



## OPERATING INSTRUCTIONS

### For SoundPro® DLX Outdoor Measurement system



The SoundPro® DLX outdoor measurement system provides environmental protection and re-chargeable batteries for extended outdoor operation of the SoundPro® DLX (up to one week of continuous run, with optional battery). The weatherproof case holds the meter and battery pack with room for accessories and storage of the system components while not in use. Exposed components are made of stainless steel or plastic to resist corrosion.

The weatherproof case provides a stable base for mounting the microphone mast. There is an internal battery monitor circuit to reduce the risk of damaging the batteries by over-discharge. The circuit also protects against over-voltage, over-temperature (70°C or 158°F), and over-current (2 Amps, each output). There is an on-board universal input battery charger that fully re-charges empty batteries in about 16 hours or less..

This outdoor measurement system is to be used with the SoundPro® DLX RTA. The kit contains all necessary masts, windscreens, cables, battery packs and adapters required for the specific model.

For use with the model:

SoundPro® DLX RTA.

Order Outdoor Kit Number:

057-830

## **Warnings and Precautions:**



Risk of ELECTRICAL SHOCK. Avoid nearby overhead wires and electrical fixtures. The conductive electrical mast will tend to attract stray voltages and currents, including the possibility of LIGHTNING.



Risk of FIRE or EXPLOSION. Do NOT connect to AC power while the lid is sealed or closed. Do NOT modify the enclosure to provide AC power from an external source while the lid is closed. Hydrogen gas may be released from the lead-acid batteries during CHARGING leading to a risk of explosion. The cover must be left open during the re-charge process.



Risk of CHEMICAL BURN. Although the batteries provided are Absorbent Glass Mat (AGM) Sealed Lead-Acid (SLA) batteries that can be stored, transported, operated, and re-charged in any orientation, there is still a slight risk of being exposed to sulphuric acid if the case is cracked or punctured. These batteries can be shipped as “dry cargo” and do not require special hazardous material shipping.



Before first use, insure that the voltage select switch on the charger is set to the line voltage in your location. It may be set to either nominal 115V or 230VAC.



Battery cycle life is preserved by storing the batteries fully charged. Turn OFF the power at the power distribution panel when not in use. Fully charge the batteries as soon as possible after any use and before storing them for long periods of time.

## **Field instructions**

### **1) Mounting the outdoor microphone and mast to the weatherproof case**

**a)** Assemble the mast pieces by screwing the threaded coupler of item 3 to the threaded end of item 2. Multiple extensions (item 3) may be used to increase the height of the microphone.

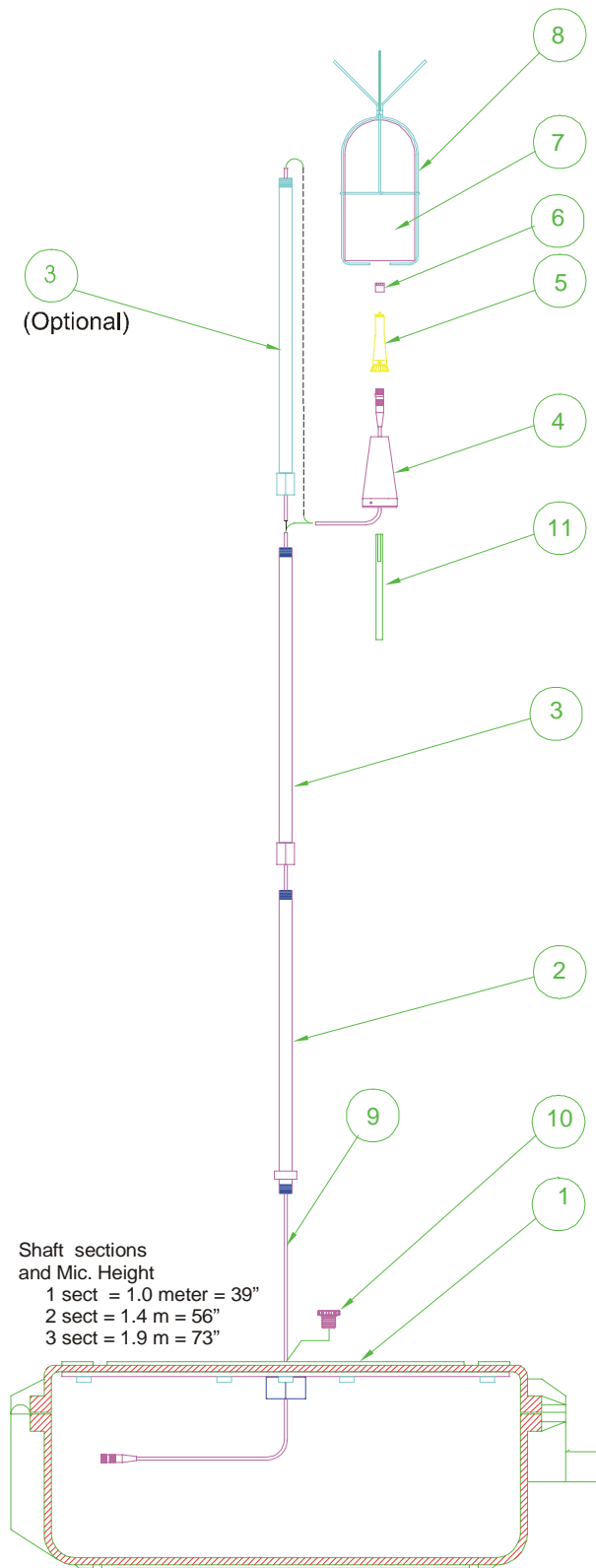
**b)** From inside the case (1), feed the smaller female end of the cable assembly (9) through the hole in the case cover.

**c)** For easier insertion, you may lubricate the connector boot with a bit of petroleum jelly. Feed the female end of the cable through the mast, and then completely through the preamp adapter (4). The insertion tool (11) will be necessary to push the connector through the preamp adapter (item 4).

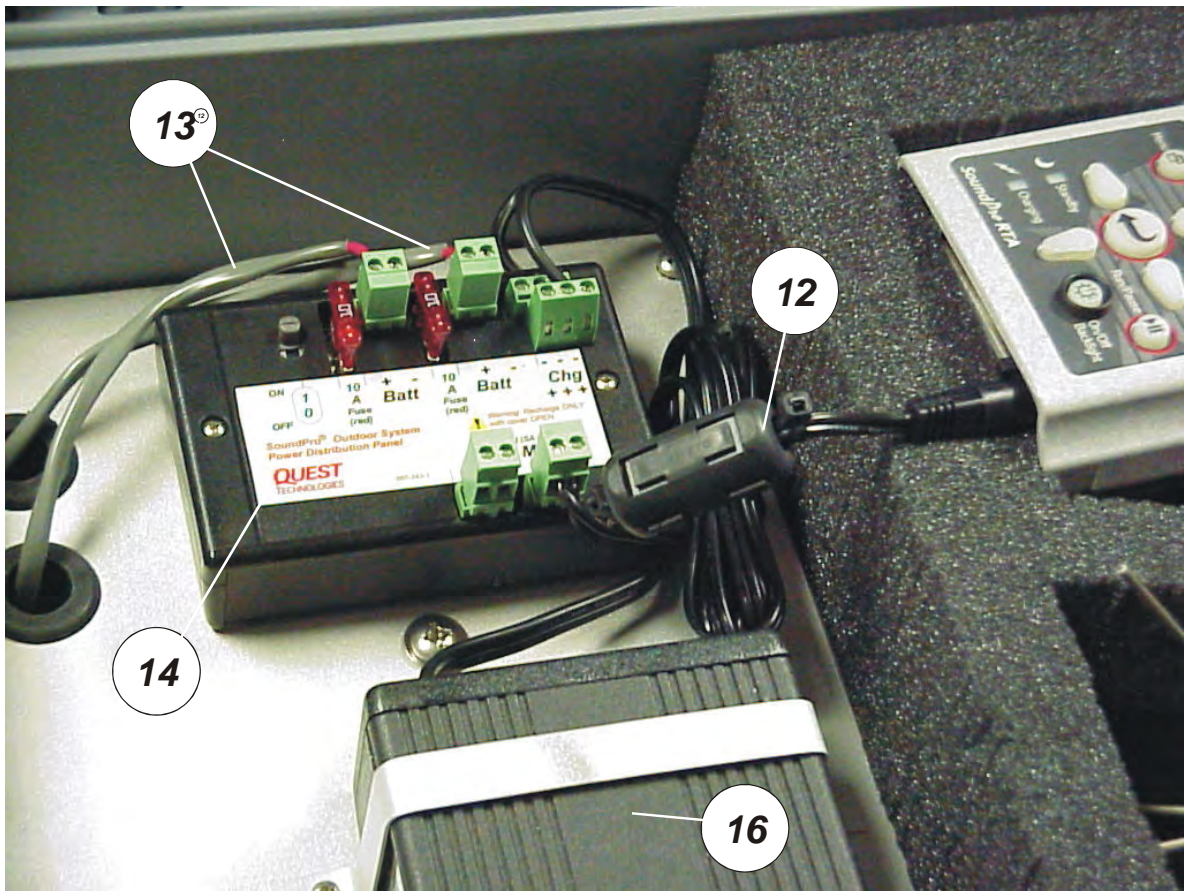
**d)** Assemble the preamp adapter (item 4) to the mast, and the mast to the case by screwing the threaded portions together. **Do not over tighten.**

**e)** Screw the microphone (6) onto the preamp (5). Connect the preamp to the female end of the cable by properly orienting and inserting the connector into the preamp. Hold the cable connector while turning the knurled knob on the preamp to tighten the connectors.

**f)** Grasp the preamp and push the connector's rubber boot into the preamp adapter until the preamp is completely seated.



**g)** Insert the windscreen (7) inside of the bird spikes (8). Place this assembly over the microphone preamp. Gently spread the bird spike wires and insert them into the holes on the preamp adapter. **Do not deform the wires by bending them too far.**



## 2) Making the internal connections:

- a) Connect the other end of the cable (9) to the meter inside the case.
- b) For brief runtimes (4 hours or less), you may use the internal battery power of the SoundPro® DLX. For extended runtime, connect the internal 12 Volt power cable (item 12) to the meter at its bottom inlet. Then turn **ON** the power switch at the power distribution panel (item 14).
- c) When you have turned **ON** the power switch and the meter you should verify that you can see the “AC power cord” icon on the meter that shows that the meter is running from external power.

## 3) Make the measurements:

- a) Follow the instructions provided with the meter to prepare to collect the measurements.
- b) When you are ready, place the meter into it’s pocket in the case, verify that it is still running from external power, and close up the case.

## 4) Turn-off and disassemble:

- a) When you are finished, turn **OFF** the meter and then turn **OFF** the power switch at the power distribution panel.
- b) Remove and disassemble the mast, microphone, and windscreen and place the parts back into the case.
- c) Don’t forget to replace the plug (item 10).

## **Maintenance and Care instructions:**

### **1) Recharging the internal batteries:**



Risk of FIRE or EXPLOSION. Do NOT connect to AC power while the lid is sealed or closed. Do NOT modify the enclosure to provide AC power from an external source while the lid is closed. Hydrogen gas may be released from the lead-acid batteries during CHARGING leading to a risk of explosion. The cover must be left open during the re-charge process.

- a) Open the case and leave it open for the duration of the charging. See the WARNING: “Risk of FIRE or EXPLOSION” above. Keeping the case open also allows the charger to stay cool.
- b) You may leave the master ON/OFF switch in either position. If you leave the master ON, you may also leave the meter connected, but doing that will increase the charging time by about 10%.
- c) **Before the first use of the charger**, verify that the input voltage selector on the charger module is set to the appropriate line voltage. The selector is a small red slide switch near the power inlet that is moved into the correct position using a small screwdriver. In the USA, it is 115 Volts (the UP position). With the European cord you will use 230 Volts (the DOWN position). When it is in its proper location, you will see your line voltage displayed.



- d) Connect your line cord to the charger power inlet.
- e) Connect the cord to a power outlet.

- f) There is a status lamp on the charger, opposite end from the power inlet. The lamp has three states.

YELLOW == CHARGING.  
GREEN == FINISHED CHARGING.  
BLINKING == CHARGING PROBLEM.



- g) Leave the power cord connected until you see the GREEN (FINISHED) indicator. The charging rate is 5 Amps. In the unlikely event that the batteries (84 Amp-Hours) are completely emptied (more than eight days of discharge), it will take at least  $84\text{AH} / 5\text{ A} = 16.8$  Hours (overnight), to completely re-charge them. For each hour of charging, you should be able to get about 10 hours of runtime.
- h) At 80% depth of discharge, the batteries should be good for at least 200 cycles. The batteries will age and lose capacity over time, and will likely need to be replaced about three to five years from purchase.
- i) When charging has completed you may unplug the charger and store the cable away. The enclosure lid can safely be closed as soon as the charger is unplugged.

## 2) Reactivating the desiccant:

- a) When you first use the silica gel canister in the area to be protected, it may become saturated rather quickly as it "drinks up" residual moisture. Once the residual dampness is removed, you can maintain a dry condition with less frequent need to reactivate the silica gel. Reactivation times below are minimums. Sometimes, when the silica gel becomes overly saturated, it's good practice to extend the reactivation period. However, do not vary from the recommended temperatures
- b) When the blue silica gel beneath the inspection window turns pink, reactivate as follows: Place the unit in a vented 150°C (300°F) oven for at least 3 hours. (Or until the silica gel turns blue again).
- c) The desiccant can be reactivated as many times as you want to.



## 3) Storage Recommendations:

- a) The batteries have an extremely low self-discharge rate, thus providing extended storage capability while maintaining high state-of-charge levels for dependable operation. These batteries have a shelf life more than two times that of conventional lead batteries. To assure maximum reliability, we recommend that all stored batteries be recharged (boost charged) at least every 12 months or when the open circuit voltage drops to 12.00 volts per battery, whichever occurs earlier. The batteries should be checked more

frequently if storage temperature regularly exceeds 25°C (77°F).

- b) The outdoor measurement system should be stored in a cool dry location with the lid closed whenever possible. High battery storage temperatures will lead to excessive self-discharge and premature battery failure.

## **First Assembly and Battery Replacement instructions:**

### **1) Open and unpack the batteries.**

The batteries might have been packaged separately from the unit to keep the shipping weight of each carton under the 70-pound limit that is imposed by common freight carriers such as Federal Express (FEDEX) and United Parcel Service (UPS).

### **2) If replacing the batteries, disconnect and remove the old batteries.**

Disconnect the batteries connectors from the power distribution panel. Remove the battery cover as in Step (3) below. While holding the case open, stand the case on its right side (away from the wheel end). You should be able to gently slide the batteries out of their compartments one at a time. NOTE: The batteries are quite heavy, about 15 Kg (33 pounds) each.

### **3) Open the enclosure and remove battery cover.**

Unlatch and open the outdoor system enclosure. When the outer cover is opened away from you, the battery compartment is located on your left. Clear out some space so that you can easily work in the battery compartment. You may want to remove the shaft segments, the accessory parts and some of the foam layers to give yourself room to work. The cover is held in place with six Phillips-Head screws. The power distribution panel and the charger are also mounted on the battery cover. Carefully remove the six larger screws around the perimeter and remove the cover.

### **4) Install batteries into enclosure.**

Now, while holding the outer enclosure lid open, tip the entire case on its side, so that the wheel-side is UP, the battery enclosure is near the top, and the right handle is on the floor. This will make it much easier to slide the batteries down into their compartments. Position each battery so that the wires and posts can still be seen as you slide it into position. Lay the enclosure back down in its normal orientation.

### **5) Route the Battery Cables.**

While positioning the battery cover over the batteries in the correct orientation, take one of the battery wires and its green connector, and feed it through one of the rubber grommets. Take the other connector and feed it through the other grommet. Carefully route the wires under the cover so that they will not be pinched.

### **6) Replace cover and screws.**

Position and secure the cover in place with the six (6) screws you removed in Step (3).

## 7) Connect the Batteries.

Connect the two battery cables into the Power Distribution Panel at the two connectors near the RED fuses. These two connectors are the only connectors that may be used for the batteries.

## **Specifications**

Windscreen Attenuation: 0.5dB @ 2kHz, 1dB @ 6kHz, 1.4dB @ 10kHz, 2dB @ 20kHz

Battery runtime with one 12Volt / 42Amp-Hour batteries:

(Total capacity = 80% of 42 Amp-Hours == 34 Amp-Hours of 12 Volt power):

Approximately 3.5 days, with nominal 400 mA load and de-rated to 80% depth of discharge (3.5days x 24Hours/day x 0.4Amp = 34 Amp-Hours).

When other additional accessories are used, reduced runtimes are calculated from the 80% de-rated 34 Amp-Hour Capacity.

With the optional second battery installed, you will get twice as much runtime or about 7-days.

Operating Temperature: 0°C (32°F) to 50°C (122°F).

Excessively hot and extreme sun exposure may lead to over-heating. Use additional sun shields to reduce running temperature, if necessary. Repeated or extended time in extreme environments will lead to premature battery failure.

Overall Dimensions:

In Transit: 64cm W x 51cm D x 38cm H  
[25" W x 20"D x 15"H]

Ready to Use: 64cm W x 51cm D x 200 cm H  
[25" W x 20"D x 78"H (max height)]

Overall Weight:

With Single battery:  
30 kg  
[67 pounds]

With Two batteries:  
45 kg  
[100 pounds]

## **Replacement Parts (Refer to assembly diagrams)**

- 1 057-832 Weatherproof case Assembly
- 2 056-472 Base Shaft with sealed nut
- 3 056-473 Shaft segment with coupler. Two provided for optional extra height.
- 4 056-462 Preamp adapter 2 inch/5 cm tall.
- 5 053-809 SoundPro® DLX RTA Preamp assembly (comes as part of meter).
- 6 Microphone (various models) – included with meter.
- 7 056-463 Windscreen/weather shield
- 8 056-464 Bird Spikes
- 9 057-240 SoundPro® outdoor extension cable assembly.
- 10 056-467 Case plug w/ 059-330 O-ring (both parts required)
- 11 056-475 Cable insertion tool
- 12 057-241 SoundPro® DLX outdoor 12V power cable assembly
- 13 057-242 SoundPro® DLX outdoor battery assembly (1 or 2) provided.
- 14 057-826 SoundPro® DLX outdoor power distribution panel.
- 15
- 16 053-562 Universal Input (Switch-able) 12V/5A Battery Charger.
- 17 068-028 USA 115V IEC320 Line cord #18AWG.
- 18 054-462 European 230V IEC320 Line cord #18AWG. (Optional)
- 19 057-235 Desiccant SG-40 Rechargeable Can.

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