

DTBat[®] System Specifications for Wind Turbines

DTBAT TEAM

Ref.: BAT0516SP

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DTE	at [®] SYSTEM SPECIFICATIONS						
	DTBat [®] Detection Module						
Service description	Automatic and real-time detection of bat passes in the airspace surrounding a WTG.						
	Audio record of every bat pass detected uploaded to online Data Analysis Platform with Username and Password protected access.						
Installation site	Wind Turbines (WTGs) - On & Offshore						
Module specifications							
Components	Ultrasound bat detectors: 1 – 3 units/WTG. Type: Frequency division; range: 4-200 kHz						
	Environmental sensors: temperature, rain, humidity and wind speed (other variables available under request).						
	Cabinet: Analysis Unit, Detection Software, Electrical Protection System, Communications Hardware.						
	Mounting System, not intrusive on WTG.						
	Cables & Connections.						
Location on the facility	Cabinet: indoors, normally inside the tower.						
Cabinat	Cables & Connections: outdoors and indoors the tower.						
Cabinet							
Dimensions	40x50x20 cm, WxHxD.						
Weight	10 Кд.						
Power supply	Standard Power Grid Connection: 110-250 AC monophasic 50/60Hz						
Power consumption	95 W peak consumption.						
Operation period	Bat Activity period: normally dusk-dawn period (from 30 minutes before sunset to 30 minutes after sunrise).						
Weatherproof	Outdoor components: IP 66 / -30° to 50° C, protection against falling ice.						
	Cabinet components: IP 65 / 0° to 40° C (heated cabinet optional).						
Communications	Wind Farm Network/Mobile Router 3G/ADSL/Optic Fiber/Satellite Internet.						
Service specifications							
Detectable bat Species/Groups	All bat Species/Groups.						
Bat Species/Group identification	Yes, through the review of bat pass audio recordings (sonograms).						
Surveillance area	Rotor Swept Area, surveyed from $1-3$ bat detectors located on the WTG. Typical detection distance from each bat detector $10-100$ m depending on the bat species.						
Simultaneous detection of multiple bat passes	Yes, for installation with >1 ultrasound bat detector.						
Bat pass detectability	>80%						
Bat pass traceability ¹	Audio recording of every bat pass uploaded in real-time to online Data Analysis Platform, with Username and Password protected access.						
Recorded data	Bat pass Location. ID.						
	Date and time: Init time and total length.						
	Audio record of bat pass (sonogram). Environmental data, and WTG operational parameters during bat pass.						
	Species/group analysis from audio recording.						
Online Data Analysis Platform	Audio and data storage for 5 years at least, in DTBat* Server with Data Center Classified Tier 4.						
	Bat Pass Analysis tools: review of audio records and data export.						
Service Control	Self-checking and daily verification done remotely from DTBat [®] Headquarters.						
Warranty	2 years worldwide.						

BIRD & BAT PROTECTION



	DTBat [®] Stop Control Module							
Service description	Automatic WTG Stop trigger and restart linked to bat activity detected in real-time. Optional WTG stop trigger linked to real-time environmental parameters.							
Installation site	WTGs (On & Offshore).							
Module specifications								
Components	DTBat® Detection Module + Stop Control Module Software.							
Location on the facility	DTBat [®] Cabinet.							
Dimensions/Weight/Power supply/Power consumption/Operation conditions/Weatherproof	DTBat® Detection Module specifications.							
Communications	Connection with WTG PLC/Scada							
Service specifications								
Stop trigger	Automatic and linked to bat activity threshold and/or environmental parameters.							
Rotor Stop init time	2 – 10 s after DTBat [®] Stop trigger, depending on WTG manufacturer.							
Complete rotor Stop	10 – 25 s after DTBat® Stop trigger, depending on WTG manufacturer.							
Stop length	Linked to bat activity threshold and/or environmental parameters. Typical value: >90% of bat activity. Adjustable to Client/Environmental Authority requirements. Automatic restart of WTG.							
% Bat passes within triggered Stops	Adjusted to Client/Environmental Authority requirements. Typical value: >90%.							
Stop & bat passes traceability ¹	Stop data & audio recording of every bat pass uploaded to online Data Analysis Platform with Username and Password protected access.							
	Automatic email notification of every Stop: trigger time (first email), end time and duration (second email).							
Recorded data	Stop trigger ID.							
	Stop time data: Init time and total length.							
	Environmental data and WTG operational parameters during the Stop length.							
	Species/group and Stop analysis from audio records.							
	Audio and data storage for 5 years at least, in DTBat [®] Server with Data Center Classified Tier 4.							
Onime Data Analysis Platform	Bat Pass Analysis tools: review of audio records and data export.							
Service Control	Self-checking and daily verification done remotely from DTBat® Headquarters.							
Warranty	2 years worldwide.							





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Data Analysis Platform: Service example

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