate (Mpps)	MTBF (hours)
IE1000-4GP-2SFP	12	8.93	246516
IE1000-8GP+2SFP	20	14.88	246516

## Table 5. LED indication

LED Indication on Switch	LED Status	
Power	Green OFF: No power on the switch.	
	Green ON: The switch powered on	
Link/Act	LINK/ACT bi-color LED	
	OFF: Port disconnected or link fail.	
	Green ON: 1000Mbps connected.	
	Amber ON: 10/100Mbps connected.	
	Green Flashing: 1000Mbps connected and Data in transit	
	Amber Flashing: 10/100Mbps connected and Data in transit	
System	Green OFF: The system is starting, please wait	
	Green ON: The system is up and running	
PoE	OFF: PoE/PoE+ power is not provided on port	
	Blue ON: PoE/PoE+ power is provided on port	

Table 6. Maximum Cable Lengths

Connection Cable	Category and Speed	Maximum Cable
Type		Distance
		Supported
Unshielded Twisted	10/100Base-TX: UTP category 5/5e/6 cables	100M
Pair cable	(Maximum 100m)	
	1000Base-T: UTP Category 5/5e/6 cable (Maximum	
	100m)	
Shielded Twisted Pair	10/100Base-TX: STP category 5/5e/6 cables	250M/100M
cable	(Maximum 250m)	
	1000Base-T: UTP Category 5/5e/6 cable (Maximum	
	100m)	
Optical Fiber Cable	550M~20KM Depending on SFP	20KM

### SFP ports Slots specifications

It has 1G/1GE Gigabit Ethernet fiber-based or Gigabit Ethernet copper based Small Form-Factor Pluggable with granular port densities that fit diverse campus needs. The SFP transceiver is a compact, hot-swappable device that plugs into a physical port of a network device. SFP optics are used in communication networks and have a transmitting side (Tx) and a receiving side (Rx). The different SFP transceivers work with different wavelengths at an appointed distance. 1G fiber solution or 1GE copper fixed uplinks.

Table 7. SFP specifications

PRODUCT CODE	SUPPORTING SFP
SFP-MM-1G	COMMANDO FiberX 1000BASE-SX, SFP, 850nm, 550m, MMF, DDM, Multi- brand
SFP-EX-1G	COMMANDO FiberX 1000BASE-EX, SFP, 1310nm, 40km, SMF, DDM, Multibrand

SFP-ZX-1G	COMMANDO FiberX 1000BASE-ZX, SFP, 1550nm, 80km, SMF, DDM, Multibrand
SFP-EZX-1G	COMMANDO FiberX 1000BASE-EZX, SFP, 1550nm, 120km, SMF, DDM, Multibrand
SFP-UTP-1G	COMMANDO LightningCOPPER 1000BASE-T Copper RJ-45, SFP, 100m, CAT5/6, Multi-vendor Compatible

#### **Power Supply Specifications**

Power supply is a king of all electronic devices without the power supply switch cannot work. Following rating power input required to make switch work.

**Table 8. Power supply specifications** 

Power supply	DC
In pac voicago	DC: 12V, 3A DC: 48-54V, 5A

#### Included in the bundle/box

All SCOUT IE1000 Series Switches are made available for use globally along with accessories in the bundle to facilitate for enhance operations.

The switch box comes included with the following accessories:

- 1x COMMANDO Soldier IE1000 Series Industrial Ethernet Unmanaged Switch
- 1x Power cable
- 1x Console cable
- 1x Rack/Wall mountable kit

## Warranty and Support

COMMANDO IE1000 Series Industrial Ethernet Unmanaged Switches come with replacement warranty and provided support according to COMMANDO WarrantyX Program available on: <a href="https://www.commandonetworks.com/warranty">https://www.commandonetworks.com/warranty</a>

## **Ordering Information**

Table 9 lists ordering information for the COMMANDO Scout IE1000 Series Unmanaged Switches. To place an order, please contact your local reseller/distributor or COMMANDO Sales Representative at <a href="https://www.commandonetworks.com/rfq">www.commandonetworks.com/rfq</a>

Ordering Information	
Product Code	Description
IE1000-4GP-2SFP	COMMANDO Scout IE1000 4GE PoE+, 2SFP Uplinks, Industrial Ethernet, Unmanage Switch
IE1000-8GP+2SFP	COMMANDO Scout IE1000 8GE PoE+, 2SFP Uplinks, Industrial Ethernet, Unmanage Switch

#### Please note:

The model numbers of newer version products are further simplified such as + is updated to -. However, the product remains same and can be treated interchangeably.

#### Examples:

IE1000-8GP+2SFP is updated to IE1000-8GP-2SFP

# **Document History**

Release	What's new	Date
Release 1	First Release	Aug 1, 2020
Release 2	Industrial SFP Model added	July 5, 2021
Release 3	New Models added	September 18, 2023
Release 4	Models Updated	October 14, 2025