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preliminary

Commander
IP Communications Center

C10e-PoE

FEATURES:

Commander is an IP Communications Center that provides a fully managed 10 port network switch, environmental sensing, RS 232 and RS 485 bidirectional communication ports, interactive alarm in and auxiliary network controlled contacts, and data and video stream management.

- *8 port 802.3af Power over Ethernet (PoE) with full power available at each port with no power sharing.*
- 10 port fully managed level 2 network switch with 2, 1 Gigabit ports for Cascade and VLAN configurations
- Temperature, Airflow, Humidity and Power: Voltage, Frequency and Wattage sensing for Hard Drive and other mission critical component protection.
- Multicasting for transmitting to various locations when decreasing network traffic.
- Operator programmable alerts for power loss conditions. Status view for monitoring conditions in real time.
- RS 232 and RS 485 bidirectional ports for data communications and network device control
- *Programmable for Hi Power PoE operation for driving cameras, heaters and blowers. Full power to up to 7 ports with no power sharing (high light)*
- Interacts with auxiliary outputs, emails and internal logging. Interfaces with all Pilot video and network software management systems. Programmable interactive alarm in and auxiliary out contacts for universal interfacing with other system components
- Unique PortFlow™ for monitoring stream consistency to assure proper IP video quality
- On board alarm, polling and access log storage for monitoring trends
- User programmable Email alarms and log transfer for instant notification
- Multicasting for transmitting to various locations while decreasing network traffic.

The Commander Series are fully managed 10 port network switches designed to meet the growing requirements of data burdened security systems. With the ability to provide programmable 802.3af PoE power and Hi Power outputs the Commander C10 PoE series can meet the demanding needs of security systems for power without the need for a local source. Using separate set ups and operations for IT Directors and Security Directors, the Commander Series eliminates potential conflicts. IT Directors maintain complete control over network interfaces and operations, while Security Directors can rout IP signals in a familiar manner similar to setting up a video matrix switcher. For greater distance applications, Commander's Gigabit ports can be ordered with fiber links for transmission over long distances.

With two Gigabit Ethernet ports Security Directors are assured large data generators such as IP cameras can be properly routed for viewing and recording. Commander's features move beyond standard network switches by providing hard contact alarm inputs and auxiliary outputs for real world alarm notifications and actions. All Commanders have internal and external environmental and power sensors for monitoring temperature, airflow, humidity and power of external devices. The number of sensors can be expanded using an external USB hub.

All Commander set ups, operations and monitoring are done using a built in web server without the need for external client software. Status and alarm logs are maintained on Commander and can be easily accessed with most computers using most standard web browsers. Commander can be operated to poll sensors monitoring external DVRs, NVRS and other server based devices providing warnings and alarms set to specific environmental conditions. Alarm alerts and even complete log files can be automatically emailed or transferred to other computers using industry standard FTP (File Transfer Protocol). Commander's Web page can be easily minimized running in the background of any IP Camera, DVR, NVR or security server based system providing operator alerts without the need for extra cost of client software. Commander is compatible with any network security product displaying html web pages.

Front panel LEDs provide immediate status and alarm states for all network, alarm contact and environmental sensors.

Network enabled RS 232 and RS 485 communication ports compliant to RFC 2217 offering edge device communications and control.

Management:

SUPPORTED PROTOCOLS FOR SERVER SIDE:

8 port full power 802.3af compliant PoE.

Port Auto Sensing, 8 Ethernet ports 10/100Base T, 2 Ethernet ports 1000Base T, RS232, RS485, 1 USB Port

Auto Negotiation for half and full duplex mode for 10/100/1000 Base T for C10e, 1000 Base X for C10p

IEEE Std. 802.3Z when using optional fiber SFP

802.1d Spanning Tree

IEEE 802.1w Rapid Spanning Tree Protocol

802.1p (QoS) field classification with operator manual QoS priority assignments of up to 4 classifications per 10/100 base T ports and up to 8 classifications per 1000 base T/1000 Base X ports.

IEEE 802.1x for dynamic port based security providing for user authentication per port.

SNMPv1, v2 for providing encrypted network security administrated traffic during SNMP sessions. IGMP V2 Snooping (multicasting) with active and passive modes. Active mode conforming to RFC2236 for membership query. User configurated interface.

IGMP V2 Snooping. Multicasting with active and passive modes. Active mode conforming to RFC2236 for membership query. User configurated interface.

Custom integration to other devices using standard language XML. Contact factory for specific information.

The ability to provide for private VLAN security and isolation between switch ports or groups of switch ports (can be labeled either as groups or more likely communities) to ensure that users cannot snoop on other users data (traffic)

NTP: Ability to reference to NTP server.

Conformity to SNMPv1, v2c

MDI/MDIX support to eliminate need for cross over cables. Provision of "Forced Mode" to set programming and disable feature per port on 10/100 Base T ports.

RS 232, RS 485, RFC 2217 compliant communication ports

>20,000 Event Logs with separate logs for polling, event and user access.

Compliant with afi's Open Path with available API for custom interfacing.

DHCP notification: Programmable Email notification of any IP address changes. ARP packet with IP and MAC address sent every minute (addressable by standard freeware such as Ehtereal and TCPDUMP). Both methods keep you up to date on Commanders using DHCP without the need to remove from system or complex external connections.

FEATURE HIGHLIGHTS

Programmable 8 ports 802.3af compliant power. Hi power with up to 30 Watts of maximum power for up to 7 ports without the need to power share

Power management with web server, email, network and logged alerts.

Built in web site with no client required software allows for remotely turning devices on and off in conditions requiring remote device reset.

Wide operating temperature range between -30°C (-22°F) to +75°C (+167°F) for C10e-I and C10p-I models.

Network switching, alarm and auxiliary functions, environmental sensing for network equipment protection and the ability to speak to both IT and Security Directors make up the Commander product series.

Monitoring of internal Processor, Fan and CPU, temperature and voltage levels with user programmable email alerts.

Fan Activity Mode regulates fan operation based on temperature requirements extending fan operating life and reducing maintenance costs.

Network Duplicate IP Detection: Commander will alert you when any device on the network is assigned a duplicate IP address, helping to save troubleshooting time and conflicts.

PortFlow™: Ability to monitor individual data and video stream per port to operator assigned quality levels. Operator programmable warning and alarm levels with event and poll logging, and email alerts. Unique PortFlow™ allows monitoring of video streams set to specific quality and refresh rate requirements. User ability to define either limit or operational range.

DHCP: allows a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

External Probes: Environmental and power sensing probes to provide valuable network equipment. With user ability to define limit or operational range for power probe settings.

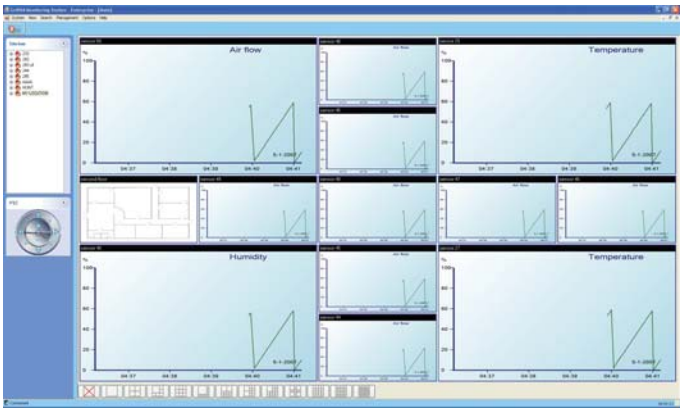
Three main security administration modes: Master/IT/Security with sub security levels of IT Admin with Security Views and Operating Views and Security Admin with IT Views and Operating Views.

Web based Management and Configuration: The system will provide user access to an on-board web server TCP/IP (html pages) for set up, operations and status viewing. Existing programming will be able to be downloaded. New programming will be able to be uploaded. Logs and other information screens will be able to be download in a format compatible with MS Word and Excel.

High Capacity Solid State Memory: Able to record and hold events from 53 days to 3.5 years.

Alert Ports: Ability to define up to four individual IP address and ports for transmitting status and alerts to individual servers on the network.

Optional Pilot Commander Scout (CS) Software:



Pilot CS (Commander/Scout) monitors combinations of Scout Environmental Sensing units and Commander Switches to create a seamless integrated data, environmental sensing, alarm, auxiliary and network switch control center. Alarm, Auxiliary, Network connections port flow activity, power sensing and PoE status and sensors can be monitored from various network locations. Responses from one network location can be programmed to trigger auxiliary reactions at other network points. Pilot CS can also be used to manage Scout's RS232 and RS485 dataports. All Scout statuses are displayed in a tree with easy to read color status icons. Data from all network locations is contained with a common log for easy data searches and report generation detailing long term histories and trends. Operating with tool bar alerts Pilot can run in the background of any web based server system , DVR, NVR or even IP Cameras. Pilot can operate with other afi components or solely as a remote Scout control center. Pilot CS gives client operators the ability to to conduct Client to Client communications using text instant messaging (IM) and Voice over IP (VoIP) communications. Both can be recorded and stored.

Management Network Access and Information:

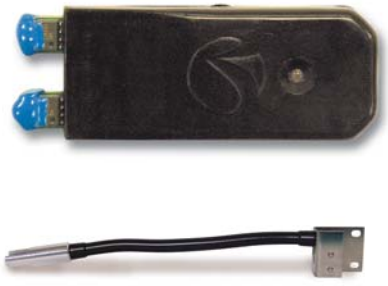
MANAGEMENT SPECIFICATIONS:

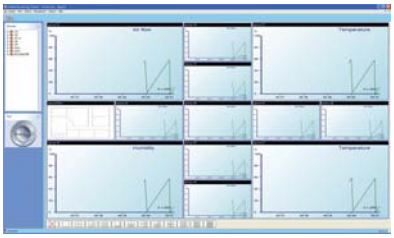
MAC address notification	with Admin notification of users added or removed from the network.
MAC address aging	(with Admin ability to set aging)
Up to 4K unicast addresses	entities per device as applied to self-learning capacity and table aging.
Port Status	
Auto negotiate Current status:	Half, Full, Auto for 10/100 Base T ports
Port Aging:	Applied to complete switch.
QoS	
Port priority settings	On: Using 802.1p tags Off: Ignoring 802.1p tags
Port Snooping	Provided port has been programmed as part of port snooping
Bandwidth	All Unicast Multicast Broadcast Programmed bandwidth limit
Port Packet Priority	Off QoS priority Operator Manual settings per port priority settings
Port Monitoring	Provided port has been assigned as to port monitoring
Port Trunking	Provided port has been assigned as to port trunking
PortFlow™	Real time monitoring of all port functions for quickly determining problem areas and preventing unauthorized port connections and device changes.

PROTOCOL:

802.1p
802.3
802.3u
802.3x
802.1d
802.1w
802.1s
802.1x
802.3ab
802.3ac
RMON 1,2,3,9
802.3Q
802.3
802.3af

IP address	Mac Address Number of client currently accessing device
RFC	2217 for external RS 485/RS232 communication port interface. 2236 for active mode membership query





OPTIONS	PRODUCT SPECIFICATIONS:
P-TA: Temperature Airflow sensor probe	
P-TAH Temperature Airflow Humidity probe	
Dimensions	2.5" (D) x .875"(H) x 0.4"(W) 63.5mm (D) x 22.2mm x 10.2 (W)
Operating Temperate	-40°C to 85°C (-40°F to 185°F)
Operating Humidity	0% to 95% RH Non-Condensing
Weight (approx)	0.5 Ounces 14 grams
Sensing Range Temp:	0°C to 70°C (32°F to 158°F)
Sensing Airflow	Relative reading Detects 15% over full temperature range
Sensing Humidity (P-TAH only)	0% to 100% Relative Humidity
Connector	Mini-USB type B 5pin Max.distance 25' For longer distances, contact factory.
Power	60 mA max
Data Transfer Rate	12 Mbit/sec (full speed USB)
Certifications:**	FCC: CFR Title 47, Part 15 Class A CE: EN55022 Emissions / EN55024 Immunity UL/CE: IEC 61010
P-RB	**Probe Rack Mount Bracket**
Mounting bracket	1.75" (44.45mm)
Length (Full extension)	11.5" (292.1mm)
Weight	0.5 pound
P-USB	**USB Male to Mini Male Cable**
Length	2 meters
Transfer rates	Up to 480Mbps RFI suppression ferrite clamp included
P-VFP specifications:	
Physical dimensions:	3.4" X 2.12" X 1.5"
Connectors:	5 pin MINI-B USB connector
AC power input:	IEC 320-1 3-pin
AC power output:	IEC 320-2 3-pin
Electrical specifications:	
Measured AC voltage:	0-265VAC RMS
Measured AC frequency:	0-400Hz
Measured load current:	0-10A RMS
Temperature:	-40°C to +70°C
Humidity:	0 to 95% relative humidity

Features:

STATUS:

LEDs

Per Port

10 Base T	No connection, normal connection, activity, alarm
100 Base T	No connection, normal connection, activity, alarm
1000 Base T	No connection, normal connection, activity, alarm
Power:	No power, normal power, power below acceptable level, temperature alarm

VIA WEB BROWSER

Contact alarm:	Off, On active state, previous alarm condition
Auxiliary:	Off, On active state, multiple alarm, previous alarm condition
Sensor:	No connection, normal connection, warning, alarm

CONNECTIONS

Ports: C10e/C10p

10/100 Base T	(8) C10e/C10p RJ45 Female connection configurable via set up		
1000 Base T	(2) C10e RJ45 Female Connection configurable via set up		
1000 Base T	(2) C10p SFP Socket For use with afi approved devices conforming to Mutli-Sources Agreement(MSA) Small form Factor Pluggable(SFP) Inclusion of (2) SFP modules required for 1 Gig E operation.		
SFP-SX:	Wavelength:	850nm	
	Output Power:	-9.5 to -4 dBm	
	Sensitivity:	<-17dBm	
	Distance:	550m (50/125 um)	275m (62.5/125 um)
SFP-LX	Distance:	10 km	
	Wavelength	1310 nm FP	
	Output Power	-9.5 to -3 dBm	
	Sensitivity:	< -21dBm	
SFP-ZX	Distance:	70 km	
	Wavelength	1550 nm DFB	
	Output Power:	0-+5 dBm	
	Sensitivity :	-23 dBm	
PoE Rating:	802.3af	15.4W	
(at source)	Hi Power	30w	
Individual Class	Class 0	0.44W to 12.95W	
power rating:	Class 1	0.44W to 2.84W	
(at device)	Class 2	3.84W to 6.49W	
	Class 3	6.49W to 12.95W	
	Class 4	12.95W to 25.5W	

RS 232	DB9 Male connector configurable via set up
RS485	RJ12 Female connector configurable via set up
Network	RJ45 Ethernet female connector 10/100 Base T
Sensor probes (optional)	Standard USB female connector using proprietary afi communications
Alarm In	Programmable as NO or NC for Alarm action, rating +5 Volts D.C. to ground Contact to ground, push to lock connector 1 Gigabit
Auxiliary out	Male Phoenix terminal block, Form C
Main Power:	3 prong A.C.
Power	100-240 VAC @ 50-60Hz 55W Max

Physical Specifications

C10e/C10p	1.75" (H) x 6.75" (D) x 8.5" (W) 44.45mm(H) x 171.5mm(D) x 215.9mm(W)
Weight:	2 lbs 1.36 kg

Environmental Specification for C0E-I and C10p-I

Operating Temperature Range for C10e-I and C10p-I	-22°F to 167°F (-30°C to 75°C)
Operating Temperature Range for C10e and C10p	14°F to 140°F (-10°C to 60°C)
Storage Temperature Range	-30°C to 85°C
Operating Humidity Range	0-95% Non-Condensing
Storage Humidity Range	0-95% Non-Condensing

Electromagnetic Compliance

FCC:	CFR Title 47, Part 15 Class A

Safety

CE Mark commercial:	EN55022 Emissions/EN55024 Immunity
UL (rating):	UL 61010-1

Options

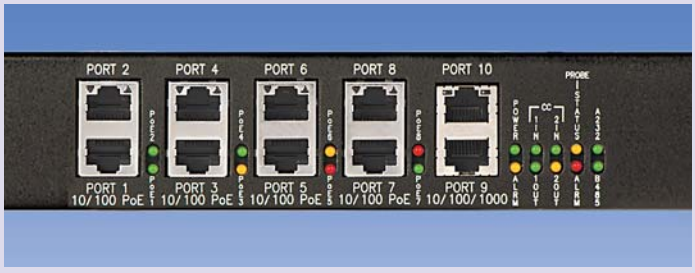
P-TA:	Temperature Airflow probe
P-TAH:	Temperature, Airflow, Humidity Probe
P-VFP:	Voltage/Frequency/Wattage
Pilot CS:	Client Multiple Unit Management Software
C10-FSM	Surface Mounting Kit, Commander C10
C10-HRM	Rack Mounting Kit, 1 Commander C10 Half 1U
C10-FRM	Rack Mounting Kit, 2 Commanders C10 Full 1U

Standard Accessories

Resource CD Disk
A.C. line power cord.
5 Pin terminal block, female, screw terminal X 2
Mounting Bracket X 2

Model Numbers

C10e-PoE	(8) port 10/100 Base T (2) port 1000 Base T



Preliminary Specifications
Subject to Change Without Notice

Open Path

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