IndustLabs Intelligent Series VFD

IndustLabs
Your Automation Specialist

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IndustLabs Intelligent Series VFD brings a new class of intelligence to the industry

Variable Speed Motors for Pumps and Fans

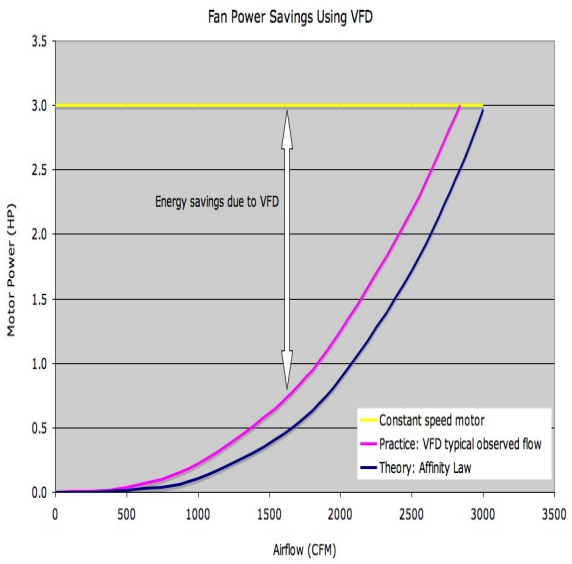
IndustLabs **Intelligent** Series VFD Control Systems is powered by Fuji Electric Drives. The only drive in the industry with a 3 year manufacturers default warranty. Controlling any electric motor with Variable Speed extends the life of the motor and reduces the cost to run and operate the motor. Although any electric motor can be controlled the most common application include

- Air Handling Units (Supply & Return Fans)
- Chilled Water Pumps
- Hot Water Pumps
- Pressure Bosting Pumps
- Compressor motors

IndustLabs Intelligent Series VFD Key Features

- NEMA 3R Enclosure ratings
- Optional UL Certification
- 3 Contactor Bypass and basic Bypass
- Non-Bypass
- Speed variation in response to input sensors
- LCD, Key Pad, or HMI options for input
- SCADA integration or leverage existing or IndustLabs developed IoT platform with Artificial Intelligence powered motor failure prediction
- Integrated circuit protection
- Customizable options for Pilot indicator lights
- Optional disconnect options for your needs

Lower Energy Bills & Co2 Emissions



According to the EPA it is possible to achieve a 50% - 85% reduction in energy cost through the use of Variable Speed Drives. A far greater reduction than the use of mechanical flow control devices such as dampers or valves.

IndustLabs can design a VFD control systems that can vary the speed of motors based on input data such as pressure sensors and we can provide remote operations support to changing drive speed without having to send someone to an unmanned location.

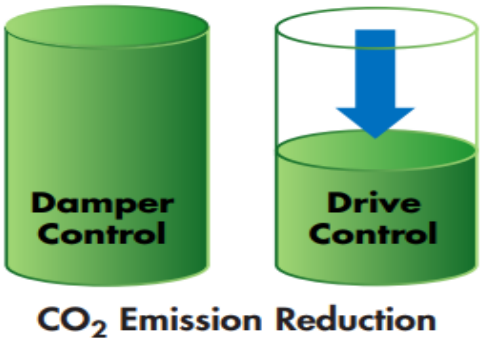
Energy Saving Example:

Replacing a damper controlled fan system with a variable speed control system with operating characteristics of 85% air flow required for 2,000 hrs/yr, 60% air flow required for 2000 hrs/yr, and operated by a 20Hp (15kW) motor.

Energy required by using damper control:	50,100kWh/yr
Energy required using drive control:	24,900kWh/yr
Energy savings by using drive control:	25,200kWh/yr

Energy Savings from using VFD Control System can correlate to reducing Carbon Dioxide (CO2) emissions from power generation plants.

CO2 Emissions Reduction Example:
Using the energy savings from the previous example. 25,200kWh/yr and a CO2 emission factor of 1.36lbs/kWh. The Estimated reduction of CO2 emissions is 34,270lbs/yr



Reduced Maintenance Cost & Ambient Noise

With the use of a controlled increase approach to increasing the speed of a motor the reduced wear and tear of starting and stopping the motor on the mechanical components can increase the life of a motor. The reduced speed can also greatly decrease the amount of ambient noise in a facility

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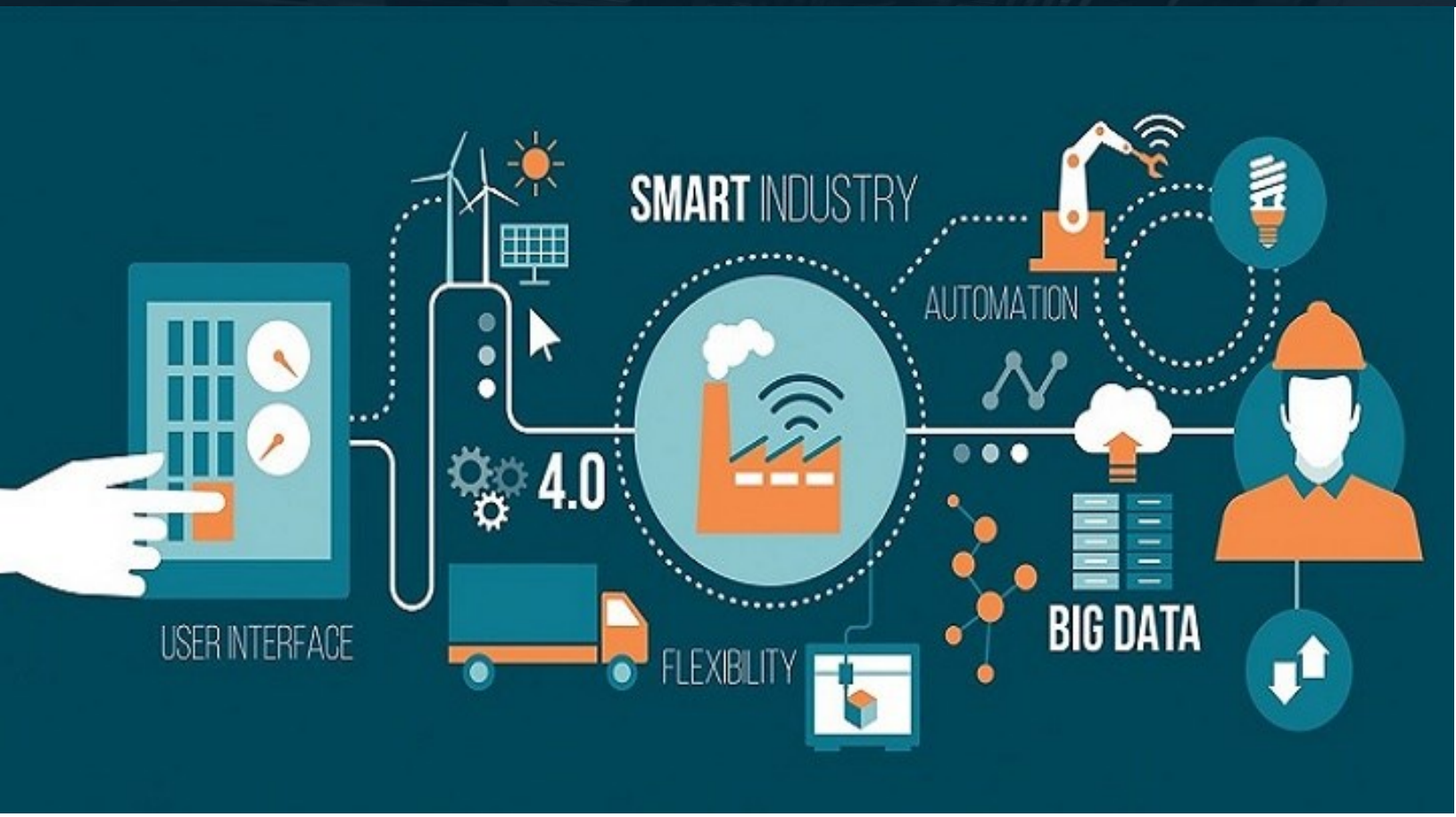
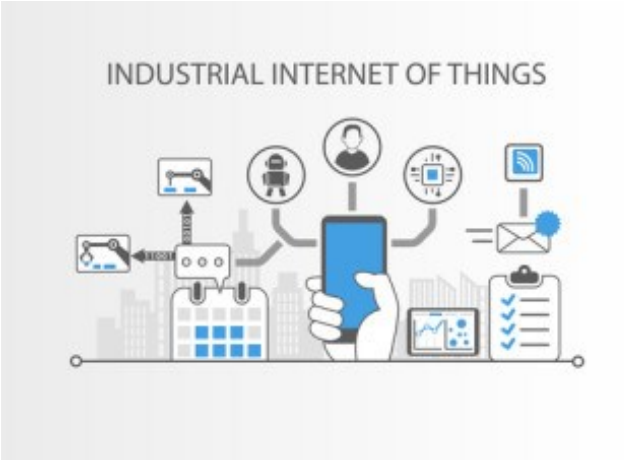


Industrial Internet of Things (IIot) and Remote Access Operations

IndustLabs Intelligent Series VFD can integrate with any existing Industrial IoT platform or you can leverage our IoT platform built on the power of Amazon's AWS cloud architecture. The IndustLabs IoT platform enables remote operations support so you can start / stop, increase or decrease speed, or setup notifications for motor failures or any other system malfunction.



All automation systems developed by IndustLabs are capable of streaming data into our cloud platform and that data can be used to make intelligent business decisions and reduce response times to failures. With IndustLabs Artificial Intelligence powered by our partners Spark Cognitions we can predict machine failures before they occur with a 95% accuracy.

	Non-Bypass	Mechanical Bypass	Electronic Bypass
Ratings			
Horsepower & Voltage	1 - 150 HP, 230V 1 - 1000 HP, 460V	1 - 150 HP, 230V 1 - 1000 HP, 460V	1 - 150 HP, 230V 1 - 1000 HP, 460V
NEMA/UL Type 3R Enclosure	Standard	Standard	Standard
Features			
Disconnect & Circuit Protection	Standard	S	S
Electrically & Mechanically Interlocked Drive Output and Bypass Contactors	N/A	S	S
Drive Input Isolation	N/A	S	S
Motor Overload Relay	N/A	Class 20	Class 20
DC Link Reactor	Standard on > 100 HP	Standard on > 100 HP	Standard on > 100 HP
3% AC Line Reactor	S (Optional > 100 HP)	S (Optional > 100 HP)	S (Optional > 100 HP)
5% AC Line Reactor	O	O	O
Control Power Transformer w/ Fusing	S	S	S
Power On Indication	S via LED Pilot	S via LED Pilot	S via LED Pilot
Drive Run Indication	S via LED Pilot	S via LED Pilot	S via LED Pilot
Drive Fault Indication	S via Key Pad (O via LED Pilot)	S via Key Pad (O via LED Pilot)	S via Key Pad (O via LED Pilot)
Bypass Run Indication	N/A	S via Key Pad (O via LED Pilot)	S via Key Pad (O via LED Pilot)
Key Pad	S Drive Mounted (O Door Mounted)	S Drive Mounted (O Door Mounted)	S Drive Mounted (O Door Mounted)
Automatic Bypass	N/A	N/A	O
Customer Control I/O Terminal Strip	S	S	S
Communication Protocols			
Modbus RTU	S	S	S
MQTT	O	O	O
Lon Works	O	O	O
BACnet	O	O	O
Profibus DP	O	O	O
DeviceNet	O	O	O
Ethernet	O	O	O
Internet of Things (IoT) / Artificial Intelligence (AI)			
Integration with existing IoT Platforms	O	O	O
IndustLabs IoT Platform w/ Remote Operations	O	O	O
Integration with existing AI Platform	O	O	O
IndustLabs AI Powered by Spark Cognitions	O	O	O
Codes & Standards			
UL 508A Certification	O	O	O
NEMA 3R Rated Stell Enclosures	S	S	S
S = Provided as Stanard **O = Optional Feature**			

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