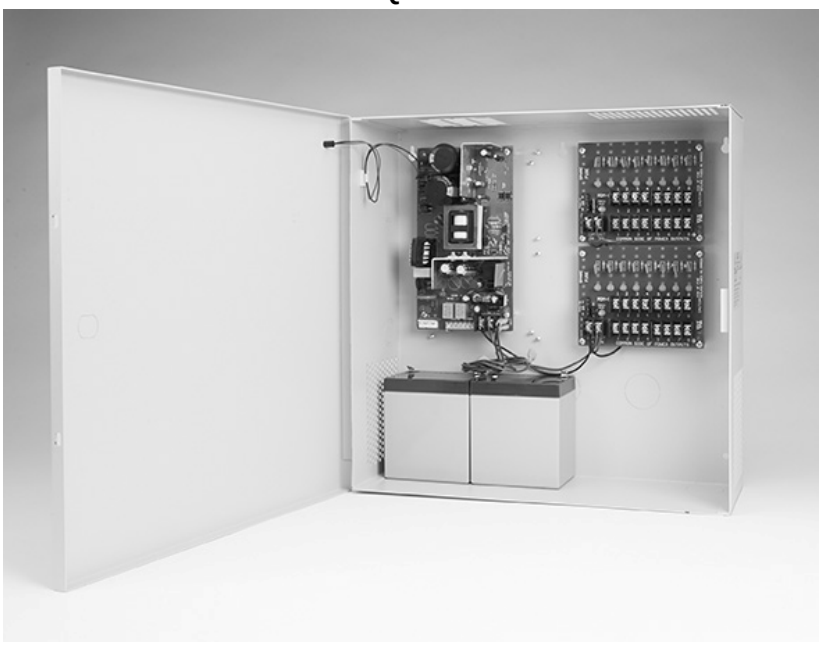
AQD6 Series 12/24 Power Supply/Charger

12VDC @ 6Amps / 24VDC @ 6 Amps Life Time Warranty

- **Small – Light – Efficient – Clean Power**
- **Field Selectable AC Input 115/230VAC**
- **12vdc 6A/24vdc 6A Selectable**
- **Tolerates brownout or overvoltage input ± 15% of nominal voltage**
- **High efficiency: 90% @ 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 Switch Over with AC Power Fail**
- **Quality Manufactured in the USA**
- **UL Listed Access Control & Burglar Alarm systems**
- **Relay "C" Contacts Indicates AC Power Status**
- **Relay "C" Contacts Indicates Low Battery Amber LED Indicates Power Normal**
- **DC Output is Class II Power Limited**

AQD6-16C



Ordering examples:

AQD6B	Supervised Power Supply/Charger module without an enclosure.
AQD6	Supervised Power Supply/Charger module with a 14"x14"x4.75" enclosure.
-8F -8C -16F -16C -8F8R -8C1R	AQD6 with one PDB-8F AQD6 with one PDB-8C AQD6 with two PDB-8F AQD6 with two PDB-8C AQD6 with one PDB-8F8R AQD6 with one PDB-8C1R

Description / Instructions

The AQD6 are heavy duty self contained, efficient, clean, off-line switching power supplies with linear type performance that is jumper selectable between 12vdc at 6 Amps, and 24vdc at 6 Amps. Both have a dedicated lead acid battery(s) charger that obtains maximum battery life while providing a 12vdc or 24vdc uninterruptible power supply for access control security systems. The field selectable AC input allows these power supplies to be powered anywhere in the world. The AQD6 has exceptional brown out capability with operation down to 85% of nominal voltage. The AQD6 has an extensive filtering system that provides linear output performance. The AQD6 is electronically protected against Battery reversal, shorting or overloading. Power Limited Output with Thermal Protection when in models AQD6-8F, AQD6-8C, AQD6-16F, AQD6-16C, AQD6-8F8R, and AQD6-8C1R. Non power limited when model AQD6. Each of these protective features will self-restore. Before connecting load and battery(s), move the 12v/24v jumper to desired voltage. **Caution**, damage can occur when switched with DC output load. Confirm proper voltage before connecting devices. The AQD6 is UL Listed and has the additional supervisory features of a battery disconnect relay when battery(s) are depleted, a set of form "C" relay contacts that indicates AC power failure, a set of form "C" relay contacts to indicate low battery(s) and the DC Output is Class II power limited. Depending on load, low

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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.

AQD6 Specifications / Instructions

AC Input: L, N, G - 3P Terminal block
Safety block with recessed hardware insulation that will accept up to 12AWG
L= Line, N= Neutral, and G = Ground

AC Input 115-230vac/150W
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
There is a removable link located at the top right of the power supply board. Cut and remove this link to convert the power supply to 230Vac. **Note:** Once converted, the unit cannot be converted back to 115Vac. **CAUTION** to prevent damage, configure the power supply board for the proper voltage before applying line voltage to the power supply.
DC OUTPUT VOLTAGE SELECTOR JUMPER
The jumper is slightly left of center near the AC terminal block, and is marked with "VOLTAGE SELECT 12V / 24V". Move the jumper to the appropriate pins to configure the output voltage. **CAUTION** To prevent damage, remove DC load and battery(s) connections before switching selector switch up or down.
DC OUTPUTS: 2P Terminal block
Note: There is up to a 10 second delay for initial turn on
Output voltage Nominal 12vdc/24vdc
Output voltage Typical ..... AC on 12.5/25.0
Output range with rated load 12.0-13.0/24.5-25.5vdc
Output range on battery power 9.79-13.2/19.6-26.4vdc
Output continuous current (UL rating)..... 6A
Load regulation no load to max (no battery) ..... ±0.2%
Output ripple full load..... 240mv pp
Current Overload Short Circuit Protection ..... Yes
Thermal runaway Protection ..... Yes
Power Limited Output with Thermal Protection when in models AQD6-8F, AQD6-8C, AQD6-16F, AQD6-16C, AQD6-8F8R, and AQD6-8C1R.
Non power limited when in model AQD6
Current Overload and Thermal shutdown will auto-restart without removing load.
Ambient operating temperature range .....-20°C to +50°C
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, apply AC before connecting battery cable to battery.
Fault reporting relay rating:……32 VDC,120VAC, 1.0 Amps
The battery charger is precision set to float charge 12V or 24V sealed or wet lead acid batteries. A 12" battery cable assembly is provided that plugs from module to battery. Red (+), Black (–) Neg.
Battery(s), any type of lead acid 12/24v 4AH-40AH
UL evaluated 72AH
Battery(s) recharge ..... 700ma max
Battery(s) average recharging current 250ma
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), multiply the AH rating times 4 (AH x 4). As an example, a 12v system with two depleted 12v 7AH batteries would take about 28 hours to re-charge. See battery standby selection table on page 3.
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 32VDC,120VAC,1.0Amps
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 32VDC,120VAC,1.0Amps
Low Battery Cutoff……..9V/18V for 12V/24V setting
Battery Cutoff Relay is normally energized for fail-safe operation.
Physical
AQD6 Module Dimensions ..... 7.75"L x 4.16"W x 2.69"H
Height includes 5/8" standoffs, not provided with module only.
Mounting Holes Center to Center ..... 6.44"W x 3.41"H
AQD6 module only Weight 13.6oz
AQD6 in enclosure ..... 14" x 14" x 4.75"
AQD6 in enclosure Weight 9.65Lbs
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: 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: 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.

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. For 12v setting, voltage should read between 12.0 and 13.0vdc and 24.5 and 25.5vdc on the 24v setting. This assures proper voltage to float charge batteries.
3. Disconnect AC input. AC LED should be off, all other LED's should remain normal.
4. Check DC Output to be above 12.0vdc for 12v setting and 24.0vdc for 24v setting. This checks standby batteries to be operational. Sealed lead acid batteries have a typical life of 3 to 5 years.
5. Re 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 12vdc or 24vdc. The AQD6 was evaluated at UL with a 75Ah sealed lead acid battery.

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

Total Output Amps	4Ah Battery Standby	7Ah Battery Standby	12Ah Battery Standby	24Ah Battery Standby	40Ah Battery Standby	75Ah 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

Figure 1: AQD6 in an enclosure
With two PDBs in a 24V Configuration

