DET-TRONICS®

A UTC Fire & Security Company

SPECIFICATION DATA

Power Supplies and Power Supply Monitoring for Eagle Quantum™ Premier Systems

EQ2100PS SERIES POWER SUPPLIES

EQ2100PS Series power supplies provide a 24 Vdc output and are available with 10, 30 or 75 ampere outputs. Input voltage is selectable for 120, 208 or 240 Vac. Refer to Table 1 for power supply specifications.

These power supplies require the use of a power supply monitor (EQ2100PSM) for NFPA compliance and FM approval. The power supply, power supply monitor and backup batteries must be located in a controlled non-hazardous environment.

FEATURES

(EQ 2100PS WITH EQ2100PSM)

- Monitors primary AC supply and battery integrity.
- Field addressable.
- Unique patented fault isolation.
- Utilizes state-of-the-art communication technology.
- EMI hardened.
- Power supplies available with 10, 30 or 75 ampere output for use with EQ2100PSM.
- Compatible with Eagle Quantum Premier and Eagle Quantum systems.
- FM Approved and CSA Certified for use in Eagle Quantum Premier and Eagle Quantum systems.

Table 1—Specifications of EQ2100PS Series Power Supplies

Characteristic	Power Supply		
	EQ2110PS	EQ2130PS	EQ2175PS
Input Voltage	120 vac	120/240 vac	120/240 vac
Input Frequency	60 Hz	60 or 50 Hz	60 or 50 Hz
Supply Rating	10 Amps	30 Amps	75 Amps
Maximum Alarm Current	10 Amps	30 Amps	75 Amps
Maximum Standby Current	3.33 Amps	10 Amps	25 Amps
Recharge Current	6.67 Amps	20 Amps	50 Amps
Maximum Battery Capacity	100 AmpHours	300 AmpHours	750 AmpHours
Maximum Deluge Standby Current	1 Amp	3 Amps	7.5 Amps

POWER SUPPLY MONITORING DEVICES

EQ2100PSM

The EQ2100PSM Power Supply Monitor is used in conjunction with EQ2100PS Series Power Supplies and backup batteries to provide an approved source of power for the system.

Since the power supply monitor resides on the communication loop (LON), any trouble condition related to system power will immediately be reported to the controller. Status conditions being monitored include power supply failure, loss of AC power, loss of battery power, power ground fault, AC voltage, DC voltage and battery charging current levels.

The power supply fault condition is set when the battery sources a current level higher than the power supply threshold value for 20 seconds. The two switches shown in Figure 1 set the power supply threshold value. The available settings are:
SW-1 open / SW-2 open = 200 mA
SW-1 closed / SW-2 open = 400 mA
SW-1 open / SW-2 closed = 800 mA
SW-1 closed / SW-2 closed = 2 Amps.

The threshold value must be less than the total standby current to ensure fault indication if the power supply fails.

The power supply monitor must be located in a controlled non-hazardous area and must be mounted in a suitable metallic nationally recognized test laboratory (NRTL) labeled NEMA rated enclosure (enclosure not included).

Three LEDs located on the power supply monitor's printed circuit board provide a visual indication of status conditions:

Green — Power-on indicator.
Red — Indicates a trouble condition.
Yellow — Used for factory diagnostic purposes.

EQ2200IDCGF

The Initiating Device Circuit Ground Fault Monitor responds to the presence of a ground fault within the power circuitry of the system. It provides a supervised dry contact input and ground fault monitoring circuitry for indicating a power supply trouble condition. It is intended for use with a third party power supply.

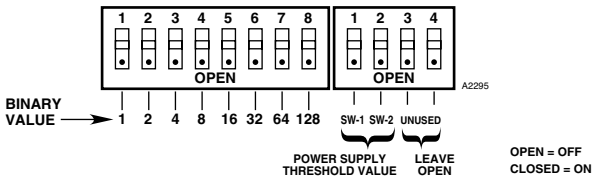
The device is housed in an explosion-proof NEMA 4X rated enclosure for installation in hazardous locations and can be located at any point on the communication loop.

Device Output

As LON based devices, the output of either the EQ2100PSM or EQ2200IDCGF is a status message that is transmitted on the communication loop to the controller. Both devices support ANSI/NFPA 72 Class A, Style 7 communication with the controller.

ADDRESSABILITY

Each device on the LON/SLC must be assigned a unique address. This is accomplished by setting DIP switches on the module's circuit board. See Figure 1. Each rocker switch has a specific binary value. The node address is equal to the added value of all closed rocker switches. All open switches are ignored. The valid address range is from 5 to 250. Refer to manual number 95-8533 for Eagle Quantum Premier systems or manual number 95-8470 for Eagle Quantum systems.



NOTES: SWITCHES 1-8 SELECT THE LON ADDRESS.
DEVICE ADDRESS EQUALS THE ADDED VALUE
OF ALL CLOSED ROCKER SWITCHES.

SW-1 AND SW-2 SELECT THE POWER SUPPLY THRESHOLD VALUE:
SW-1 OPEN / SW-2 OPEN = 200 mA,
SW-1 CLOSED / SW-2 OPEN = 400 mA,
SW-1 OPEN / SW-2 CLOSED = 800 mA,
SW-1 CLOSED / SW-2 CLOSED = 2 AMPS.

LEAVE UNUSED SWITCHES 3 AND 4 IN THE OPEN POSITION.

Figure 1—Field Device Address Switches for EQ2100PSM

Fault Tolerant Network

Like other network devices, both power monitoring devices utilize a unique patented technique for detecting network wiring problems. This feature minimizes the possibility of a communication breakdown in the event of a wiring fault and can also serve as an aid in troubleshooting.

A single open or short on the network will not affect system communication between the field devices and the controller. System communication will continue until the wiring problem can be repaired.

EQ2220GFM

The EQ2220GFM Ground Fault Monitor provides ground fault monitoring in a system that includes a floating 24 Vdc power source. The device detects ground fault conditions on +/– power and all secondary I/O circuits. A positive or negative ground fault condition is indicated immediately by local LEDs, and by a relay contact after a 10 second time delay. The ground fault monitor is intended to be mounted in the same enclosure as the controller.

SPECIFICATIONS

EQ2100PS SERIES POWER SUPPLIES

INPUT VOLTAGE—
Selectable for 120, 208 or 240 Vac input power, ±10%.

INPUT FREQUENCY—
60 Hz ±5% standard, 50 Hz ±5% optional.

INPUT CURRENT—
EQ2110PS: 4 amperes at 120 Vac (60 Hz)
EQ2130PS: 11/6/6 amperes at 120/208/240 Vac*
EQ2175PS: 24/15/12 amperes at 120/208/240 Vac*.
*Specify 50 Hz or 60 Hz.

OUTPUT CURRENT—
EQ2110PS: 10 amperes at 24 Vdc
EQ2130PS: 30 amperes at 24 Vdc
EQ2175PS: 75 amperes at 24 Vdc.

POWER CONSUMPTION—
EQ2110PS: 46 Watts
EQ2130PS: 140 Watts
EQ2175PS: 349 Watts.

TEMPERATURE RANGE—
Operating: +32°F to +122°F (0°C to +50°C)
Storage: -40°F to +185°F (-40°C to +85°C).

CERTIFICATION—

FM: Approved for ordinary locations and performance verified per ANSI / NFPA-72-2002.

CSA: Certified for ordinary locations.

HUMIDITY RANGE—
5 to 95% RH, non-condensing.

DIMENSIONS—
in Inches (Centimeters)

	Width	Height	Depth
EQ2110PS:	19 (48.3)	7 (17.8)	15 (38.1)
EQ2130PS:	19 (48.3)	14 (35.6)	15 (38.1)
EQ2175PS:	19 (48.3)	14 (35.6)	15 (38.1)

NOTE

Power supplies are designed for mounting in a standard 19 inch rack. Optional mounting hardware is available for floor or wall mount applications.

SHIPPING WEIGHT—
EQ2110PS: 50 pounds (22.5 kilograms)
EQ2130PS: 115 pounds (52 kilograms)
EQ2175PS: 150 pounds (68 kilograms).

EQ2100PSM

INPUT- VOLTAGE—
24 Vdc nominal, 18 to 30 Vdc.

POWER CONSUMPTION—
2.0 watts maximum.

MEASUREMENT RANGE—
AC Voltage: 240 Vac maximum.
DC Battery Charging Current: 75 amperes maximum.

OUTPUT—
Digital communication, transformer isolated (78.5 k bps).

TEMPERATURE RANGE—
Operating: +32°F to +122°F (0°C to +50°C)
Storage: -67°F to +185°F (-55°C to +85°C).

HUMIDITY RANGE—
5 to 95% RH, non-condensing.

CERTIFICATION—

FM: Approved for ordinary locations and performance verified per ANSI / NFPA-72-2002.

CSA: Certified for ordinary locations.

CE: Conforms to all relevant European norms.

DIMENSIONS—
See Figure 2.

SHIPPING WEIGHT—
5.0 pounds (2.3 kilograms).

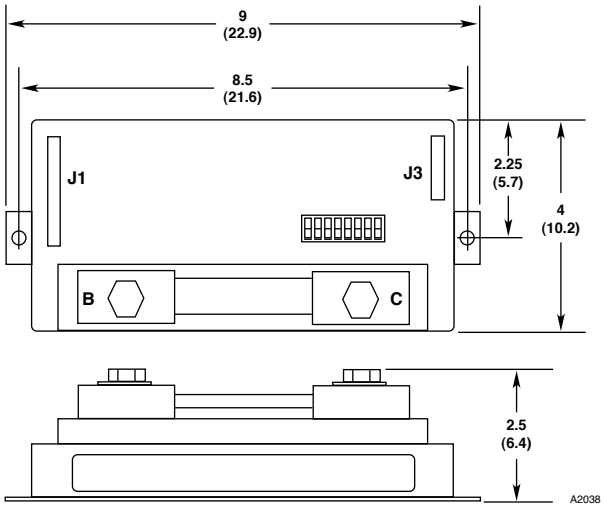


Figure 2—Dimensions of Power Supply Monitor in Inches (Centimeters)

EQ2200IDCGF

INPUT VOLTAGE—
24 Vdc nominal, 18 to 30 Vdc. 10% overvoltage will not cause damage to the equipment.

INPUT POWER—
4.0 watts maximum.

INPUT—
Supervised non-incendive dry contact input. EOL resistor required.

OUTPUT—
Digital communication, transformer isolated (78.5 kbps).

TEMPERATURE RANGE—
Operating: –40°F to +167°F (–40°C to +75°C).
Storage: –-67°F to +185°F (–55°C to +85°C).

HUMIDITY RANGE—
5 to 95% RH, non-condensing.

CERTIFICATION—

FM / CSA: Class I, Div. 1, Groups B, C, D.
Class I, Zone 1, Group IIC.
Class II/III, Div. 1, Groups E, F, G.
Class I, Div. 2, Groups A, B, C, D (T4A).
Class I, Zone 2 IIC (T4).
Class II/III, Div. 2, Groups F & G (T4A).
NEMA/Type 4X.

CENELEC/CE: ATEX/EMC Directive Compliant.
CE 0539 Ex II 2 G
EEx d IIC T4-T6
DEMKO 02 ATEX 131321X
T6 (Tamb = –55°C to +50°C).
T5 (Tamb = –55°C to +65°C).
T4 (Tamb = –55°C to +75°C).
IP66.

Special Conditions for Safe Use (X):
The device has an ambient temperature rating for performance of –40°C to +75°C.

DIMENSIONS—
See Figure 3.

SHIPPING WEIGHT—
Aluminum: 5.0 pounds (2.3 kilograms)
Stainless Steel: 10.0 pounds (4.5 kilograms).

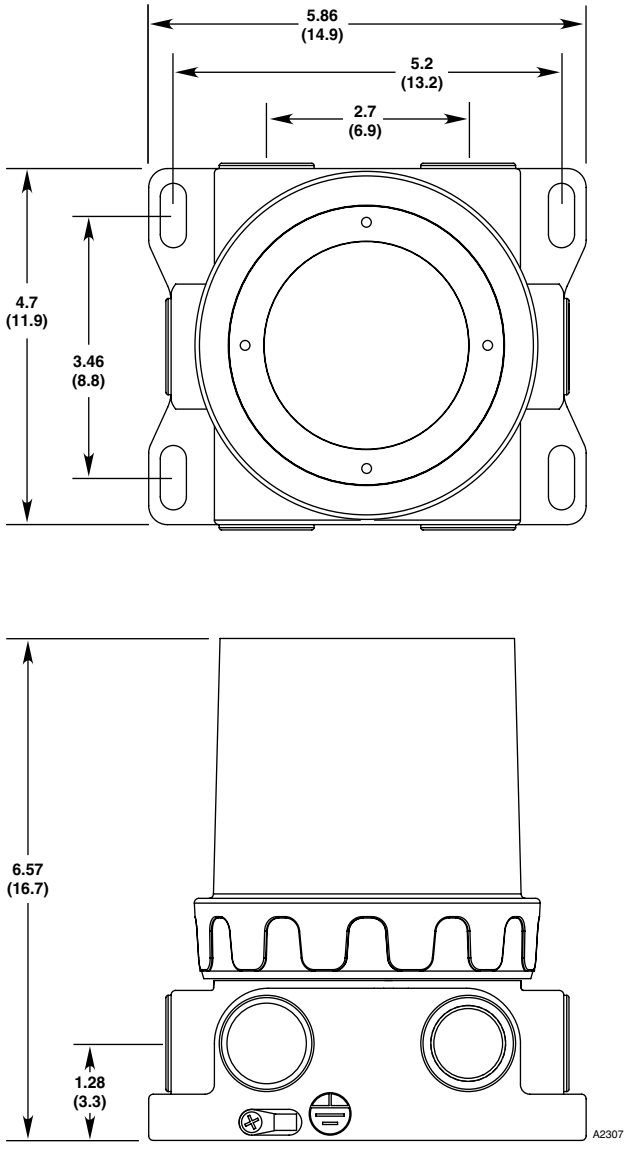


Figure 3—Dimensions of IDCGF in Inches (Centimeters)

EQ2220GFM

INPUT VOLTAGE—
24 Vdc nominal, 18 to 30 Vdc. 10% overvoltage will not cause damage to the equipment.

INPUT POWER—
1.0 watt maximum.

OUTPUT—
Form C NO/NC relay contact rated 1 ampere (resistive) at 30 Vdc maximum.

TEMPERATURE RANGE—
Operating: –40°F to +185°F (–40°C to +85°C).
Storage: –-67°F to +185°F (–55°C to +85°C).

HUMIDITY RANGE—
5 to 95% RH, non-condensing.

CERTIFICATION—

FM / CSA: Class I, Div. 2, Groups A, B, C, D (T4).
Class I, Zone 2 IIC (T4).

CENELEC/CE: ATEX/EMC Directive Compliant.
CE 0539 Ex II 3 G
EEx nC IIC T4
DEMKO 03 ATEX 136222U
T4 (T_{amb} = –40°C to +85°C).

Special Conditions for Safe Use:
The EQ2220GFM shall be installed in an enclosure that complies with all relevant requirements of EN50021:1999 and provides a degree of ingress protection of at least IP54.

The EQ2220GFM may only be installed, connected, or removed when the area is known to be non-hazardous.

DIMENSIONS—
See Figure 4.

SHIPPING WEIGHT—
0.5 pounds (0.2 kilograms)

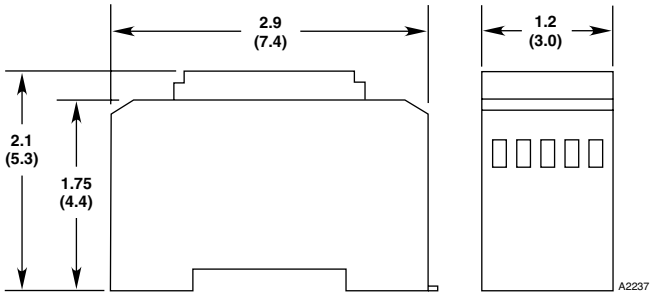


Figure 4—Dimensions of Ground Fault Monitor in Inches (Centimeters)

ORDERING INFORMATION

When ordering, please specify:

EQ2110PS	10 amperes at 24 Vdc power supply
EQ2130PS	30 amperes at 24 Vdc power supply
EQ2175PS	75 amperes at 24 Vdc power supply
EQ2100PSM	Power Supply Monitor
EQ2200IDCGF	IDC Ground Fault Monitor
EQ2220GFM	Ground Fault Monitor

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