INSTRUCTIONS

DET-TRONICS

Power Distribution Module

EQ3800

DESCRIPTION

The EQ3800 Power Distribution Module (PDM) integrates isolation, conditioning, ground fault monitoring, and distribution to five outputs that power the controller, cabinet devices, and field devices. The PDM is designed to provide continuous power to the outputs by relying upon two independent 24 Vdc input power sources. One power source must be derived from a line power source and the other source must be from a backed-up power source.

FEATURES

- Automatic Resetting Overload Protection for field devices (No fuses to replace)
- Ground Fault Monitoring
- Visual LED Indicators for Power and each power input
- Visual LED Indicators for Ground Faults
- Anodized Aluminum heat sink
- Panel Mount

SPECIFICATIONS

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

OUTPUT VOLTAGE—
27.5 Vdc +/- 0.5 Vdc.

"CONTROLLER" OUTPUT CURRENT RATING—
0.3 Ampere per Controller, 2 Controllers maximum (0.6 Ampere).

"FIELD POWER" OUTPUT CURRENT RATING—
1.5 Amperes maximum (each).

"LOCAL POWER" OUTPUT CURRENT RATING—
10 Amperes alarm current,
2 Amperes standby current.

CURRENT ALLOCATIONS AMONG OUTPUTS—

Alarm Current: 10 Amperes, 15 minutes maximum.
Controller current + Field power current 1 + Field power current 2 + Local output current ≤ 10 Amperes.

Note: Field power 1 and Field power 2 must not exceed 1.5 Amperes each.

Standby current: 2 Amperes, no time limit.
Controller current + Field power current 1 + Field power current 2 + Local output current ≤ 2 Amperes.

Note: Field power 1 and Field power 2 must not exceed 1.5 Amperes each, or 2 Amperes combined.

TEMPERATURE RANGE—
Operating: –40°F to 176°F (–40°C to 80°C)
Storage: –67°F to 185°F (–55° to 85°C).

HUMIDITY—
5 to 95% RH (non-condensing).

VIBRATION—
FM3260, CSA C22.2 #152, EN 61779-4.

DIMENSIONS—
See Figure 1.

WEIGHT—
3.25 lbs. (1.48 kg).

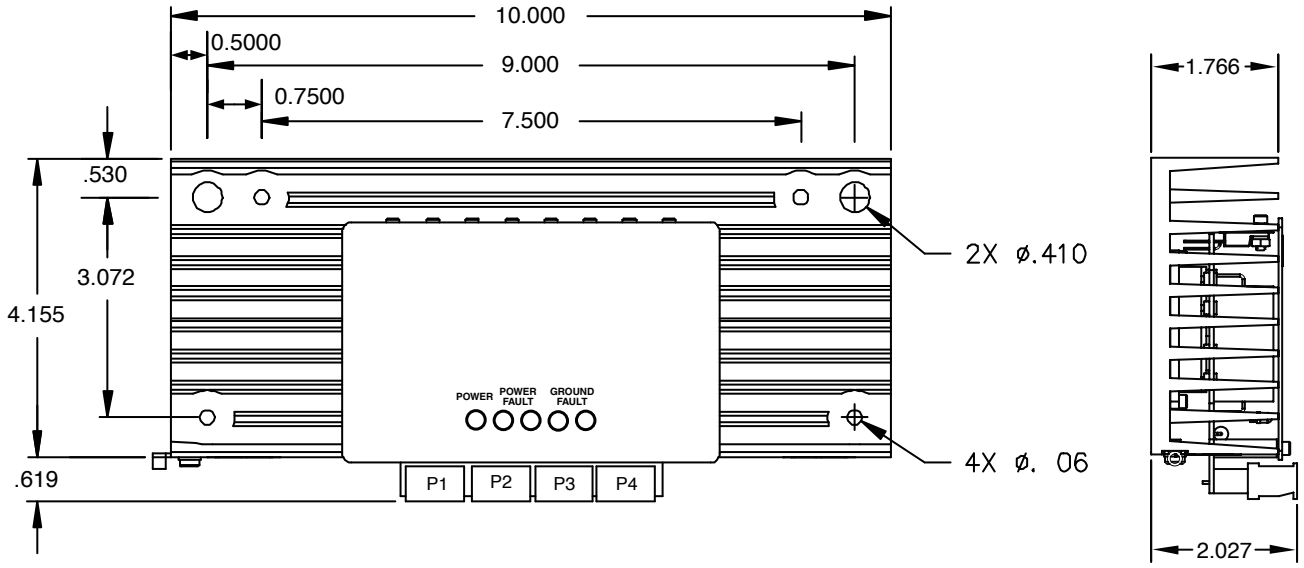

Figure 1—Dimensions of Power Distribution Module in Inches

CERTIFICATION—

FM / CSA: Class I, Div. 2, Groups A, B, C, D (T3A)
Class I, Zone 2, Group IIC (T3)

ATEX: ATEX Directive Compliant
Ⓔx II 3 G
Ex nA IIC Gc
UL 20 ATEX 138864X
Tamb = –40°C to +80°C

IEC: IECEx UL 20.0112X

Compliance to:
EN IEC 60079-0:2018; 60079-15:2010
IEC 60079-0:2017 (Ed. 7); 60079-15:2010 (Ed. 4)

CE: EMC Directive Compliant.

Refer to the Eagle Quantum Premier manual (form number 95-8533) for system certification details.

Special Conditions of Use:

The PDM shall be used in an area of no more than pollution degree 2 conforming to IEC 60660-1, and in an enclosure that complies with all relevant requirements of IEC/EN 60079-15, rated at least IP54; and shall be connected to supply circuits where the rated voltage cannot be exceeded by 40% caused by transient disturbances.

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

For ambient temperatures below -10°C use field wiring suitable for the expected conditions, and for ambient temperatures above +60°C use field wiring suitable for 20°C above the maximum expected conditions.

The screw terminals are to be tightened with a minimum torque of 0.5 Nm.

Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

Monitoring Integrity of Signaling Channels

Signaling Path	**Circuit**	**Designation**
Power Distribution Module, Input Power	Supervised	Loss of power per ANSI/NFPA 72:2010, Cl. 10.17.3.
Power Distribution Module, Controller Power & Local Device Power Output	Not Limited, Ground Fault Monitored	Unsupervised per ANSI/NFPA 72:2010, Cl. 10.17.1, exceptions #10.17.1.8. & #10.17.1.9, when installed within a common enclosure or located within 20 ft (6M) in conduit.
Power Distribution Module, Field Device Power Output	Not Limited, Ground Fault Monitored	Single open or ground-fault per ANSI/NFPA 72:2010, Cl. 10.17.1.

OPERATION

The PDM is designed to provide isolated power to a limited number of devices that make up a small Eagle Quantum Premier system. This device relies upon two 24 vdc power sources in order to provide continuous power to the system.

One power source must be derived from a line voltage power source and the other power source must be driven from a continuously backed-up power source. The dual power sources must be capable of individually providing continuous input power to the PDM, thereby ensuring uninterrupted power for operating the connected equipment.

If either PDM input power source fails, the PDM will signal the fault condition to the controller by removing power on controller power input 2 and will illuminate the appropriate power fault LED. The controller will annunciate a power fault condition and actuate the Fault relay (refer to Table 1).

The EQ3800 PDM signals an input power fault or ground fault condition as a common fault and is displayed on the EQP Controller as “Power Fail 2”.

For additional diagnostics information, refer to the LEDs on the PDM module (see Table 1).

INSTALLATION

ENCLOSURE REQUIREMENTS

The PDM must be properly installed in a suitable metallic NRTL listed and Type rated enclosure. The enclosure must provide space to accommodate the module and the wiring. The enclosure should be rated for the temperature range of the location plus the temperature rise of the electronics installed inside the enclosure.

NOTE

The enclosure must provide a terminal for earth ground.

MOUNTING

To ensure that heat is properly dissipated within the enclosure, the PDM must be bolted to either a base plate or to the enclosure, with thermal grease applied to the heat sink.

Table 1—LED Status Indications

LED Color	Status	LED Position	Description
Green	Power		PDM is powered up
Yellow	Power Fault	Left	Power input 1 has no voltage
Yellow		Right	Power input 2 has no voltage
Yellow	Ground Fault	Left	Ground fault has been detected on a Positive Output
Yellow		Right	Ground fault has been detected on a Negative Output

WIRING

Wire the device as shown in Figure 2.

NOTE

Wiring and equipment installation must meet or exceed the latest revisions of the appropriate NFPA Standards, National Electrical Code (NEC), and Authorities Having Jurisdiction (AHJ).

NOTE

All wiring shall be installed in accordance with the manufacturer's recommendations (Refer to the Eagle Quantum Premier manual (form number 95-8533) for wiring and installation details).

System Wiring (ATEX)

For the connection of modules within the EQP system, use fixed installed wiring, size 14-18 AWG (2.5 - 1.0 mm^2).

For ambient temperatures below -10°C, use field wiring suitable for the expected conditions, and for ambient temperatures above +60°C, use field wiring suitable for 20°C above the maximum expected conditions.

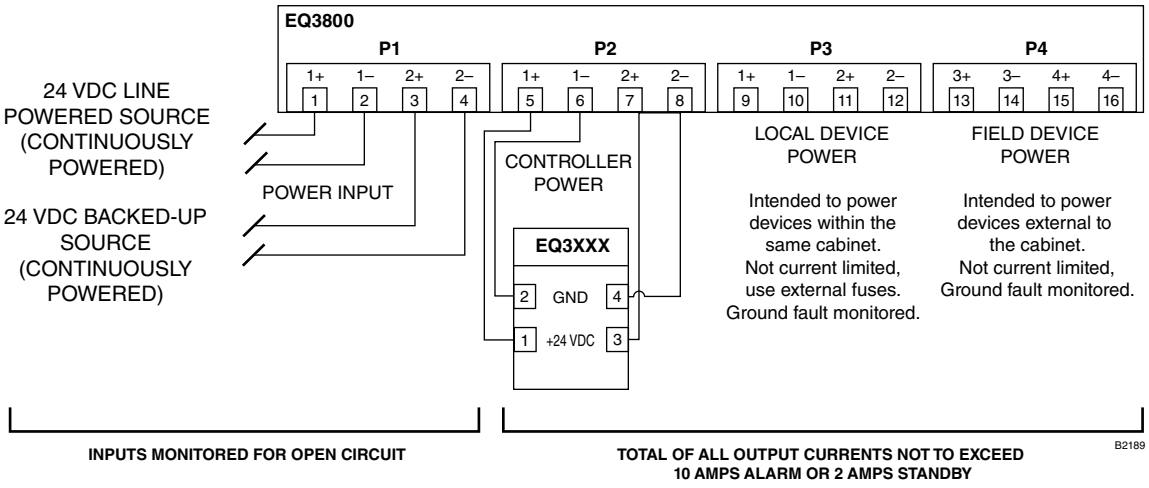

Figure 2—Power Distribution Module Wiring Diagram

ORDERING INFORMATION

MODEL	DESCRIPTION		
EQ3800	Power Distribution Module, Standard		
	TYPE	**MOUNTING OPTION**	
	N	None	
		TYPE	**APPROVAL**
		A	FM/CSA
		W	FM/CSA/ATEX/IECEx
		E	ATEX/IECEx

95-8558

FlexSonic® Acoustic
Leak Detector

X3301 Multispectrum
IR Flame Detector

PointWatch Eclipse® IR
Combustible Gas Detector

FlexVu® Universal Display
with GT3000 Toxic Gas Detector

Eagle Quantum Premier®
Safety System

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