



**INNOVATIVE SOLUTIONS**  
PUMPS • MOTORS • CONTROLS



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# MITCHELL'S GENUINE CONTROLS

Whether your job requires an quick ship solution or a custom control panel, Mitchell's has a solution to meet your precise specifications across a variety of applications.



## ENGINEERING SOLUTIONS

Rising energy costs and climatic variation are increasing the need for more efficient system processes in water and wastewater applications. Mitchell Lewis & Staver offers an array of Variable Frequency Drives (VFDs) and NEMA Control Panels to optimize the supply of water and conserve energy while protecting pumps and piping in water systems to reduce downtime and water loss.

Our state-of-the-art facility manufactures both standard and custom control panels per UL508A or UL698A standards. Our panels use only high-quality Danfoss/Vacon® variable frequency drives (VFDs) and range in size from 5 HP to 1,300 HP and beyond.

We offer a full array of built-in features including filtration, programmable logic controllers (PLC), touchscreen operation interface, telemetry options and multiple communication protocols.

We specialize in solutions for Industrial, Wastewater and Water Product applications including agricultural, irrigation, food and beverage, industrial and commercial. Mitchell's Controls provides full panel customization, system testing, technical assistance, product training, and follow-up support.



## Questions to consider when deciding which control is right for your application:

- Do you need a soft starter/soft stop to reduce mechanical stress on the system?
- Does your system need additional precision speed control to maintain pressure/level/flow?
- Do you need to limit peak to peak demand charges?
- Is additional monitoring protection required?

## Questions to ask when sizing control methods:

- What is the application (Submersible)?
- What is the line voltage?
- Is harmonic mitigation required?
- Is surge suppression required?
- What enclosure rating is required?
- What is the max. ambient temperature?
- What is the altitude?



# QUICK SHIP SOLUTIONS

## DANFOSS FC202 VLT AQUA DRIVE

The **VLT® AQUA Drive FC 202** is designed to provide the highest level of performance of AC-motor-driven applications. Each drive is factory tested with a load connected, as a complete assembly, and can realistically offer first-year cost savings between 10-30% compared to traditional drive solutions.

Its high lifetime reliability and low energy consumption and maintenance costs provide you with the lowest total cost of ownership. The on-board manual provides quick and user friendly setup, reducing installation time ensuring a fast route to maximum energy efficiency and motor control. By collecting the most important parameters in one place, the risk of incorrect configuration is reduced significantly.

### FEATURES

- Outdoor-rated option: NEMA 4X / IP66
- Up to 98% drive efficiency for superior energy savings
- Auto-tuning PI controller with flow compensation
- 500' shielded / 1000' unshielded motor cable
- UL-listed single-phase units provide phase conversion for applications in remote areas
- Conformal coating of circuit boards
- Initial, Final and Check Valve ramps
- Preventive maintenance functions
- Multiple pump cascade controller
- Flow / pressure / level control
- 2-year manufacturer warranty (extended warranties available)



## ACROSS-THE-LINE | FULL VOLTAGE PANELS



A full voltage starter controls a pump motor with one contactor that closes the power circuit to turn the motor on and opens to turn the motor off. Across-the-Line Starters offer a lower investment cost for applications requiring a disconnecting means, starting circuitry, and motor overload protection.

### FEATURES

- **Full speed operation**
- **Use with any motor**
- **Low maintenance**
- **Simple operation**

## MECA-600 | REDUCED VOLTAGE SOFT STARTER PANELS



Mitchell's Enhanced Control for Agriculture, **MECA 600**, combines the latest in advanced controls and protections with an enhanced level of intelligence for superior performance in fixed-speed applications.

Industry leading features come standard in this model and include a 65 kAIC rating, service entrance disconnect, full metal handle with locking tab, hand off auto with run light, and smart software features specific to pumping applications.

### FEATURES

- **Multi-Pump feature**
- **Prelube function**
- **Starts per hour**
- **Power thru option**
- **Pump clean function**
- **Pump macros**
- **Integrated USB port**
- **Temperature scale**
- **Time clock**
- **Pump smart card** (optional, not standard)



# CONFIGURABLE SOLUTIONS

## D-SERIES | MITCHELL'S GENUINE CONTROLS

### 5-1300+ HP

Mitchell's Genuine Controls "D" Series NEMA 3R VFD control panels feature the industry leading Danfoss line of Variable Frequency Drives. Fully engineered and customized to your exact specifications, internal features and added components are easily configured, often without modifications to the panel chassis. The D-Series allows for flush-mounting to any surface.

### FEATURES

- Back Channel cooling eliminates 90% of generated heat
- Service entrance rated disconnect with external operator and door interlock
- Pre-programmed with customized menu and quick start guide
- Lockable acrylic hinged cover w/ UV inhibitors
- Mounting kits for wall or floor installation
- Door mounted VFD operator interface
- 120V and VFD I/O wired to a terminal strip for convenience with field connections
- 120V transformer with fusing for ancillary equipment

### D & W Configurable Components

- Power Quality Monitor
- Input Line Reactors
- Passive Harmonic Filters
- Output Load Reactor
- Output DV/DT Filters
- Output Sine Wave Filters
- Across the Line Bypass
- Reduced Voltage Soft Starter Bypass
- Remote Monitoring



## W-SERIES | MITCHELL'S GENUINE CONTROLS

### 5-1300+ HP

Mitchell's Genuine Controls "W" Series NEMA 3R VFD control panels feature the industry leading Danfoss FC202 Aqua Drive with heat sink cooling up to 125 HP. The fan cooled heat sink drive extends through the back of the panel, providing a reduced enclosure footprint and a significant reduction in the internal heat load.

### FEATURES

- External heat sink cooling for high-temperature applications 125Hp and below
- Sealed weatherproof enclosure protects sensitive electronics from outside air
- No fans, filters, or air conditioning required for Improved performance and reduced maintenance
- Hand-Off-Auto selector and speed potentiometer
- Wall mount brackets
- Service entrance rated disconnect with external operator and door interlock
- Pre-programmed with customized menu and quick start guide
- Lockable acrylic hinged cover w/ UV inhibitors
- Door mounted VFD operator interface,
- 120V and VFD I/O wired to a terminal strip for convenience with field connections
- 120V transformer with fusing for ancillary equipment





# CUSTOM CONFIGURATION

## FULLY CUSTOMIZABLE SOLUTIONS

**Mitchell's Custom Controls** featuring Danfoss® drives are available from 5 to 1,300+ horsepower, NEMA-rated and packed with a full array of features to fit your project requirements. Our in-house Engineering Department will assist you in designing and building the right system for the job, every time.

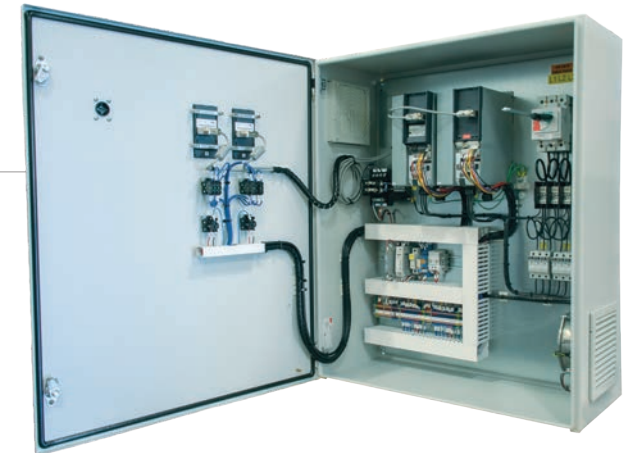
### CUSTOM PANEL OPTIONS:

- Emergency across-the-line or soft start bypass
- Programming and hardware for pressure, level, flow, or combination closed loop control
- Fully engineered wiring schematics, layouts, and 3D renderings provided
- Multiple set-point and HOA selector switch
- Heat Sink Cooling for high temperature and polluted environments
- Integrated input and output line reactors and filters
- Remote Monitoring and Recording Data
- Hand-off-Auto & Speed Potentiometer
- Load Reactor, DV/DT, and sine wave output filters
- Digital and analog radio control and feedback systems
- Programmable Logic Controllers
- Service Entry Rated Disconnect
- Multiple drive systems and communication protocols

- Multiple pump operation
- 60kA surge protection
- Touchscreen interface
- PID Autotune
- NEMA Rated
- Telemetry
- Filtration
- Engineering resources to support enhanced PLC/SCADA programming capabilities for:
  - o Rockwell Automation
  - o Siemens




Mitchell's Controls provides full panel customization, documentation, system testing, technical assistance, product training, and follow-up support.









# REMOTE MONITORING




**AGRICULTURAL  
IoT**




**IRRIGATION  
CONTROL**




**FROST  
MITIGATION**



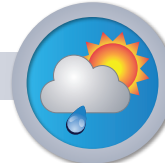
**SOIL  
CONDITIONS**



**NURSERY  
MONITORING**



**WATER USE  
EFFICIENCY**



**ENVIRONMENTAL  
MONITORING**

Mitchell's Remote Monitoring Solution from MeasureTek® offers cloud-based system integration focused on irrigation control, as well as agricultural and environmental monitoring. Through enhanced reporting tools, view data in real-time through field sensors that monitor soil conditions, pumps and valves, pressure, flow, humidity, and outside air temperature to ensure optimum water usage through precision operational controls.

Automated control capabilities allow you to micromanage your resources, create flexible schedules, set parameters and alarms, and enjoy significant savings in labor, resources, and consumables.



- ### FEATURES
- SGMA-Compliant
  - Mounted in Chassis or NEMA 4 configurations
  - Power Requirements 12-48VDC (4.5W @ 24VDC)
  - Connect Danfoss Drives via RS-485 via Modbus RTU
  - Retrofits to any drive, Soft Starter or Across-The-Line panel
  - Remote Alarm Notification via email/text/phone
  - MeasureTek Software integrates with most existing systems regardless of brand







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