General Availability

PowerFlow-2

Managed Ruggedized Ethernet Switch with Power over Ethernet

- Compact Industrial and ruggedized Ethernet switches with up to 16 10/100/1000BaseT, and 8x100/1000BaseFX SFPs

- Flexible deployment scenarios using xSTP, ERPS and ultra-fast recovery with PF-Ring and PF-chain

- Advanced L2 functionality like policing and traffic management, as well as security features to assure User Authentication and Device Connection Control

- Variety of input voltage and POE feeding options including POE++

- Wide Operating Temperature

PowerFlow-2 are managed and unmanaged industrial grade Gigabit Ethernet devices designed to build packet-based operational networks of Critical Infrastructure verticals. The family includes six managed switches and two unmanaged injectors (see *Ordering*).

MARKET SEGMENTS AND APPLICATIONS

PowerFlow-2 applications include power utilities, railways, traffic controllers, and safe city applications, which require advanced Layer 2 functionality and in many cases are PoE intensive. PowerFlow-2 provide a variety of redundant functions to increase the reliability and deployment flexibility of the communications system, including variety of Ethernet functions, such as xSTP, G.8032 and ultra-fast recovery using PS-ring and PF-chain unique features. PowerFlow supports IPV4/IPV6 Dual stack for transparent data transmission. Dual DC inlets and variety of isolated power supply options address a wide range of installation scenarios.

PowerFlow-2 systems are fully compliant with the requirement of EN 50121-4 for railways. Housed in rugged DIN rail or wall mountable enclosures, these switches are designed for harsh environments, such as industrial networking and intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. The wide operating temperature range models (-40°C to 75°C) fulfill the special needs of industrial applications.

INTEROPERABILITY

PowerFlow-2 is compatible with SecFlow-2 (RSTP, ERPS), Airmux (all PoE options besides Airmux-5000D), and PowerFlow-2-10G.

RESILIENCY

Ethernet Ring Protection

PowerFlow-2 supports STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching (ERPS), and PF-Ring for redundant cabling.

PowerFlow-2 provides five Ring instances, while each can support G.8032, PF-Ring, PF-Chain or Sub-Ring type for flexible uses. (Refer to *Installation and Operation manual* for more details).

PF-Ring can be established for Redundant Ethernet Ring, having recovery time <10ms with up to 250 units.

MANAGEMENT AND SECURITY

PowerFlow-2 can be managed using user-friendly web interface and CLI with textual database. It supports SNMPv3 and SSH using IPv4 or IPv6. Advanced L2 Ethernet functions (IGMP, VLAN, QoS) and security features (ACL, 802.1X) provide reliable secure communication. PowerFlow-2 can be conveniently managed centrally by RADview or other third-party SNMP managers.

RAD

Your Network's Edge®

PowerFlow-2

Managed Ruggedized Ethernet Switch with Power over Ethernet

Specifications

CAPACITY

Switching Capacity	Up to 48 Gbps
Forwarding Rate	Up to 35.7 Mpps
Max. Frame Size	Jumbo Frame: 9.6 KB
MAC Address Table	8K

ETHERNET INTERFACES

Ports	See Table 1 and Table 2
Power over Ethernet (PoE)	15.4W per port: PoE ,802.3af
	30W per port: • PoE+, 802.3at • PoEAM for Airmux 30 (Alternative-B, Passive)
	60W per port: • PoE++ Type 3 (UPoE), 802.3at • Passive POE (PoEAU)
	90W per port: PoE++ Type 4, 802.3 bt

VLAN

VLAN	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN VID
	IEEE 802.1ad Q-in-Q
	MAC-based VLAN, up to 256 entries
	IP Subnet-based VLAN, up to 128 entries
	Protocol-based VLAN (Ethernet, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	MVR (Multiple VLAN Registration)
	GVRP (GARP VLAN Registration Protocol)

MANAGEMENT

Control Port	RS-232 interface, RJ-45 connector
Options	CLI with password-protected access
	Web-based
	SNMPv3
	Modbus/TCP

PowerFlow-2 in Smart City Application

PowerFlow-2
Managed Ruggedized Ethernet Switch with Power over Ethernet
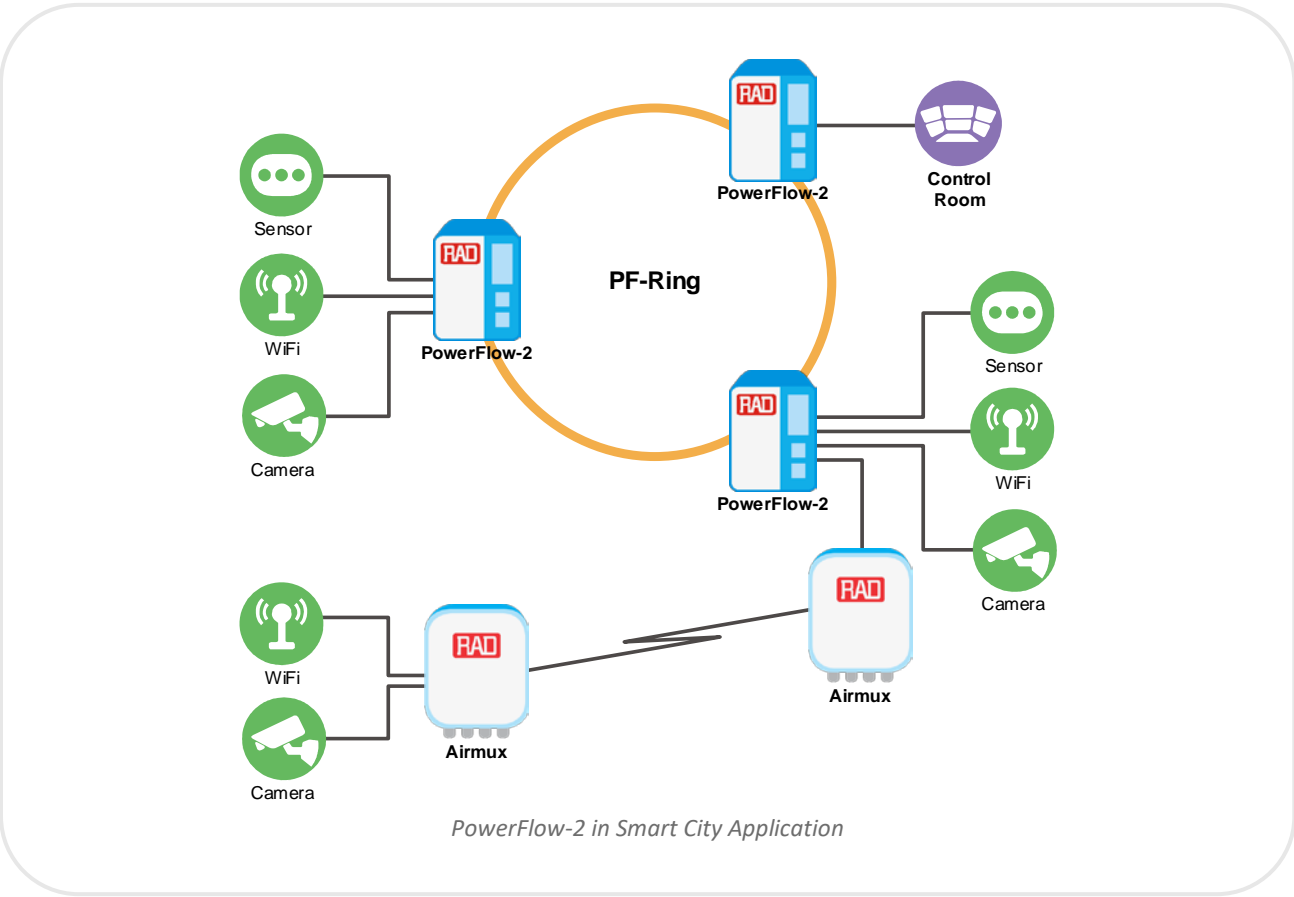
TIMING*

Clients	NTP client
	SNTP client
IEEE1588 PTP V2	Transparent Clock

*Not applicable for injectors

SECURITY*

ACL	L2: MAC address SA/DA/VLAN
	L3: IP address SA/DA, Subnet
	L4: TCP/UDP
TACACS+	
RADIUS	
HTTPS, HTTP	
SSL/SSH v2	
IEEE 802.1X	Port-based
	MAC-based

*Not applicable for injectors

QUALITY OF SERVICE (QOS)*

Class of Service	IEEE802.1p 8 active priorities queues for per port
Traffic Classification QoS	IEEE802.1p based CoS
	IP Precedence based CoS
	IP DSCP based CoS
	QCL (QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI
	QCE (QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
	Scheduling algorithms: Strict Priority/ Deficit Weighted Round Robin (DWRR)
	8 queues per port
Bandwidth Control	Ingress:
	• Rate in steps: 1 kbps / Mbps / fps / kfps
	• Range: 100 kbps to 1Gbps / 1fps to 3300kfps
	• Rate Unit: bit or frame
	Egress:
	• Rate in steps: 1 kbps / Mbps
	• Range: 100 kbps to 1Gbps
	• Rate Unit: bit
	• Per queue / Per port shaper
DiffServ (RF 2474) Remarking	
Storm Control	Unicast, Broadcast, Multicast

GOOSE Message (for PF-2/ETR/WR/ 3SFP/8UTP/H)	Complies with IEC61850 standard to achieve zero packet loss
IGMP/MLD/DHCP	IGMP Snooping v1, v2, v3
	MLD Snooping v1, v2
	Port Filtering Profile
	Throttling
	Fast Leave
	DHCP client/Relay/Snooping/ Snooping option 82/Relay option 82

*Not applicable for injectors

RESILIENCY

ERPS v2	Recovery time <50ms
	Single Ring, Sub-Ring, and Multiple ring topology network
	Up to 5 instances of PF-Ring. PF-Chain or Sub-Ring
Link Aggregation	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk groups
	Dynamic (IEEE 802.3ad LACP), up to 5 trunk groups

DIAGNOSTICS

Alarm Relay	Relay outputs with current carrying capacity of 1 A @24VDC
Indicators	LED indicators
Event Syslog	Syslog server

GENERAL

Environment

Housing	Rugged Metal
	IP30 Protection
	Fanless

For the rest, see Table 3 and 4

Physical

See Table 3 and 4

Power

See Tables 5, 6, 7, and 8 for different models

In some telecom applications, users may need to use negative DC power to prevent wire corrosion. Note that not all the PowerFlow-2 devices support such power input (see Table 9). One power supply is enough to power up the device. In case of power source redundancy, when two negative DC power supplies are needed ("+" poles are connected together to ground), an additional kit (PF-2-48V-DUAL-INPUTS-KIT, ordered separately) should be used for protecting the batteries in case of power level difference between the 2 sources (see Table 9).

PowerFlow-2
Managed Ruggedized Ethernet Switch with Power over Ethernet

Table 1. PowerFlow-2 Features (Switches)

Specifications		PF-2/ETR/ 48VDC/3SFP/ 8PH PF-2/ETR/WDC/ 3SFP/8PH	PF-2/ETR/ 48VDC/ 3SFP/ 4PH4PAM	PF-2/ETR/ 48VDC/ 2SFP/4PU	PF-2/ETR/ 48VDC/8SFP/ 8UTP/8PH	PF-2/ETR/ WR/3SFP/ 8UTP/H PF-2/ETR/ WR/3SFP/ 8UTP/HV	PF-2/ETR/ WDC/ 12SFP/ 8UTP	PF-2/ETR/ 48VDC/8SFP /16PH
Interfaces	Switching Capacity, non-blocking, Gbps	22	22	12	48	22	40	48
	Forwarding Rate, Mpps	16.37	16.37	8.93	35.7	16.37	30	35.7
	10/100/1000Base-T interfaces	-	-	4	8	8	8	-
	FE/GbE SFP interfaces	3	3	2	8	3	12	8
	PoE+ (30W per port)*	8	4	-	8	-	-	16 (total 360W max)
	PoE++ (60W per port)	-	-	4	-	-	-	-
	Airmux PoE	-	4	4	-	-	-	-
OAM/CFM and Diagnostics	Port Mirroring	+	+	+	+	+	+	+
	RMON I, RMON II	+	+	+	+	+	+	+
	Modbus/TCP	+	+	+	+	-	+	+
	IEEE 802.1ag CFM	+	+	+	+	+	+	+
	ITU-T Y.1731 performance monitoring (PM)	+	+	+	+	+	+	+
Manage -ment	CLI	+	+	+	+	+	+	+
	Web-based	+	+	+	+	+	+	+
	IPv6 Management	Telnet Server/ICMP v6, SNMP, HTTP, SSH, NTP/SNTP, TFTP, QoS, ACL, DHCP						

*__Note__: *In order to ensure 30W per port, the device must be powered by a power source with minimum of 50 VDC.*

Table 2. PowerFlow-2 Features (Injectors)

Specifications		PF-2/ETR/48VDC/UTP/1PAM	PF-2/ETR/WDC/UTP/1PU	PF-2/ETR/48VDC/2U/2PBE
Interfaces	10/100/1000Base-T	1	1	-
	10/100/1000/2.5G/5G/10G Base-T			2
	10/100/1000Base-T, UPoE++	-	1	-
	10/100/1000Base-T, Airmux PoE	1	-	-
	10/100/1000/2.5G/5G/10G Base-T, 802.3bt PoE type 4	-	-	2

Table 3. Power, Physical, and Environmental Specifications (Switches)

Specifications		PF-2/ETR/48VDC/3SFP/8PH PF-2/ETR/WDC/3SFP/8PH PF-2/ETR/48VDC/3SFP/4PH4PAM PF-2/ETR/WDC/12SFP/8UTP	PF-2/ETR/48VDC/8SFP/8UTP/8PH	PF-2/ETR/48VDC/2SFP/4PU	PF-2/ETR/WR/3SFP/8UTP/H PF-2/ETR/WR/3SFP/8UTP/HV	PF-2/ETR/48VDC/8SFP/16PH
Power	Power Supply*	Dual inlet 48 VDC or WDC			Wide range dual inlet 48VDC (/H only) or single 88~264 VAC or 85~300 VDC	Dual inlet 48 VDC
	Power Consumption		See Table 7		See Table 5	See Table 7
Size	Height / cm(inch)	15.2 (5.9)	15.7 (6.2)	13.5 (5.3)	15.2 (5.9)	16.0 (6.3)
	Width / cm(inch)	7.2 (2.9)	9.1 (3.6)	6.25 (2.5)	8.2 (3.2)	9.9 (3.9)
	Depth / cm(inch)	10.6 (4.2)	11.6 (4.6)	10.6 (4.2)	10.6 (4.17)	13.6 (5.3)
	Weight / kg (lb.)	1.0 (2.2)	2.06 (4.54)	0.7 (1.54)	1.085 (2.39)	1.95 (4.3)
Storage Temperature		-40 to +85°C (-40 to 185°F)				
Operating Temperature		-40 to +65°C (-40 to 149°F)***		- 40 to +75°C (-40 to 167°F)**		
Humidity				5% to 95% (non-condensing)		

*Since PoE is not isolated from the power supply, it is recommended to check grounding polarity along the line or to use isolated (In-Out) or floating power source. When two negative DC power supplies are needed ("+" poles are connected together to ground), an additional kit (PF-2-48V-DUAL-INPUTS-KIT, ordered separately) should be used for protecting the batteries in case of power level difference between the 2 sources. For negative DC power support by dual-input devices, see Table 9.

**Up to +85°C for model PF-2/ETR/WR/3SFP/8UTP/H for up to 12 hours

***Up to +75°C for model PF-2/ETR/WDC/12SFP/8UTP

PowerFlow-2
Managed Ruggedized Ethernet Switch with Power over Ethernet

Table 4. Power, Physical, and Environmental Specifications (Injectors)

Specifications		PF-2/ETR/WDC/1UTP/1PU	PF-2/ETR/48VDC/1UTP/1PAM	PF-2/ETR/48VDC/2U/2PBE
Power	Power Supply*	Dual inlet 12/24/48VDC	Single inlet 48VDC	Dual inlet 48VDC
	Power Consumption	See Table 5	See Table 7	See Table 8
Size	Height / cm(inch)	14.2 (5.6)	10.3 (4.1)	15.2 (5.9)
	Width / cm(inch)	3.16 (1.24)	3.0 (1.2)	3.86 (1.52)
	Depth / cm(inch)	10.6 (4.17)	7.0 (2.8)	10.6 (4.17)
	Weight / kg (lb.)	0.425 (0.93)	0.215 (0.48)	0.565 (0.22)
Storage Temperature		-40 to +85°C (-40 to 185°F)		
Operating Temperature		-40 to +75°C (-40 to 167°F)		
Humidity		-40 to +65°C (-40 to 149°F)		

*Since PoE is not isolated from the power supply, it is recommended to check grounding polarity along the line or to use isolated (In-Out) or floating power source. *Since PoE is not isolated from the power supply, it is recommended to check grounding polarity along the line or to use isolated (In-Out) or floating power source. When two negative DC power supplies are needed ("+" poles are connected together to ground), an additional kit (PF-2-48V-DUAL-INPUTS-KIT, ordered separately) should be used for protecting the batteries in case of power level difference between the 2 sources. For negative DC power support by dual-input devices, see Table 9.*

Table 6.   PF-2/ETR/WR/3SFP/8UTP/H and PF-2/ETR/WR/3SFP/8UTP/HV Power Consumption

Input Voltage	Consumption
110VAC	9.3W
220VAC	9.2W
24VDC (/H only)	9.6W
48VDC (/H only)	11.1W

Table 5.   PF-2/ETR/WDC/1UTP/1PU Power Consumption

Input Voltage	Mode	Input Power Consump-tion	Device Power Consump-tion	PoE Power Budget	Boost Efficiency
12VDC	30W (2 Pair)	33.9W	1.1W	30W	91.46%
24VDC	30W (2 Pair)	33W	1.4W	30W	94.90%
48VDC	30W (2 Pair)	33.2W	1.9W	30W	95.80%
12VDC	60W (2 Pair)	67.1W	1.1W	60W	90.90%
24VDC	60W (4 Pair)	65.2W	1.4W	60W	94.10%
48VDC	60W (4 Pair)	64.7W	1.9W	60W	95.50%

Table 7. PF-2/ETR/48VDC/1UTP/1PAM Power Consumption

Input Voltage	Consumption
48VDC (2 pairs)	1.1W
48VDC (4 pairs)	2.8W

PowerFlow-2
Managed Ruggedized Ethernet Switch with Power over Ethernet

Table 8. Power Consumption for other Options

Device	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget
PF-2/ETR/48VDC/8SFP/8UTP/8PH	48 VDC*	255.2W	15.2W	240W
PF-2/ETR/48VDC/3SFP/4PH4PAM				
PF-2/ETR/48VDC/3SFP/8PH	48 VDC*	255.2W	9.6W	240W
PF-2/ETR/WDC/3SFP/8PH	24 VDC	194.2W	10.8W	180W
	48 VDC	196.0W	11.5W	180W
PF-2/ETR/WDC/12SFP/8UTP	12 VDC		14.3	
	24 VDC	-	14.2	-
	48 VDC		15.8W	
PF-2/ETR/48VDC/8SFP/16PH	48 VDC*	387W	20W	360W
PF-2/ETR/48VDC/2SFP/4PU	48 VDC	249.6W	9.6W	240W
PF-2/ETR/48VDC/2U/2PBE	54 VDC	188W	1.6W	180W
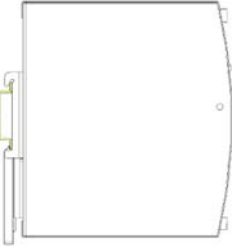
*Note: In order to ensure 30W per port, the device must be powered by a power source with minimum of 50 VDC.
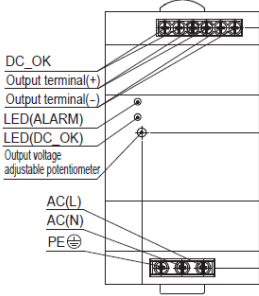
Table 9. Negative DC Power Support by Different Models

Model	Power Input		
	Dual -48V (via adaptor)	Single -48V	-48V not allowed
PF-2/ETR/48VDC/8SFP/8UTP/8PH	v	v	
PF-2/ETR/48VDC/3SFP/4PH4PAM	v	v	
PF-2/ETR/48VDC/3SFP/8PH	v	v	
PF-2/ETR/WDC/3SFP/8PH	v	v	
PF-2/ETR/WDC/12SFP/8UTP	v	v	
PF-2/ETR/48VDC/8SFP/16PH			v
PF-2/ETR/48VDC/2SFP/4PU			v
PF-2/ETR/48VDC/2U/2PBE		v	
PF-2/ETR/WDC/1UTP/1PU	v	v	
PF-2/ETR/48VDC/1UTP/1PAM		v	
PF-2/ETR/WR/3SFP/8UTP/H and PF-2/ETR/WR/3SFP/8UTP/HV	v	v	

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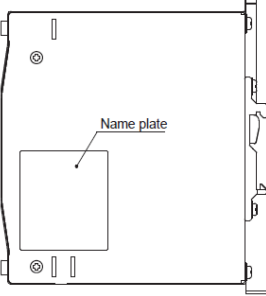
Table 8. AC/DC Power Supplies

		SF-AC-48VDC-240W	SF-AC-48VDC-480W
Output	DC Output	48V	48V
	Maximum Rated Current	5A	10A
	Ripple and Noise	≤480mV	≤240mV
	Voltage ADJ. Range	48V~56V	45.0V~55.2V
	Voltage Accuracy	±3.0%	±1.0%
	Line Regulation	±0.5%	±0.4%
	Load Regulation	±1.0%	±0.63%
Input	Voltage Range	85 ~264 VAC or 100 ~275 VDC	85~264 VAC or 88 ~350 VDC
	Frequency Range	47~63Hz	45~66 Hz
	Efficiency (typical)	93%	93%
	AC Current (max.)	<3.0 A/100Vac <1.5A/230Vac	<4.6 A/115Vac <2.3 A/230Vac
	Inrush Current (Typical)	＜20A/110Vac ＜40A/230Vac	＜20A/115Vac ＜40A/230Vac
Protection	Overload protection	110%~150% of rated current, Constant current limiting for some time (150% of rated current, last 3S) then PS stop working for 7S	Works over 101% of peak current and recovers automatically
	Over voltage	58~63V, constant voltage, Auto recovery	57.6~67.2V , constant voltage, Auto recovery
	DC-OK relay contact rating	Max 30V/1A or 60V/0.3A or 30Vac/0.3A	Max 30V/1A or 30Vac/0.5A
Environ-ment	Operating amb. Temp. & Hum.	-25℃~70℃; 20%~90%RH (Non condensing)	-25℃ to +70℃, 20% - 90%RH (Non condensing),
	Storage Temp. & Hum.	-40℃~85℃; 5%~95%RH (Non condensing)	-40℃ to +85℃, 20% - 90%RH (Non condensing)
Safety &EMC	Safety Standards	meet UL508, UL60950, EN60950	UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX
	EMC Emission	Compliance to EN55022, EN55024, FCC PART 15 Class B	Compliance to FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B
	Harmonic Current	Compliance to EN61000-3-2, CLASS A	Compliance to IEC61000-3-2（Class A)
Dimensions (W*H*D)		45*124*119 mm	70*124*117 mm

Managed Ruggedized Ethernet Switch with Power over Ethernet

Ordering

The information below represents examples of supported configurations. For additional configuration options, please contact your local RAD partner.

SWITCHES

PF-2/ETR/48VDC/3SFP/8PH

PF-2/ETR/48VDC/8SFP/16PH

PF-2/ETR/48VDC/8SFP/8UTP/8PH

PF-2/ETR/48VDC/2SFP/4PU

PF-2/ETR/WR/3SFP/8UTP/H

PF-2/ETR/WR/3SFP/8UTP/HV

PF-2/ETR/WDC/3SFP/8PH

PF-2/ETR/WDC/12SFP/8UTP

PF-2/ETR/48VDC/3SFP/4PH4PAM

INJECTORS

PF-2/ETR/WDC/1UTP/1PU

PF-2/ETR/48VDC/1UTP/1PAM

PF-2/ETR/48VDC/2U/2PBE

ORDERING OPTIONS

Some options are not supported by all models. Some option combinations are invalid or may require a minimum order. To determine the BOM for your application, please contact your local RAD partner.

Power Supply	48R	Dual-inlet 48 VDC
	WDC	Dual inlet 12/24/48 VDC
	WR	Wide range dual inlet 48VDC or single 110/220 VAC/VDC
Ethernet Ports	1PAM	one 10/100/1000Base-T PoE+ port (30W, Airmux support)
	1PU	one 10/100/1000Base-T PoE++ (72W) port
	1UTP	one 10/100/1000Base-T port
	2U	2 x 10/100/1000/2.5G/5G/10G Base-T ports,
	2PBE	2 x 10/100/1000/2.5G/5G/10G Base-T IEEE802.3af/at/bt PoE type 4 (90W/port)
	2SFP	2 x 100/1000Base-X SFP ports
	3SFP	3 x 100/1000Base-X SFP ports
	4PU	4 x PoE++ 10/100/1000Base-T ports, supporting up to 240W on the device
	4PH4PAM	4 x 10/100/1000Base-T PoE+ ports, 4 x 10/100/1000BaseT Airmux PoE (240W) ports
	8PH	8 x 10/100/1000Base-T PoE+ (240W) ports
	8SFP	8 x 100/1000Base-X SFP ports
	16PH	16 x 10/100/1000Base-T PoE+ (240W) ports
	8UTP	8 x 10/100/1000Base-T ports, compliant with IEC61850-3 and IEEE1613
	12SFP	12 x 100/1000Base-X SFP ports

SUPPLIED ACCESSORIES

PF-CBL-RJ45-DB9
Console cable RJ-45 to DB-9

PF-2-TB
Terminal block for power input connector as per specific device

Mounting kits for installing PowerFlow devices on a DIN rail (depending on the device type):

PF-2-DIN-RAIL-KIT-50.5x30mm
Mounting kit for installing a PF-2/ETR/WDC/1UTP/1PU or PF-2/ETR/48VDC/1UTP/1PAM device on a DIN rail – 50.5 x 30 mm with 3 screws

PF-2-DIN-RAIL-KIT-50.5x54mm
Mounting kit for installing a PF-2/ETR/48VDC/3SFP/8PH, PF-2/ETR/WDC/3SFP/8PH, PF-2/ETR/48VDC/3SFP/4PH4PAM, PF-2/ETR/WR/3SFP/8UTP/H or PF-2/ETR/48VDC/2SFP/4PU device on a DIN rail – 50.5 x 54 mm with 3 screws

PF-2-DIN-RAIL-KIT-130x52mm
Mounting kit for installing a PF-2/ETR/48VDC/8SFP/8UTP/8PH device on a DIN rail – 130 x 52mm with 8 screws, Phoenix Contact

OPTIONAL ACCESSORIES

Mounting Kits

PF-2-WALL-MOUNT-KIT-184X30MM
Mounting kit for installing PF-2/ETR/WDC/1UTP/1PU or PF-2/ETR/48VDC/1UTP/1PAM on a wall – 184 x 30 mm with 2 screws

PF-2-WALL-MOUNT-KIT-184X50MM
Mounting kit for installing PF-2/ETR/48VDC/3SFP/8PH, PF-2/ETR/WDC/3SFP/8PH, PF-2/ETR/48VDC/3SFP/4PH4PAM, PF-2/ETR/WR/3SFP/8UTP/H or PF-2/ETR/48VDC/2SFP/4PU on a wall – 184 x 50 mm with 2 screws

PF-2-WALL-MOUNT-KIT-76X75MMX2
Mounting kit for installing PF-2/ETR/48VDC/8SFP/8UTP/8PH on a wall – 2 x 76 x 75 mm with 4 screws

RM-DIN-SINGLE
Mounting kit for installing a DIN rail device in a 19/23-inch rack

RM-DIN-19
Mounting kit for installing multiple DIN rail devices in a 19-inch rack

External Power Supplies and Accessories

SF-AC-48VDC-480W
External DIN rail AC to 48 VDC power supply, 480 W

SF-AC-48VDC-240W
External DIN rail AC to 48 VDC power supply, 240 W
Notes:

For performance guaranteed operation of PF-2 product line it is recommended to use RAD SF-AC Power supplies.

SF-AC Power supplies have the possibility to work in load sharing, in applications where double SF-AC Power supplies are used per PowerFlow-2 switch.

PF-2-48V-DUAL-INPUTS-KIT

Protection kit (needed for installation of two negative -48 VDC power supplies)

PF-2-TB2
PowerFlow Terminal Block connector 2PIN for PF-2/ETR/WR/3SFP/8UTP/H

PF-2-TB6
PowerFlow Terminal Block connector 6PIN for all DIN rail type devices

CBL-PS480/250W/TBF6/OPEN/20CM

Cable for connecting two SF-AC-48VDC power supplies to one PowerFlow-2 devices with open wires at PS side, 20 cm long

CBL-PS480/250W/TBF6/OPEN/60CM

Cable for connecting two SF-AC-48VDC power supplies to one PowerFlow-2 devices with open wires at PS side, 60 cm long

Transceivers

For the list of available transceivers, see the **Pluggable Transceivers data sheet** at **www.rad.com**

*Note: It is strongly recommended to order this device with **original** RAD SFPs **installed**. This will ensure that prior to shipping, RAD has performed comprehensive functional quality tests on the entire assembled unit, including the SFP devices. RAD cannot guarantee full compliance to product specifications for units using non-RAD SFPs.*

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