



FIVE STAR ELECTRIC

POWERED BY INNOVATION



- ✓ Low & Medium Voltage Variable Frequency Drives
- ✓ Low & Medium Voltage Solid State Starters
- ✓ Integrated Low & Medium Voltage VFD Bypass Systems
- ✓ Low & Medium Voltage Control Panels

- ✓ Power Control Rooms & Transformers
- ✓ AC/DC Electric Motors
- ✓ Automation and PLC Networking
- ✓ Dynamic VAR Compensation Systems

A World Class Business Partner for any Industry

Over the past 30 years, Five Star Electric has grown from a small motor distributor to become a world leader in the engineering, design, production, application and complete servicing of Advanced Solid State Motor Control & Automation Systems.



Our products and systems focus on utilizing the most advanced technologies available for the control, protection and monitoring of industry's most demanding applications. Five Star has over 100 years of combined expertise in the application of low and medium voltage variable speed drives, reduced voltage solid state starters, switchgear, power transformers, static/dynamic VAR Systems, SCADA/DCS/PLC systems, control panels, electric motors and integrated power control rooms. Five Star has earned a strong reputation in the industry for providing well engineered, reliable, cost effective systems and service focusing on energy efficiency and advanced technologies.



Many in the industry have come to know Five Star through our expertise with low and medium voltage, variable frequency drives and solid state motor controls. Five Star also provides a wide range of systems, engineering services and field services critical to the Oil and Gas, Power, Municipal, Irrigation, Renewables, Aggregate and Cement industries.

We design our products for durability and test them rigorously to ensure the highest degree of reliability. Parts and materials are selected, inspected and tracked per ISO 9001 procedures and processes to ensure the timely and accurate completion of every order.



1983- Five Star Electric Motors Incorporated

1984- First Five Star OEM Oil & Gas Pumpjack Panel

1984- First Variable Frequency Drive Supplied

1987- Full Service Integration of PLC , Solid State Starter and VFD

1989- Five Star and Siemens (Formerly Robicon) MV VFD Partnership

1989- Growth to New Facility

1993- Five Star Becomes One Click Away with www.vfd.com

1994- Expansion Into Medium Voltage Pipeline and Water and Waste Water Group

1996- Gain UL 508 Certification

1999- New Global Alliances and Worldwide Contracts

2003- Supply Largest MV Lineup of VFD and SSS for US Water Municipality

2004- Supply 75MV VFDs for World's Largest Liquid Natural Gas Project

2010- Key Supplier for Largest Gulf of Mexico Offshore Project

2012- Key Supplier for 8000 foot Deepwater Gulf of Mexico Offshore Project

2012- Completed ISO 9001:2008 Certification

2015- ISNetwork membership expansion and growth to service our customers

2016- Master Service Agreement (MSA) growth of 400% to meet increasing customer demand

1983

2019

1991- Supply 5MV DC Drive to Fusion Research Facility

1991- Supply/Install over 800 VFDs at two Texas Institutes

1996- Supply Energy Saving Harmonic Free VFDs to Presidential Library

1996- Land Purchase and New Facility to Support Growth

1997- Opened Houston Office to better serve Oil & Gas customers

2005- Largest Supply of MV VFDs to Offshore Platform

2005- Supply Pump Controls for Hurricane Katrina Relief

2006- Supply Four 20MV Air Cooled Drives to Electric Utility

2009- Supply MV VFD to Largest Domestic US Frac Project

2013- Gained UL 698A UL 1203 and NFPA 496 Certifications

2014- NEW San Antonio Facility to support growth for design, service, products and warehouse

2015- NCMS Certification completed for National Compliance Management Service

2018- NEW Lubbock Facility to support West Texas growth for service, products and warehouse

Five Star Electric Timeline



Medium Voltage Variable Frequency Drives



Air Cooled & Liquid Cooled
VFD Packages



VFD Sync Bypass Package



Integrated Power House
w/8000HP VFD

Five Star Electric is a world leader in the application and installation of Medium Voltage Variable Speed Drive technology.

Our Medium Voltage AC drives deliver an impressive combination of benefits:

- ★ Enhanced energy savings
- ★ Lower operating costs
- ★ Increased production efficiency
- ★ Precise process control
- ★ Exceptional reliability
- ★ Intuitive HMI

Our engineering expertise has made our drive packages the choice for demanding applications that require the highest levels of reliability, precision, and longevity.

Five Star's Experience is powered by Innovation:

- ★ 30+ years of Experience in the Application of Low and Medium Voltage Variable Speed Drives.
- ★ Complete Integrated VFD Packages with Input Switchgear.
- ★ Sync Bypass Packages with Integrated Motor Control and Protection for up to 8 Motors.
- ★ Bypass Systems Utilizing Full Voltage or Solid State Starters.
- ★ Integrated PLC Control
- ★ Both Air and Water Cooled Systems
- ★ Cooling Options: Air-Air Hex, Air-Water Hex, Water-Water Hex, Evaporative Condensers
- ★ Stand Alone Systems or Integrated Power Control Rooms

Medium Voltage Solid State Starters

Five Star Electric has engineered, applied and commissioned thousands of Reduced Voltage Solid State Starters (RVSS). We have applied solid state motor controls to some of industries' most severe applications. Our product offering includes RVSS starters from 2300V - 15,000V up to 40,000HP and designed for use with induction, wound rotor and brushless synchronous motors.

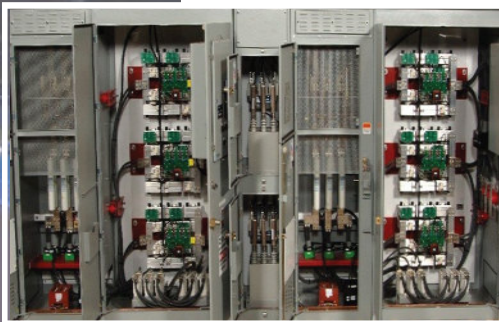
Five Star Electric can provide reduced voltage solid state starters in standard or custom formats:

- ★ 2300-13,800V through 40,000HP
- ★ Nema 1, 12, 3R or 4X Enclosures.
- ★ Integrated Line-ups with RVSS starters, metal enclosed or metal clad switchgear, feeder switch assemblies, and main lug incoming sections.
- ★ Starting duty bypass contactors for emergency ATL starting
- ★ Retrofits – Custom chassis and/or transition sections into other manufacturer's gear.
- ★ Optional integrated PLC's and Motor Protection Relays
- ★ Power Factor Correction Capacitors with isolation contactors and inductors
- ★ Voltage Drop and Motor Start Analysis for proper coordination with utility systems and driven machinery

From complete line-ups to stand alone starters, Five Star has the right solution for your application.



Integrated Line-up with 3,000A Breaker, 4500HP RVSS Starters and 500HP FVNR starters



Solid State Starter MCC with integrated Power Factor Correction Capacitors



22,500HP 13.8kV Solid State Starter

Low Voltage Products



18 pulse VFD in NEMA 4X SS Enclosure
6 pulse VFD in NEMA 1 Enclosure



Automation - Control Consoles



MCC with 6 Pulse VFD's & Passive Filter - IEEE519 Compliant

Five Star Electric provides integrated solutions that are innovative, safe, reliable, efficient, and environmentally sustainable. Five Star's products and solutions have improved the performance, reliability and efficiency on all types of applications and processes around the world. Our focus is on delivering the right solution for the application.

Five Star offers a complete line of low voltage motor controls:

- ★ Full Voltage Electromechanical
- ★ Solid State Starter from 120-1140V through 4000HP
- ★ Variable Frequency Drive- 120-690V through 2800HP in 6, 12, 18 pulse configuration and IEEE 519 compliance for harmonics.
- ★ NEMA 1, 12, 3R, 4X
- ★ Reactors, Input Passive & Long Lead Filters
- ★ Bypass Contactors
- ★ Power Factor Correction Capacitors

Five Star Electric is committed to helping customers with their energy management programs and initiatives by supplying the most technically advanced Automation Products:

- ★ Small to Mid-size- (3,000 I/O) Automation Controller with Full DCS Capabilities
- ★ Total intelligent automation solutions for complex integrated systems that control critical or hazardous operations and require non-stop operation and state-of-the-art security
- ★ Operator Control Consoles & Work Stations

Our application engineers have over 100+ years of experience in providing integrated drive and automation solutions for the Oil & Gas, Irrigation, Cement/Aggregate, HVAC, Municipal, Renewable and Power Industries.

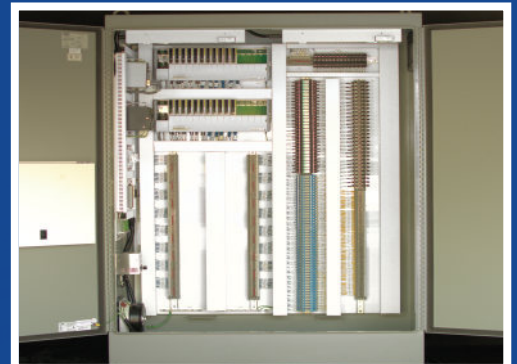
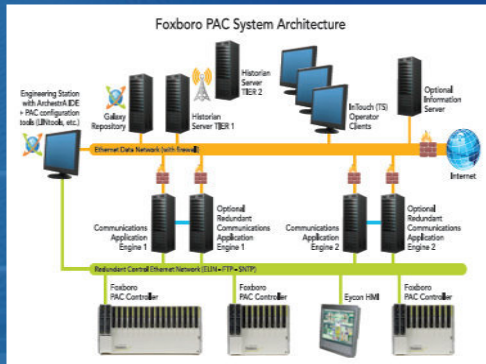
UL 508A Industrial Control Panel Certified Facility UL 698A, UL 1203 and NFPA 496 Hazardous Location Certified Facility ISO 9001 Quality Management System Certified Controls Facility

Five Star Electric designs and manufactures UL 508A Listed Control Panels for all industries including Municipal, Industrial, Oil & Gas, Commercial, and Irrigation applications. Five Star Electric is certified to build UL 698A intrinsically safe control panels for process control in extreme hazardous locations. In addition, Five Star complies with UL1203 for the supply of Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for use in Hazardous (Classified) Locations and NFPA496 for protection of electrical equipment in flammable atmospheres. When required, any of these three certifications can be utilized to provide the proper compliance to ensure panel integrity and maximum safety for all personnel. All of our products are manufactured according to the ISO 9001 standards for quality management systems.

Industrial Automation

The key to Five Star's success is the ability to network the critical motor control and the system control in one complete solution. Starting with our innovative motor control and progressing to single or multiple PLC cabinets and complete Distributed Control Systems, Five Star can measurably improve plant-wide operations, performance and asset utilization for all types of industries. Five Star Electric has the capability to package and program any PLC available on the market. Our company's automation team specializes in the application and implementation of a comprehensive range of products addressing major functional areas such as automation systems & equipment and operations management software systems.

These control and safety systems operate some of the world's largest and most complex industrial plants, such as oil refineries, power stations, and petrochemical plants. Five Star Electric can also supply a full range of field devices including pressure, temperature, flow and analytical measurement and instrumentation products. From transmitters and sensors, to positioners, recorders and controllers, these devices complement our automation systems to provide a complete solution in process control.



Renewable Energy Solutions

Five Star Electric provides control panels, monitoring and modules for most renewable energy markets including the Solar & Wind Industry. Our vast experience with the design and packaging of variable frequency drives permitted an easy entry into the renewable inverter market. We can provide packaged inverter solutions required to convert DC power to AC power for interface with transmission lines or substations. Extreme climate conditions along with innovative packaging allow higher reliability and system integrity. State of the art energy monitoring technology can be utilized to view panel level efficiencies throughout the solar array and farm and compare those values to the same panel or array over user selected time periods. Maintenance and service are available for all our renewable products.

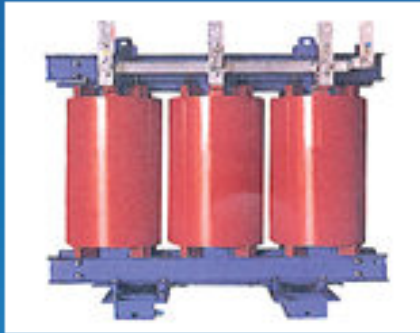


Dynamic VAR System

Five Star Electric specializes in the specification, design, manufacture and installation of Dynamic VAR compensation systems. Dynamic VAR Compensations use solid state switches, eliminating issues associated with traditional capacitor switching including inrush, restrike, limited switch life, re-switching time limits, and back-to-back switching. Harmonic problems are simplified but not eliminated. Capacitor switching to maintain Power Factor, eliminate sags, or mitigate flicker occurs as often as once per cycle. With Dynamic VAR compensation, 3, 7, or 15 levels of VAR adjustment are easily possible. Based on the specific program chosen, the VAR compensator controls adjust to what the equipment actually requires on a cycle-by-cycle basis.



Transformers, Filters & Reactors



Five Star can provide power transformers and magnetics for service in the most extreme conditions and demanding applications found worldwide. Many solutions are simply single power transformers. However, in other applications, it is essential to coordinate the input transformer design with a VFD, Solid State Starter or other strategic equipment. Harmonic mitigation is also a major concern when applying electronic devices to any power system. Proper coordination of these components is critical to the operation, performance, safety and longevity of the entire installation. Our products comply with applicable industry and government standards practiced throughout the world. Our customers include large original equipment manufacturers (OEM) and engineering, procuring and construction (EPC) firms, as well as end-users in private industries, government, utilities and universities.

Five Star can provide:

- Liquid-Filled Transformers
- Passive Harmonic Filters & Reactors
- Liquid-Filled Voltage Regulators
- Epoxy Cast Coil Distribution and Power Transformers
- Dry-Type Transformers and Reactor Products
- Custom Design and Build Designs for Special Applications and Installations



Power Control Rooms

Many of our control solutions involve packaging our products in climate controlled prefabricated buildings. As a result, Five Star Electric is able to provide large prefabricated industrial power control rooms for use in the municipal, process, power generation, oil production, refining and pipeline industries. Five Star provides single source capability, engineering services, and turnkey installations designed to meet your requirements and your schedule. Common uses of these power control rooms include the housing of Remote Instruments, Power Distribution Centers, Variable Frequency Drives and Solid State Starters, Medium Voltage Switchgear and Synchronous Bypass systems.

The power control rooms are designed and constructed with vast experience and in accordance to both the United States ANSI/NEMA standard and the international IEC standard. In addition, we can also provide certifications per individual state or third party agency requirements. Most solutions are manufactured in Houston, TX with easy access to the local major freeways, water ways and airports. This allows for a number of options to transport your project from our factory to your jobsite.

Five Star Electric Product & Service Capabilities

	120-240V	480-690V	2300V	3300V	4160V	7200V	10-11,000V	13,200V
Products								
Medium Voltage Variable Frequency Drives			●	●	●	●	●	●
Medium Voltage Solid State Starters			●	●	●	●	●	●
Medium Voltage Integrated Systems			●	●	●	●	●	●
Medium Voltage Sync Bypass Systems			●	●	●	●	●	●
Medium Voltage Static Var Systems			●	●	●	●	●	●
Power Control Rooms			●	●	●	●	●	●
Circuit Breaker and Disconnects	●	●	●	●	●	●	●	●
Direct On Line and ATL Starters and Controls	●	●	●	●	●	●	●	●
Electric AC & DC Motors	●	●	●	●	●	●	●	●
Automation Systems	●	●	●	●	●	●	●	●
DCS/SCADA/PLC Systems	●	●	●	●	●	●	●	●
Complete Engineered Integrated Solutions	●	●	●	●	●	●	●	●
Low Voltage Solid State Starters	●	●						
Low Voltage Variable Frequency Drives	●	●						
Low Voltage Motor Controls	●	●						
Technical and Engineering Services								
Service & Repair of AC & DC Motor Controls	●	●	●	●	●	●	●	●
Diagnostics & Troubleshooting	●	●	●	●	●	●	●	●
System Retrofit & Replacements	●	●	●	●	●	●	●	●
Commissioning & Installation Services	●	●	●	●	●	●	●	●
Product Evaluation & Repairs	●	●	●	●	●	●	●	●
Technical Phone Support	●	●	●	●	●	●	●	●
Preventive Maintenance Contracts	●	●	●	●	●	●	●	●
SCADA/DCS System Evaluation & Design	●	●	●	●	●	●	●	●
PLC System Design & Programming	●	●	●	●	●	●	●	●
Power Quality System Analysis	●	●	●	●	●	●	●	●
Harmonic Testing	●	●	●	●	●	●	●	●
Training	●	●	●	●	●	●	●	●

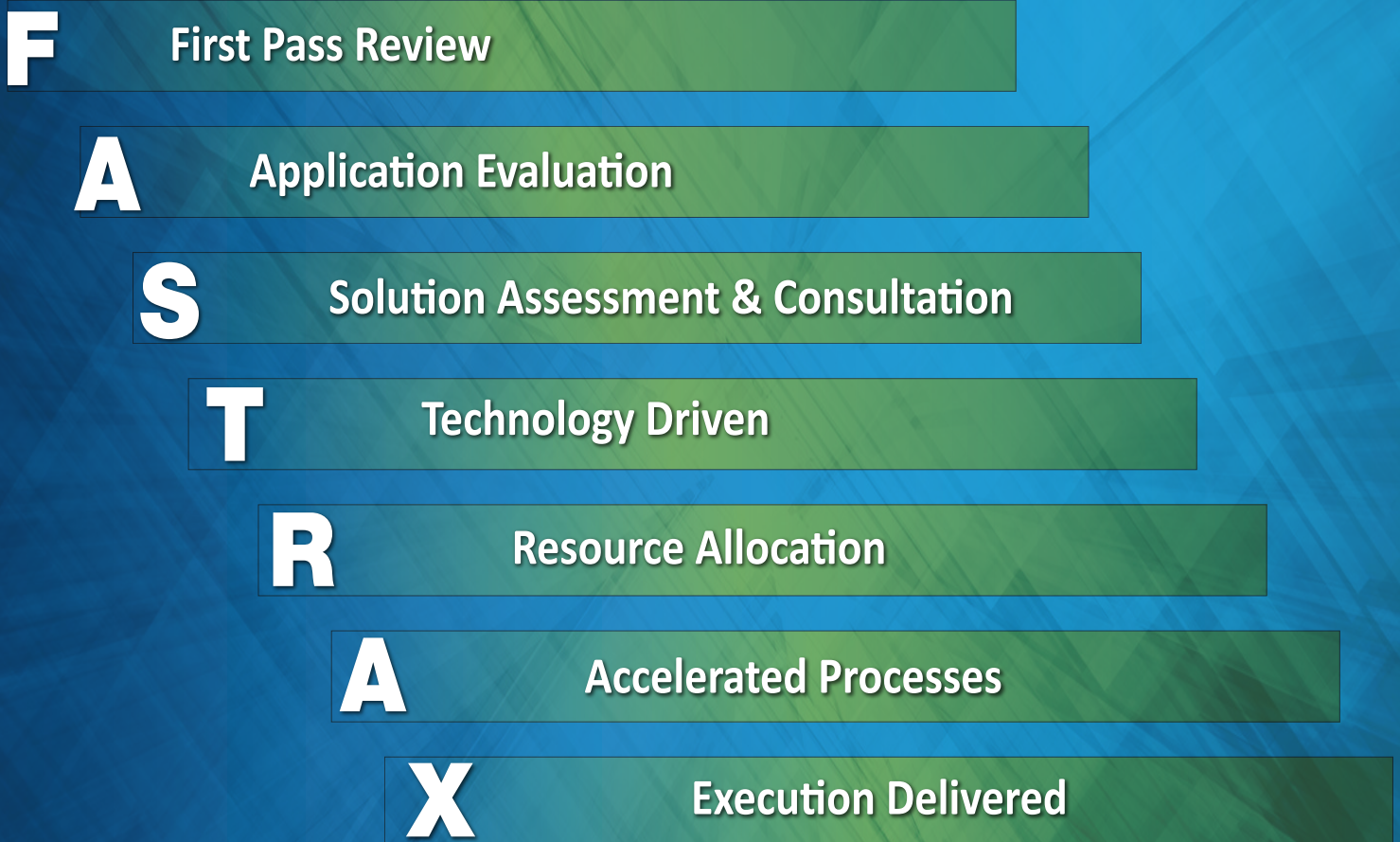




Five Star **FASTRAX**™ Program

“For over a decade Five Star Electric has utilized a proven methodology to deliver products based on custom designed solutions that uniquely solve intermediate to highly complex customer challenges in record speed. To continually achieve this, Five Star deploys critical evaluation and assessment tools early in the process to best determine potential solutions. Customer consultations are emphasized to discuss and gain agreement on the path forward. The most advanced and results oriented technologies are incorporated into the process and all organizational resources are simultaneously allocated. The results are a highly accelerated execution cycle throughout product selection, design, build, and delivery. Internally we call this our FASTRAX program, and now we openly share **FASTRAX** with our customers.”

- James Cullinan, *President of Five Star Electric*



Five Star Service

Providing Service since 1983

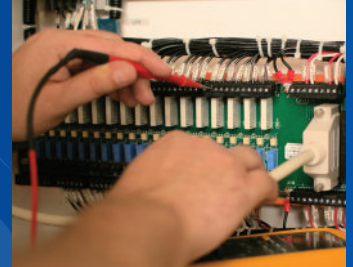
Five Star Electric's Service Team of qualified Electrical Engineers, Electronic Engineers and Field Service Technicians has provided In-House and On-Site electrical engineering, design, maintenance, testing, troubleshooting and repair services to all industries for over 30 years. As an independent service company we are able to evaluate all brands and provide objective, cost effective, flexible and fast solutions optimal for our customers. All In-House services are performed at our ISO 9001 certified quality management system facility by our highly trained staff.

What We Offer:

- ★ Service & Repair of All AC & DC Motor Controls
- ★ SCADA/DCS/PLC Diagnostics & Troubleshooting
- ★ System Retrofit & Replacements
- ★ Commissioning & Installation Services
- ★ Preventive & Predictive Maintenance
- ★ Annual Service Contract
- ★ Harmonic Testing

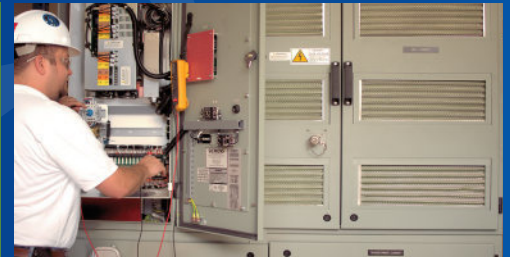
In-House Services:

- ★ Internal Technical Phone Support
- ★ Internal Product/Part Identification & Search
- ★ Product Evaluation & Repair
- ★ RMA Evaluation & Repair
- ★ Board Level Repair
- ★ Instrument Calibration
- ★ Custom Control & PLC Panels
- ★ Complete Integrated Solutions
- ★ In-House Detailed Cost Estimates



Industries Served:

- ★ Municipal
- ★ Oil & Gas
- ★ Power Generation
- ★ HVAC
- ★ Commercial Properties
- ★ Aggregate & Mining
- ★ Agriculture



Professional Services:

- ★ Engineering Evaluation & Design
- ★ SCADA/DCS System Evaluation & Design
- ★ Motor & Motor Control Evaluation and Design
- ★ PLC System Design & Programming
- ★ Power Quality System Analysis
- ★ Training

Offices & Manufacturing Locations:

Houston

19424 Park Row, Ste. 100
Houston, TX 77084

☎ 1.281.492.7090
✉ sales@vfd.com

San Antonio

11135 Iota Dr.
San Antonio, TX 78217

☎ 1.210.492.4200
☎ 1.210.492.4280
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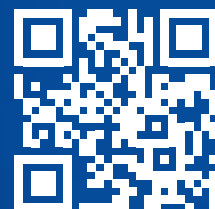
Lubbock

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