



IFFT / IFFTe Jet Fan Series

THE COMPLETE PARKING GARAGE VENTILATION SOLUTION



Demand-Controlled Ventilation Solutions for Parking Decks

Applications: Compact low-clearance and large-scale enclosed parking structures.

The IFFT / IFFTe series combines low-profile centrifugal induction jet fan technology with advanced controls integration capabilities. This platform offers scalable solutions with multiple thrust options, speed strategies, and controls architectures to support project-specific design requirements.

Backed by CFD support capabilities, configurable controls options, and application-focused engineering, the IFFT / IFFTe series delivers a complete ventilation solution approach for modern parking garage applications.



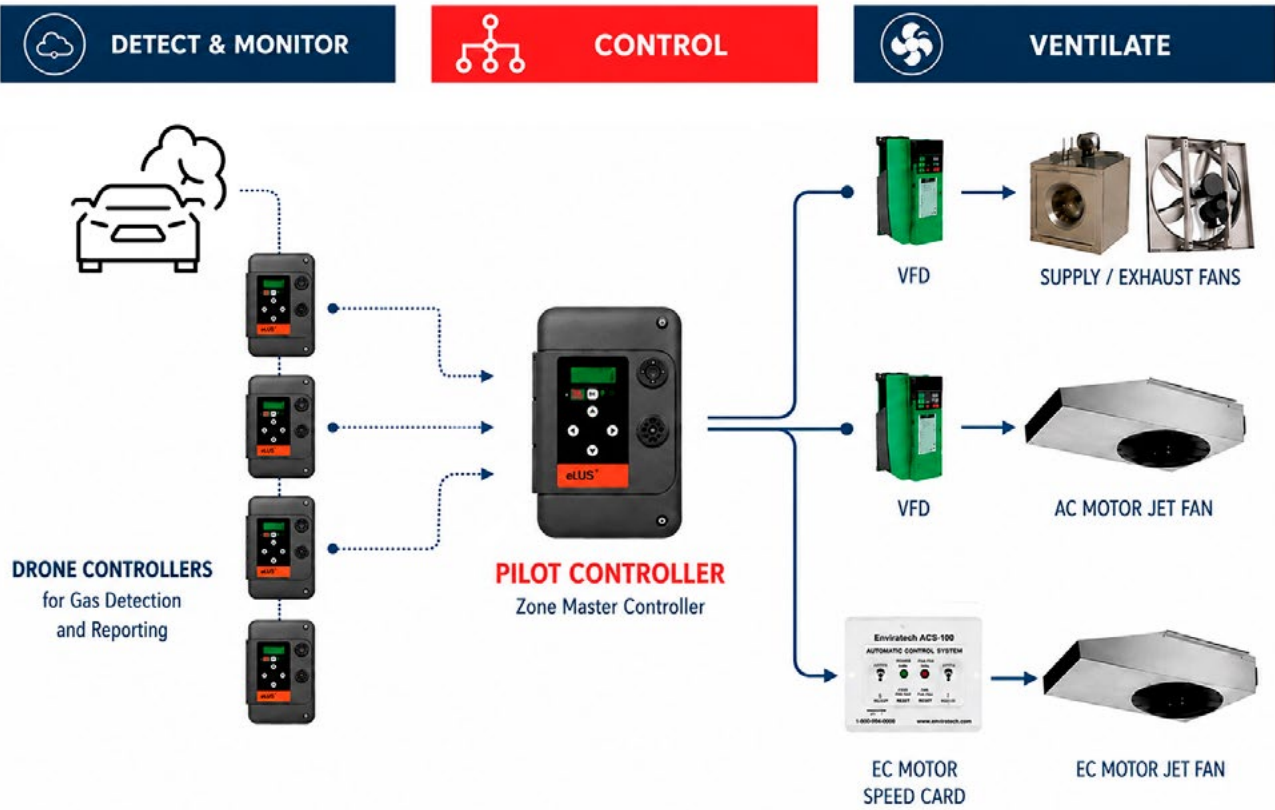
IFFT / IFFTe Jet Fan System Selection Guide

This brochure is intended to be used as a general guide, and additional information and support is available. Contact S&P for questions on system component selection and CFD analysis. S&P IFFT and IFFTe jet fans are designed to integrate with most commercially available CO/NO₂ control systems. The Belimo control shown is available through S&P USA. If you choose an alternate control system, please verify that it complies with all applicable local codes and is compatible with the appropriate motor control board.

Our customer service team can help you select the correct motor control board to match your control system and application, ensuring a smooth installation and reliable performance.

Selection Steps

- Step 1: Select IFFT / IFFTe Jet Fan Model (AC or EC Motor)
- Step 2: Select Speed Strategy: VFD for AC (IFFT) Jet Fan, Speed Card for EC (IFFTe) Jet Fan
- Step 3: Select Zone Pilot Controller – Zone Master Controller
- Step 4: Select Drone Controllers – Gas Detection Nodes
- Step 5: Verify Performance through CFD Analysis



This schematic illustrates the smart system architecture and coordinated ventilation control strategy. Once programmed and commissioned, Drone Controllers continuously monitor the parking facility environment for CO and/or NO₂ concentration levels and communicate through a daisy-chain network to the Pilot Controller. Acting as the zone master controller, the Pilot Controller intelligently coordinates the operation of the jet fans together with the main supply and exhaust fans to deliver efficient demand-controlled ventilation performance.

Step Details

Step 1: Jet Fan Model Selection

S&P’s comprehensive jet fan ventilation offering includes both AC motor and EC motor jet fan solutions to suit a wide range of parking structure ventilation and control strategies. The IFFT series uses AC motors and the IFFTe uses EC motors, offering multiple thrust and performance options to meet varying project requirements.

These tables show the available models within the IFFT / IFFTe series along with their corresponding performance data. Jet fan selection should be based on the required thrust performance, ventilation strategy, and project-specific electrical requirements.

PERFORMANCE

IFFT MODEL	RPM	THRUST (N)	FLOW (CFM)	NOMINAL POWER (kW)	FULL LOAD CURRENT 230V (A)	FULL LOAD CURRENT 460V (A)	FULL LOAD CURRENT 575V (A)	FREQUENCY (Hz)	SOUND LEVEL (LwA)	SOUND PRESSURE* (dBA) 5 FT
IFFT-50N	1650/855	47/13	3384/1754	1.5/0.22	6.13/2.06	3.07/1.03	2.45/0.82	60	95/79	83/66
IFFT-75N	1715/865	72/18	4709/2366	2.5/0.45	9.69/3.18	5.12/1.61	4.10/1.29	60	97/82	85/70
IFFT-100N	1715/865	90/23	5238/2631	2.5/0.45	9.69/3.18	5.12/1.61	4.10/1.29	60	98/82	86/69

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IFFTe30	2000	30	3255	1.14	7.2	-	-	60	85	67
IFFTe50	1800	51	3692	1.5	-	3.0	-	50/60	96	85
IFFTe-50N-1PH	1800	51	3692	1.7	13.5/12.8/10.1	-	-	50/60	96	85
IFFTe75	1800	76	4942	3	-	6.0	-	50/60	97	86
IFFTe100	1800	94	5498	3	-	6.0	-	50/60	98	87

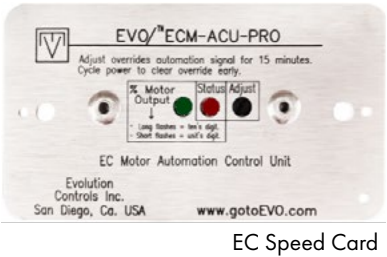
*Sound pressure, at 5’ hemispherical, in free field conditions, for comparison.

Step 2: Select Speed Strategy

Once the jet fan model is selected, the required speed strategy for the ventilation system must be determined. Many projects require advanced control strategies such as 2-speed operation, multi-speed/modulating control, or Modbus/BACnet integration. Accordingly, the appropriate speed option must be selected based on the system design and control requirements.

For EC motor jet fans and EC main supply/exhaust fans, S&P offers dedicated EC Speed Cards for:

- 1-speed operation
- 2-speed operation
- 0–10V modulating control
- Modbus communication



Where BACnet integration is required, communication can be achieved through the Pilot Controller.

For AC motor jet fans or AC main supply/exhaust fans, S&P’s Ecowatt Variable Frequency Drives (VFDs) should be used to provide the required speed control functionality.

Steps 3 and 4: Select the Pilot and Drone Controllers

It is important to ensure that the selected controller configuration is fully compatible with the chosen EC Speed Card or VFD architecture. Controller selection should always align with the required fan control strategy, communication method, and system operation requirements.

Depending on the application, the control architecture may support:

- Single-speed ON/OFF operation
- 2-speed control
- 0–10V modulating control
- Modbus communication
- BACnet integration through the Pilot Controller

PILOT Controller/Zone Leader: Select one and dedicate it as the Pilot Controller. Acting as the zone master controller, the Pilot Controller coordinates the operation of the jet fans together with the main supply and exhaust fans based on programmed ventilation logic. The Pilot Controller can manage up to 32 Drone Controllers, enabling precise zone-based ventilation control.

AVAILABLE CONTROLLERS

MODEL	SENSORS	OUTPUT
6002	CO	2 relay outputs
6002-A	CO	1 relay + 2 analog outputs
6002-14A	CO + NO2	2 relay outputs
6002-14B	CO + NO2	1 relay + 2 analog outputs

SPEED CARD OPTIONS

SPEED CARD	REQUIRED CONTROL SIGNAL	COMPATIBLE PILOT CONTROLLERS
ECM-VCU	1 relay output	6002 (CO) / 6002-14B (CO + NO ₂)
ECM-MSPD	2 relay outputs	6002 (CO) / 6002-14B (CO + NO ₂)
ECM-ACU-PRO	Analog signal (0-10V / 4-20mA)	6002-A (CO) / 6002-14A (CO + NO ₂)
ECM-MOVBUS	Modbus via external gateway	6002-A / 6002-14A

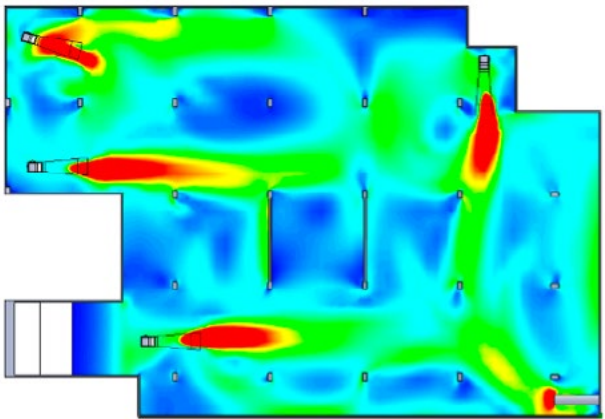
The compatibility table above should be referenced to ensure proper matching between the selected controllers and speed control options.

Drone Controllers: The remaining controllers serve as Drone Controllers – distributed gas sensors. Drone Controllers continuously monitor CO and/or NO₂ levels throughout the parking structure and communicate with the Pilot Controller through a daisy-chain network.

Step 5: Verify Performance through CFD Analysis

Once the jet fan selection and control strategy are finalized, system performance should be verified through CFD (Computational Fluid Dynamics) analysis. S&P provides a complete end-to-end jet fan ventilation solution – from jet fans and intelligent controls to CFD analysis support. Our in-house ventilation experts evaluate jet fan selection, positioning, airflow movement, and overall ventilation effectiveness to help optimize system performance for the project application and help ensure the system meets the required ventilation objectives and applicable code requirements.

CFD analysis helps visualize airflow behavior, contaminant movement, and ventilation coverage within the parking garage, providing valuable support during the design and approval process. The resulting CFD report can also be submitted as part of the project approval and engineering documentation package.



Sample CFD analysis