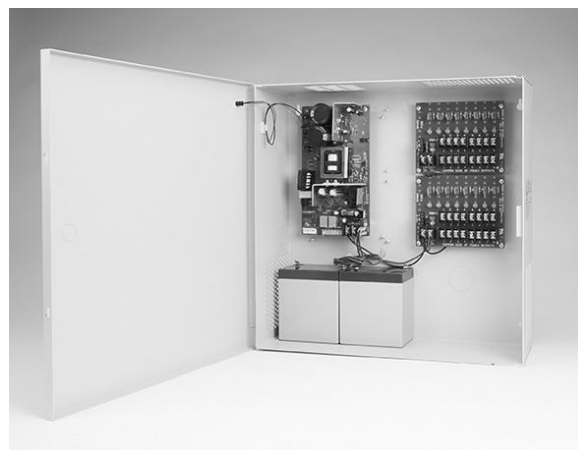


AQD6 Series 12V/24V Power Supply/Charger

Features

- Small – Light – Efficient – Clean Power
- Field Selectable AC Input: 120/240 VAC
- 12 VDC at 6A / 24 VDC at 6A, Selectable
- Tolerates brownout or overvoltage input $\pm 15\%$ of nominal voltage
- High efficiency: 90% at 25V output, full load
- Battery Charger Maximum Charge Current: 0.7A
- Dedicated battery charging circuit for Wet, AGM, and Sealed Lead Acid Battery(s)
- Power Limited Output with Thermal Protection
- Reverse Battery Protection
- Battery Online, No Drop or Switchover with AC Power Fail
- Quality Manufactured in the USA
- UL Listed Access Control & Burglar Alarm systems
- Set of Form "C" Relay Contacts Indicates AC Power Status
- Set of Form "C" Relay Contacts Indicates Low Battery
- Amber LED Indicates Power Normal
- DC Output is Class II Power Limited
- Lifetime Warranty



AQD6-16C

Ordering examples:

AQD6B	Supervised Power Supply/Charger module without an enclosure.
AQD6	Supervised Power Supply/Charger module with a 14" x 14" x 4.75" enclosure.
-8F	AQD6 with one PDB-8F
-8C	AQD6 with one PDB-8C
-16F	AQD6 with two PDB-8F
-16C	AQD6 with two PDB-8C
-8F8R	AQD6 with one PDB-8F8R
-8C1R	AQD6 with one PDB-8C1R

Description

The AQD6 series are heavy-duty, self-contained, efficient, clean, offline switching power supplies, with linear-type performance, and are jumper selectable between 12 VDC at 6A and 24 VDC at 6A. The AQD6 series have a dedicated lead acid battery(s) charger that obtains maximum battery life while providing 12 VDC or 24 VDC uninterruptible power for access control security systems. The field selectable AC input allows these power supplies to be powered anywhere in the world. The AQD6 series have exceptional brownout capability with operation down to 85% of nominal voltage. The AQD6 series have an extensive

filtering system that provides linear output performance, and they are electronically protected against battery reversal, shorting, or overloading. Power limited output with thermal protection is available with Models AQD6-8F, AQD6-8C, AQD6-16F, AQD6-16C, AQD6-8F8R, and AQD6-8C1R; non-power limited in Model AQD6. Each of these protective features will self-restore.

NOTE: Before connecting load and battery(s), the 12V/24V jumper is moved to the desired voltage.

CAUTION

Damage can occur when switched with DC output load. Proper voltage must be confirmed before connecting devices.

The AQD6 series are UL Listed and have additional supervisory features:

- Battery disconnect relay when battery(s) are depleted
- Set of Form "C" relay contacts that indicate AC power failure

Specifications

AC Input: L, N, G - 3P Terminal block

Safety block with recessed hardware insulation accepts up to 12 AWG

L= Line, N= Neutral, and G = Ground

AC Input 120–240 VAC / 240W

AC Input Frequency..... 50 to 60 Hz

AC LED Indicator (Panel mounted on the enclosure door)

The AC indicator is a green LED. This LED off with AC at the terminals would indicate a blown fuse link. A blown AC fuse link would indicate catastrophic failure and must be returned to the factory for repair.

AC Input Voltage Selection

CAUTION

To prevent damage, the power supply board must be configured for the proper voltage before applying line voltage.

NOTE: Once the link is cut, there is no conversion back to 120 VAC. There is a removable link located at the top right of the power supply board. This link is cut and removed to convert to 240 VAC.

DC Output Voltage Selector Jumper

CAUTION

To prevent damage, the DC load and battery(s) connections are removed before switching selector switch up or down.

The jumper is slightly left of center near the AC terminal block, and is marked with "VOLTAGE SELECT 12V / 24V". The jumper is moved to the appropriate pins to configure the output voltage.

DC Outputs: 2P Terminal block

NOTE: There is up to a 10-second delay for initial turn on.

Output voltage Nominal 12 VDC / 24 VDC

Output voltage Typical AC on 12.5V / 25.0V

Output range with rated load 12.0–13.0 VDC / 24.5–25.5 VDC

Output range on battery power 9.79–13.2 VDC / 19.6–26.4 VDC

Output continuous current (UL rating)..... 6A

Load regulation no load to max (no battery) ±0.2%

Output ripple full load 240 mV pp

Current Overload Short Circuit Protection Yes

Thermal runaway Protection Yes

Power Limited Output with Thermal Protection for Models AQD6-8F, AQD6-8C, AQD6-16F, AQD6-16C, AQD6-8F8R, and AQD6-8C1R.

Non power limited for Model AQD6

Current Overload and Thermal shutdown will auto-restart without removing load.

Ambient operating temperature range -20oC to +50oC

Product was not evaluated at UL for outdoor use.

DC LED Indicator (Adjacent to DC terminal block) Green

Battery Charging: (2P Terminal block marked [–Bat+])

CAUTION

To avoid spark, AC must be applied before connecting battery cable to battery.

Fault reporting relay rating: 32 VDC, 120 VAC, 1A

- Set of Form "C" relay contacts that indicate low battery(s)
- DC Output is Class II power limited.

Depending on load, low battery trouble indicates 50–75% battery capacity remaining. Input wiring to the unit should be enclosed in conduit secured firmly to the enclosure. The AQD6 cannot be used to power a mercantile bell.

The battery charger is precision set to float charge 12V or 24V sealed or wet lead acid batteries. A 12-inch battery cable assembly is provided that plugs from module to battery: Red (+), Black (–) Neg.

Battery(s), any type of lead acid 12V / 24V, 4 AH–40 AH

UL evaluated 72AH

Battery(s) recharge 700 mA max

Battery(s) average recharging current 250 mA

Battery(s) PTC self-resetting circuit breaker 6A PTC

Battery(s) Reverse hookup protection Yes, 4A PTC

To estimate the recharge time in hours for depleted battery(s), the AH rating is multiplied by 4 (AH x 4). As an example, a 12V system with two depleted 12V, 7 AH batteries would take about 28 hours to re-charge.

AQD6 Supervised Added Features:

UL Listed

Class II Power Limited Refer to DC outputs section

AC Status Output Relay: 3P Terminal block

AC Fail "C" contacts rating 32 VDC, 120 VAC, 1A

Three position AC fail terminal block marked "NO, C, NC" are shown in the Normal, energized, AC ON condition.

Battery LED Indicator Red

Battery Charge

Battery Max. Charge (no load) 13.7V / 27.4V

Battery Cutoff internal relay contacts 32 VDC, 120 VAC, 1A

Low Battery Cutoff..... 9V / 18 V for 12 V / 24V setting

Battery Cutoff Relay is normally energized for fail-safe operation.

Sealed lead acid batteries have a typical life of 3 to 5 years.

Physical

AQD6 Module Dimensions 7.36" L x 4.04" W x 1.75" H

Height includes 7/16" standoffs, not provided with module only.

Mounting Holes Center to Center 6.44" W x 3.41" H

AQD6 module only weight 12.4 oz

AQD6 in enclosure 14" x 14" x 3.50"

AQD6 in enclosure weight 6.85 lbs

UL Approvals for AQD6

UL 294, 6th Edition – Access Control System Unit

Endurance Test Level 1

Attack Test Level 1

Battery Standby Test Level 4

UL 603 – Power supplies for Use with Burglar-Alarm Systems

UL 1481 – Power Supplies for Fire-Protective Signaling Systems

ULC S318-96 – Power supplies for Burglar Alarm Systems

ULC S533-02 – Standard for Egress Door Securing and Releasing Devices

For ULC-S318-96 compliance, the power supply battery fail line must be connected to and monitored by a control panel trouble zone.

NOTE 1: The AQD6 uses a standard power supply enclosure, not an attack proof enclosure. As such, the AQD6 should not be used to power a mercantile bell.

NOTE 2: When using a battery that is not housed inside the power supply enclosure, the battery leads require protection from the enclosure via the use of conduit.

NOTE 3: When using the AQD6B in another enclosure, minimum standard spacing between live electrical circuits shall be taken into account.

Maintenance

The power supply and stand by battery(s) should be tested at least once a year as follows:

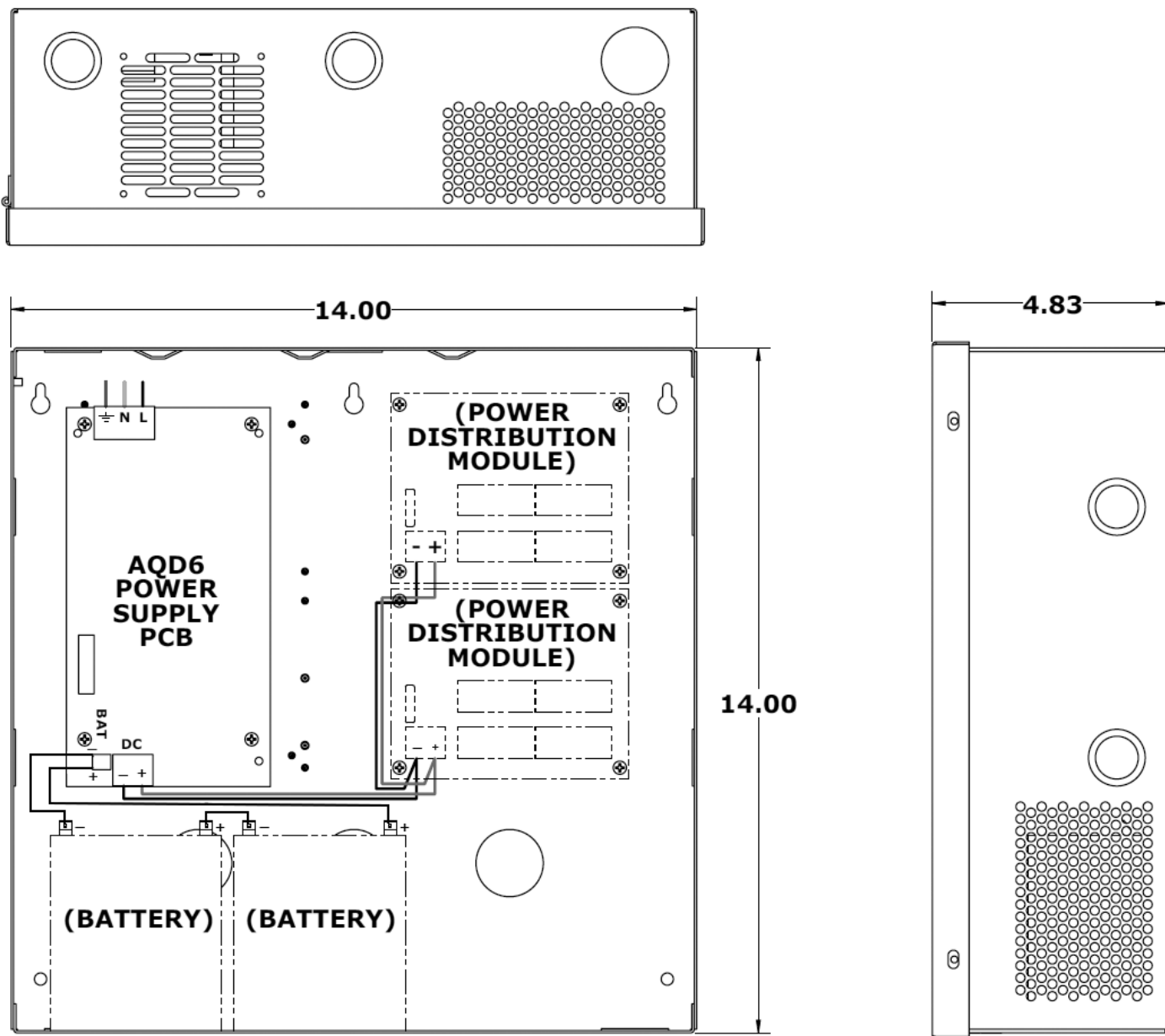
1. CHECK LED's for normal state: AC ON Green, Trouble Normal ON Green, DC ON Red.
2. CHECK output voltage with normal load (assures proper voltage to float charge batteries): For 12V setting, voltage should read between 13.6 VDC and 13.8 VDC; and for 24V setting, voltage should read between 27.1 VDC and 27.6 VDC.
3. DISCONNECT AC input: AC LED should be off, and all other LED's should remain normal.
4. CHECK DC output to be above 12.0 VDC for 12V setting and 24.0 VDC for 24V setting (checks standby batteries to be operational).
5. APPLY AC and VERIFY AC LED ON.

Battery Selection

The table below shows typical standby time in hours for various loads and batteries. The table works for either 12 VDC or 24 VDC. The AQD6 was evaluated at UL with a 75 Ah sealed lead acid battery.

Approximate Battery Standby Time Table with a reserve of 6A for 5 minutes for Alarm

Total Output in Amps	4 AH Battery Standby	7 AH Battery Standby	12 AH Battery Standby	24 AH Battery Standby	40 AH Battery Standby	75 AH Battery Standby
0.06	53	101	180	371	625	1180
0.125	25	48	86	178	300	566
0.25	13	24	43	89	150	283
0.50	6.4	12.1	21.6	44.5	74.9	142
1	3.2	6.0	10.8	22.2	37.5	71
2	1.6	3.0	5.4	11.1	18.7	35
3	1.1	2.0	3.6	7.4	12.5	24
4	0.8	1.5	2.7	5.6	9.4	18
5	0.6	1.2	2.2	4.4	7.5	14
6	0.5	1.0	1.8	3.7	6.2	12



AQD6 in an enclosure with two PDBs in a 24V Configuration

WARRANTY

The AQD6 is covered by the MagnaCare® lifetime replacement no fault warranty. No registration is required. Product will be replaced forever, for any reason, including but not limited to installation error, vandalism, or act of God. Replacement product is shipped at Securitron's expense next day air, if needed.

For more information, visit www.securitron.com