

# Fast Ethernet Layer 2 PoE+ Web Smart Managed Switches

## OVERVIEW

The Interlogix® IFS ES Series of Web Smart PoE+ Switches are designed to be a cost-effective network switch solution for small to mid-sized IP camera surveillance systems. The switches are available in 8-, 16- or 24-port Fast Ethernet PoE+ configurations with all versions having two additional GigE RJ45/SFP ports. Allowing for basic management and PoE functionality, the switches meet the need of providing Fast Ethernet ports for IP cameras with GigE ports for NVR/Server connections.

The IFS ES Series of Web Smart Switches support basic Layer 2 features, such as VLANs, QoS, Link Aggregation, Port Mirroring, Spanning Tree, IGMP Snooping and basic security. In addition, these switches provide both IEEE802.3-af/at power on each port (up to the maximum total power budget) and offer full PoE management features. With a unique PoE usage LED meter on the front panel, these switches allow users to easily monitor total power budget usage without having to connect to a PC.



**ES2402-8P-2C**

8-Port Fast Ethernet PoE-at Web Smart Managed Switch



**ES2402-16P-2C**

16-Port Fast Ethernet PoE-at Web Smart Managed Switch



**ES2402-24P-2C**

24-Port Fast Ethernet PoE-at Web Smart Managed Switch

## STANDARD FEATURES

### Physical Ports

- 8, 16 or 24 10/100Mbps RJ45 ports
- 2 RJ45/SFP GigE Combo ports
- Auto-MDI/MDI-X and auto-negotiate on each RJ45 port

### Power over Ethernet

- IEEE 802.3af/at powered RJ45 ports (except for combo ports)
- PoE Power up to 30.8 watts per PoE port support
- Circuit protection preventing power interference between ports
- Easy to view PoE Usage LED meter on front panel
- Powerful PoE management features




### Layer 2 Features

- Quality of Service (2 priority queues on all switch ports)
- VLAN, up to 32 VLAN groups
- IEEE 802.1Q tagging support
- Spanning Tree Protocol (IEEE 802.1d and IEEE 802.1w) support
- Link aggregation (LACP or Cisco Ether-channel) support
- Multicast Support (IGMP Snooping v1 and v2 - excludes IGMP Query)
- Basic Switch Security (MAC address binding, TCP/UDP filtering)




### Management and Warranty

- Management via Web browser or SNMP v1
- Firmware upload/download via HTTP
- 3-year Warranty

## Specifications

	ES2402-8P-2C	ES2402-16P-2C	ES2402-24P-2C
			
<b>Physical Ports</b>			
10/100Base-T(x) Ports	RJ-45 (8)	RJ-45 (16)	RJ-45 (24)
GigE Combo Uplink Ports	RJ-45 (2), 1000Base-X SFP (2-shared)		
Port Configuration	Auto MDI/MDI-X		
Port Speed	Auto-negotiate		
<b>Switch Performance</b>			
Switch Architecture	Store-and-Forward		
Switch Fabric	5.6Gbps (non-blocking)	7.2Gbps (non-blocking)	8.8Gbps (non-blocking)
Switch Throughput	4.16Mpps @ 64Bytes	5.35Mpps @ 64Bytes	6.54Mpps @ 64Bytes
MAC Address Table	4K entries, automatic source address learning and ageing		
Share Data Buffer	2.75Mb embedded memory for packet buffers		
Maximum Frame Size	1536 Bytes		
Flow Control	Back pressure for Half-Duplex; IEEE 802.3x Pause Frame for Full Duplex		
<b>Layer 2 Functions</b>			
Management Interface	Web browser, SNMP v1		
Port Configuration	Port enable/disable; Auto-negotiation; 10/100/1000Mbps full-and-half duplex mode selection; Flow control		
Port Status	Display each port's speed, duplex mode, link status and flow control status. Auto negotiation status, trunk status		
Port Mirroring	TX/RX/Both; Many to 1 monitoring		
Bandwidth Control	Ingress/Egress rate control: configure (0-255)Kbps Full Speed 256Kbps		
VLAN	802.1Q tagged-based VLAN, up to 30 VLAN groups, out of 4094 VLAN IDs Port-based VLAN, up to 18 VLAN groups MTU VLAN		
Link Aggregation	1 group of 2-Port 10/100/1000Base-T trunk supported		
Quality of Service (QoS)	Traffic classification based on: Allow to assign low / high priority on each port First-In-First-Out, All-High-before-Low, Weight-Round-Robin QoS policy		
Multicasting/IGMP	IGMP (v1/v2) Snooping, up to 32 multicast groups Without Query supported		
<b>Power over Ethernet</b>			
PoE Standard	IEEE 802.3af / 802.3at PoE / PSE		
PoE Power Supply Type	End-span		
PoE Power Budget	125 Watts (Max)	220 Watts (Max)	380 Watts (Max)
PD at 7 watts	8 units	16 units	24 units
PD at 15.4 watts	8 units	12 units	24 units
PD at 30.8 watts	4 units	7 units	12 units
PoE Power Output Per Port	Per Port 56V DC, Max. 30.8 Watts		
Power Pin Assignment	1/2(+), 3/6(-)		

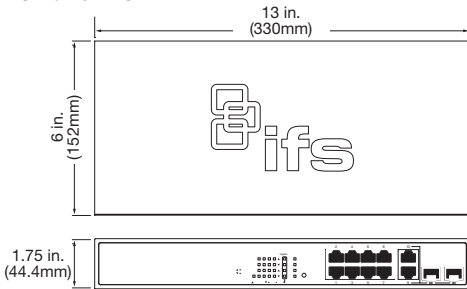
## Specifications (continued)

	ES2402-8P-2C	ES2402-16P-2C	ES2402-24P-2C
			
<b>LED Indicators &amp; Switch</b>			
Power	On/Green		
10/100Base-TX/PoE Ports (24)	10/100Mbps LNK/ACT - Green; PoE in Use - Amber		
10/100/1000Base-T/SFP Ports	100Mbps LNK/ACT - Green; 1000Mbps LNK/ACT - Green		
PoE Usage Meter	30W, 60W, 90W, 120W (Amber)	50W, 100W, 150W, 190W (Amber)	90W, 180W, 270W, 360W (Amber)
Reset Button	System reboot: push and hold < 5 sec.; Factory Default: push and hold > 5 sec.		
<b>Electrical &amp; Mechanical</b>			
AC Power Input Voltage	100~240V AC, 50/60Hz, 2A	100~240V AC, 50/60Hz, 4A	100~240V AC, 50/60Hz, 4A
Power Consumption (Full PoE load)	Max. 176 Watts / 603.8 BTU	Max. 240 Watts / 816 BTU	Max. 513 Watts / 1750 BTU
Dimensions (W x D x H)	13 x 6 x 1.75 in., (330 x 152 x 44.4mm)	17.5 x 8 x 1.75 in., (444 x 203 x 44.4mm)	17.5 x 12 x 1.75 in., (444 x 305 x 44.4mm)
Weight	3.52 lbs., 1.6kg	5.62 lbs., 2.55kg	9.9 lbs., 4.5kg
<b>Environmental</b>			
Operating Temperature	0°C to + 50°C		
Storage Temperature	-10°C to + 70°C		
Relative Humidity	0% to 95% (non-condensing)		
<b>Standards Compliance</b>			
Regulatory Standards	FCC Part 15 Class A, CE		
IEEE Standards	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet IEEE 802.3x Full-duplex flow control IEEE 802.1Q VLAN IEEE 802.1p QoS IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus		

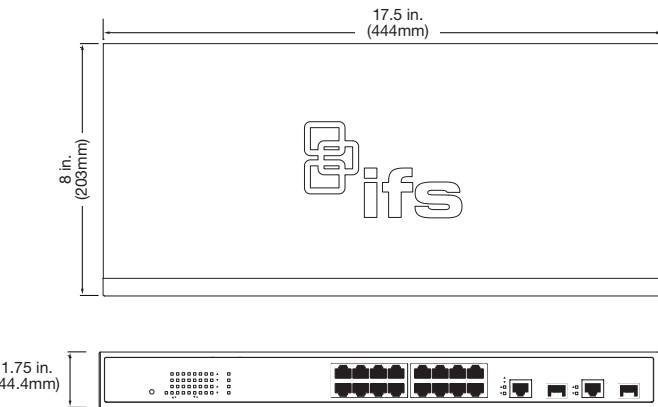
# Fast Ethernet Layer 2 PoE+ Web Smart Managed Switches

## Dimensional Diagrams

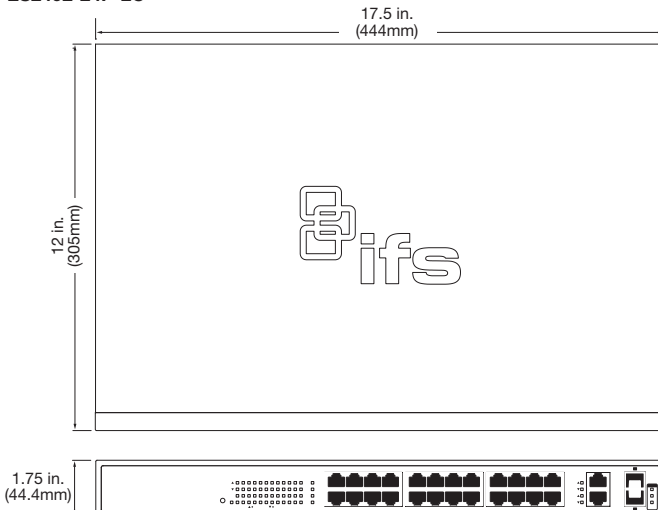
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**ES2402-24P-2C**



## Ordering Information

<b>ES2402-8P-2C</b>	8-Port Fast Ethernet PoE-at Web Smart Managed Switch
<b>ES2402-16P-2C</b>	16-Port Fast Ethernet PoE-at Web Smart Managed Switch
<b>ES2402-24P-2C</b>	24-Port Fast Ethernet PoE-at Web Smart Managed Switch
Included Accessories	User's Manual CD, Quick Installation Guide, Power Cord

Note: These switches require a Small Form-factor Pluggable (SFP) for optical uplink use. IFS SFPs are available for multi-mode, single mode, and 1 or 2 fibers for various transmission distances over optical fiber. Please refer to the IFS SFP data sheet to select the appropriate SFP for your particular application needs. The mini-GBIC ports on these units accept Gigabit SFPs only. IFS S30 Series SFPs are recommended.

## Accessories

<b>SFP30 Series</b>	Gigabit SFPs
<b>SFP35 Series</b>	Gigabit SFPs (Wide-temp)



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