DragonFly

All Weather Portable High Power PA System

Owner's Manual and Operation Guide

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Technomad DragonFly PA System

Owner's Manual and Operation Guide

Overview

The DragonFly is a full range, PA system designed to provide high quality, battery powered audio while offering Technomad's unsurpassed combination of audio quality, product flexibility and ruggedness. Fully weatherproof, the DragonFly can easily be transported and set up by one person. A molded in stand-mount socket on the bottom of the unit and inserts on the sides for yoke mounting give the DragonFly a range of deployment options. With a high quality 6.5" neodymium coaxial driver coupled with a powerful 200W amplifier, the DragonFly is capable of producing highly intelligible audio at 120 dB SPL.

The DragonFly is highly expandable with an available expansion bay for use with a modular version of Technomad's Schedulon MP3 player/recorder, a CD player module, a second wireless microphone receiveror a audio distribution option, including wireless, Ethernet and twisted pair configurations. Extended operation time is available with an external battery pack option. Whether you need a self-contained, complete PA unit for field deployment or to expand or build an existing PA system with additional, compact output units, the DragonFly can meet your requirements.

Physical Construction

The DragonFly has a single piece rotomolded cabinet, making the unit extremely durable. When the clear hatch covering the upper control surface is closed and latched, the unit is rated IP56. The hatch should not be left open in rain or snow conditions. The front lid is designed to be removed during operation. Similarly, the access panel for the wireless microphone programming buttons should not be opened in rain or snow conditions.

The DragonFly now features a PVC grill and high-density polyurethane rear panel. This is to improve the range of the wireless microphone system as metal can impact transmission.

Standard Features

Compact, rugged design
Handheld wireless microphone system
Expansion bay for MP3 player/recorder, CD player, ethernet, twisted pair, or wireless interface
Stand–mount socket on bottom
Threaded inserts for yoke mounting
Low profile handle for easy carrying
Microphone / balanced line level input (parallel waterproof tiny-XLR input)
Unbalanced line audio input (parallel waterproof tiny-XLR input)
Aux. speaker output
AC power input (120-240 VAC)
DC power input (12-24 VDC)
Two way ducking switch
6 hour battery operation, 20 hour stand-by capacity

Rear panel overview

1) Microphone/Balanced Line Input - XLR pins are mic input, 1/4 TRS pins are balanced line.

2) Line Level Input

3) Expansion Bay   Available installable options include Schedulon mp3 player/recorder, CD player, second wireless microphone system, ethernet interface, wireless interface, twisted pair interface.

4) Level controls for four audio sources.

5) Ducking switch This sets which input (mic or wireless mic) ducks other inputs

6) Clip indicator

7) Power source LED
Red = Internal battery
Green = external DC
Blue = external AC

8) Battery charger LED
Green = full charge
Blue = charging
Off = charger off

9) Wireless Microphone access panel
This panel can be removed to access microphone controls for pairing handheld transmitter or changing the broadcast channel.
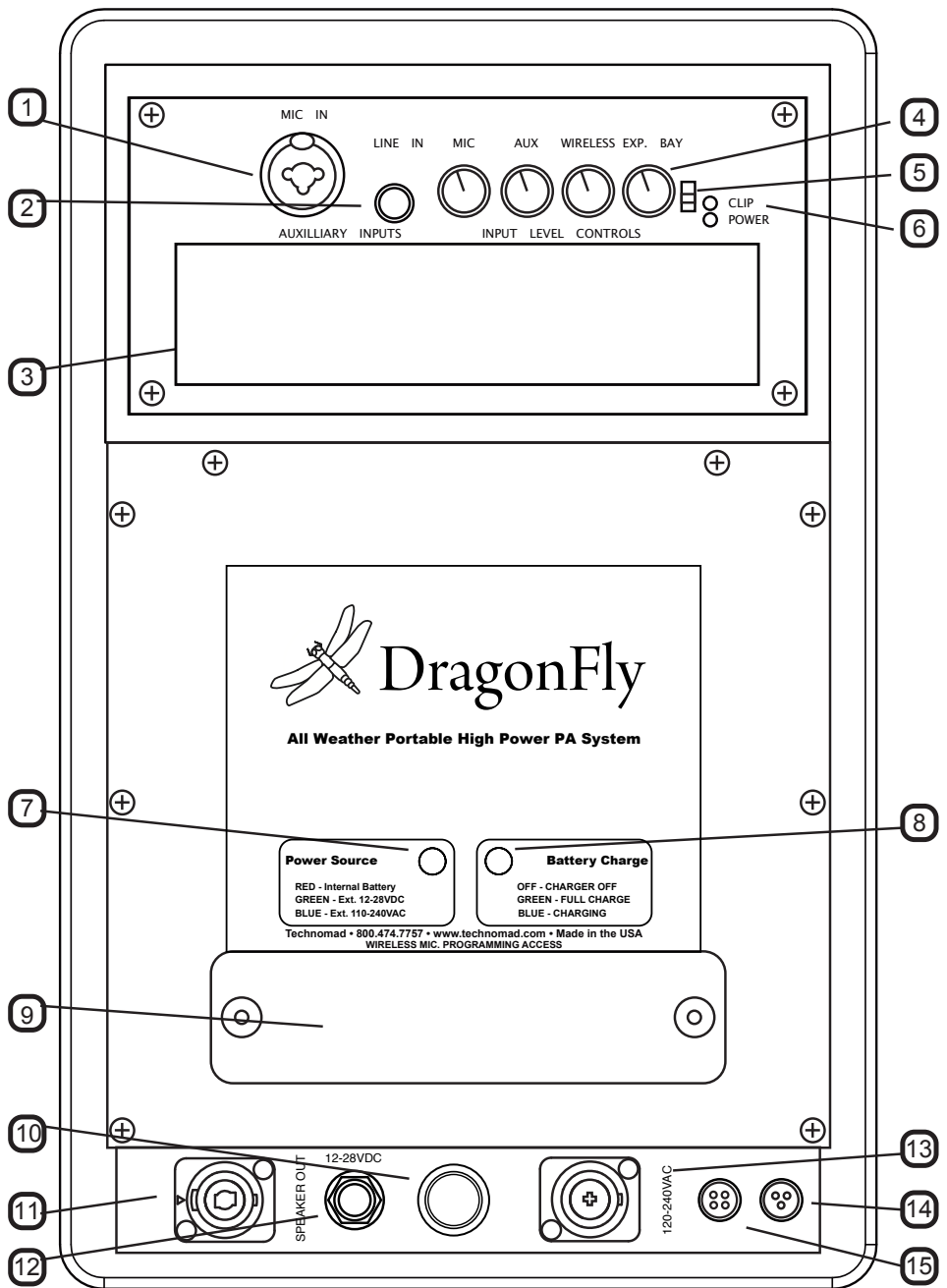
10) Power Button

11) Aux. speaker output
Allows a DragonFly expansion unit to be powered from DragonFly

12) DC power input - 12-24VDC power, SwitchCraft 502-L712AS

13) AC power connector - 120-240VAC Neutrik PowerCon

14) Line Level output, sealed - Tiny XLR, 3 pin

15) Mic Input - Tiny XLR, 4 pin

Note: DragonFly is shown without clear protective hatch for audio control surface for clarity.

MIC IN

LINE IN   MIC   AUX   WIRELESS EXP. BAY

AUXILLIARY INPUTS   INPUT LEVEL CONTROLS

CLIP
POWER

DragonFly

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Power Source
RED - Internal Battery
GREEN - Ext. 12-28VDC
BLUE - Ext. 110-240VAC

Battery Charge
OFF - CHARGER OFF
GREEN - FULL CHARGE
BLUE - CHARGING

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WIRELESS MIC. PROGRAMMING ACCESS

SPEAKER OUT   12-28VDC

120-240VAC

Basic Operation

The DragonFly can be run from the internal battery pack, external 120-240VAC power or external 12-24VDC power. The DragonFly is designed to automatically detect the preferred power source and to use that source on start-up. The default source is external AC, followed by external DC then the internal battery back. When the unit is first powered on, the unit will cycle through the power options to determine which source will be used. If the unit is running from a source that becomes unavailable, then it will automatically switch over to the next available default power source. If the unit is running from the internal battery and the battery gets depleted then the unit will simply shut off.

After the unit is operational, you can set the volume level for whatever audio source you are using by adjusting the appropriate level control knob on the upper panel of the DragonFly. You can use all four audio inputs simultaneously.

Clip light - this LED signals when the inputs to the DragonFly are being overdriven. While it is acceptable for the Clip LED to flicker during operation, the LED should not stay constantly lit. If the LED is fully lit, all active inputs levels should be reduced until the light is occasionally flickering. The audio mixer of the DragonFly does incorporate a limiter circuit to reduce clipping.

Wireless Microphone operation

The wireless microphone system integrated into the DragonFly ships with the handheld transmitter paired to the receiver inside the unit. To start using the wireless system, you can simply take the handheld unit out of the storage pouch inside the lid and press the power/mute button until the green light on the mic is on. To mute the microphone, press the button once. When muted, the indicator on the handheld transmitter should be red. To shut the microphone off, simply press and hold the button until the light goes off.

If you need to change the channel that the system is using, you will need to access the microphone receiver settings. First, remove the microphone access panel by undoing the two knurled knobs. You can now see the programming panel of the unit. Press and release the channel button. This will scan for an available channel and select that channel. Next, turn on the handheld unit and remove the battery cover by unscrewing the lower part of the handheld transmitter. Point the base of the unit towards the microphone receiver and press and hold the sync button on the receiver. Hold the button until the red lights on the receiver and handheld unit stop flashing. The receiver ready light should now be lit and the system should be set to operate on the new channel. Re-attach the battery cover on the handheld unit.

The operational range of the wireless transmitter is approximately 300'.

Ducking Circuit

The DragonFly has a ducking circuit built into the mixer. This is controlled by the three position slide switch to the right of the level controls. When the switch is in the top 'Mic' position, then all other audio inputs to the system will be automatically turned down or 'ducked' when the wired microphone is used. When the switch is in the bottom "W. Mic." position, then all other audio inputs to the system will be automatically turned down when the wireless mic is used. When the switch is in the middle 'off' position, the circuit is inactive.

Battery System

The DragonFly has a 6AH LifePO battery which is charged by the integrated battery charger. Depending on the program material being reproduced by the DragonFly, the battery should provide six plus hours of operational time. The battery charger is a smart charger design, meaning that it can quickly charge the battery pack to full charge within 3-4 hours without harming the cells. The unit does need to be on in order for the battery to charge. The DragonFly includes a LVD circuit to protect the battery from being excessively depleted in the event that the unit is left on indefinitely.

Tiny XLR connectors

There There are two REAN Tiny XLR connectors on the bottom connector panel. One is a mic input which is parallel to the XLR input on the upper mixer panel. The other is a balanced line level output from the audio mixer, parallel to the amplifier feed. These can be used to connect a mic to the system without opening the upper protective hatch or to link the DragonFly system to another audio system.

Line output connector - RT3FCT-B or RT3FC-B-W. Wiring: pin 1= shield, pin 2= signal, pin 3= neg.
Mic input connector - RT4FCT-B or RT4FC-B-W. Wiring: pin 1= shield, pin 2= signal, pin 3= neg.

Note - pin 4 is not used on the mic. connection.

FCT series connectors are threaded and can be locked onto the DragonFly using the threaded retaining ring on the connector.

Expansion Bay Modules (one module can be installed per system):

Schedulon MP3 player/recorder   CD player
Wireless Microphone, lapel system   Wireless Microphone, handheld system
Twisted Pair Link Kit   Ethernet Link Kit
Wireless Link Kit
Waterproof Headset Mic system

Available Accessories/Options:

Optional color: olive drab, desert sand, white, gray   External battery pack (18AH SLA battery)
DragonFly Expansion Unit (aux. loudspeaker)   Tripod Stand
Yoke mount   DC power cord
Transport Case

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Troubleshooting

Problem	Solution
The unit will not power on from battery pack	Check that the battery pack is charged by connecting the DragonFly to an AC power source.
No sound is being produced by the unit.	• Check that a working audio source is being used. • Check that the appropriate level control has been turned up. If you are uncertain if a source is working, set the level control to 12 o'clock to until you have the source working. • If using the wireless system, is the handheld transmitter on? Check that the handheld unit is not muted.
The unit is temporarily shutting off when used.	Check that the input being used is not being overdriven. The DragonFly audio amplifier incorporates clipping protection and will temporarily shut down. Simply turn down the level control for that source to prevent this problem from reoccurring
The unit is not charging properly.	Shut the unit off completely and let sit for 15 minutes, then reconnect to AC power to recharge the battery pack.
Microphone is causing feedback.	Move behind the loudspeakers when speaking, if possible. If in front of the loudspeakers keep the 'live' end of the mic (the part you speak into) pointing AWAY from the loudspeaker.) Switch the mic off when you're not speaking through it.

Reset Function: The DragonFly can be reset by pressing and holding the power button for a full 10 seconds then releasing the button. This will reboot the internal controller board and may resolve charging or power issues.