



MITCHELL

GENUINE CONTROLS



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



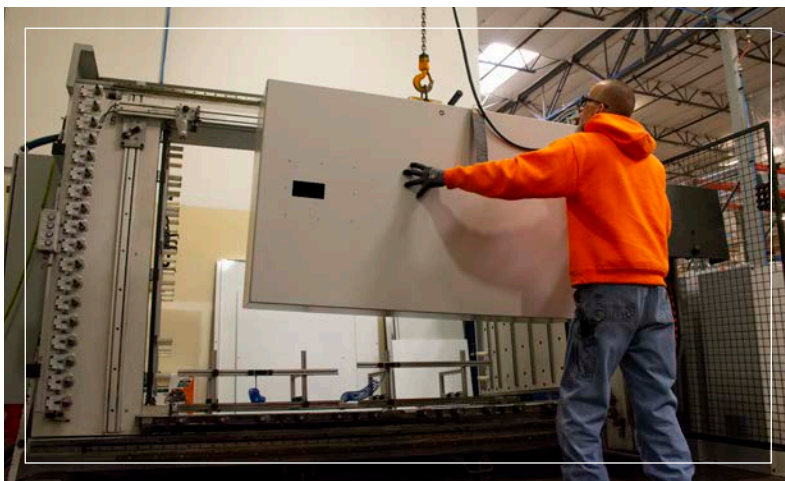
ENGINEERING SOLUTIONS

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. For higher horsepower consult the factory.

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 water product applications including agricultural, irrigation, wastewater, 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)



Danfoss



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)

STANDARD SOLUTIONS

MICA-202 | MITCHELL GENUINE CONTROLS

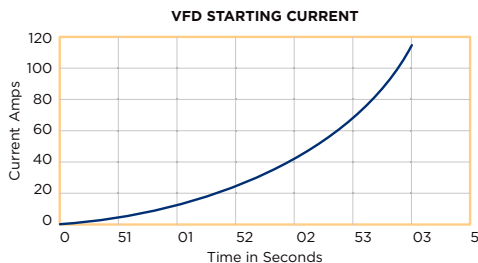
POWERFUL CONTROL & FLEXIBILITY FOR VARIABLE SPEED APPLICATIONS

MITCHELL INTELLIGENT CONTROLS FOR AGRICULTURE

Developed by pump specialists in collaboration with electrical engineers, Mitchell's Intelligent Control for Agriculture, MICA 202, offers a wide range of powerful standard features, which can be expanded with factory or field installed options, for maximum performance in water, wastewater and irrigation applications.

Optimized for both submersible and above ground pump control and engineered to meet or exceed all state energy and UL safety requirements.

The MICA 202 is powered by the Danfoss VLT Aqua Drive FC 202 to provide the highest level of performance and energy efficiency for AC motor driven applications and is compatible with all new motor technologies.



The Variable Frequency Drive converts AC power to DC pulses to create an AC sinewave that controls both the voltage and frequency output to a motor.





**Door Mounted Keypad
Metal Handle & Locking Tab**



Line Reactor
Standard Option Available



Back Channel Cooling
Standard on 150+ HP



**65KAIC
SCCR RATING**

ENERGY SAVINGS

Minimize wear and tear on machinery: By supplying the correct voltage level, VFDs protect and increase the longevity of the system equipment.

Beat peak demand charges: Reduce current peaks when starting large motors with VFDs that gradually ramp the motor up to speed.

Optimize power usage in response to actual load: Manage input power based on system demand and use only the energy required by the driven equipment.

Monitor energy usage: Danfoss FC 202 Aqua Drive comes with a unique feature that continuously displays the time remaining before the drive pays for itself. Typical payback time is one-two years.

Sleep Mode: keeps pump wear and power consumption to an absolute minimum.

STANDARD MODELS

- BASE UNIT
- BASE UNIT + LINE REACTOR

OPTIONAL FEATURES

- TVSS
- DV/DT FILTER
- PUMP START RELAYS
- SET POINT SWITCH

STANDARD FEATURES

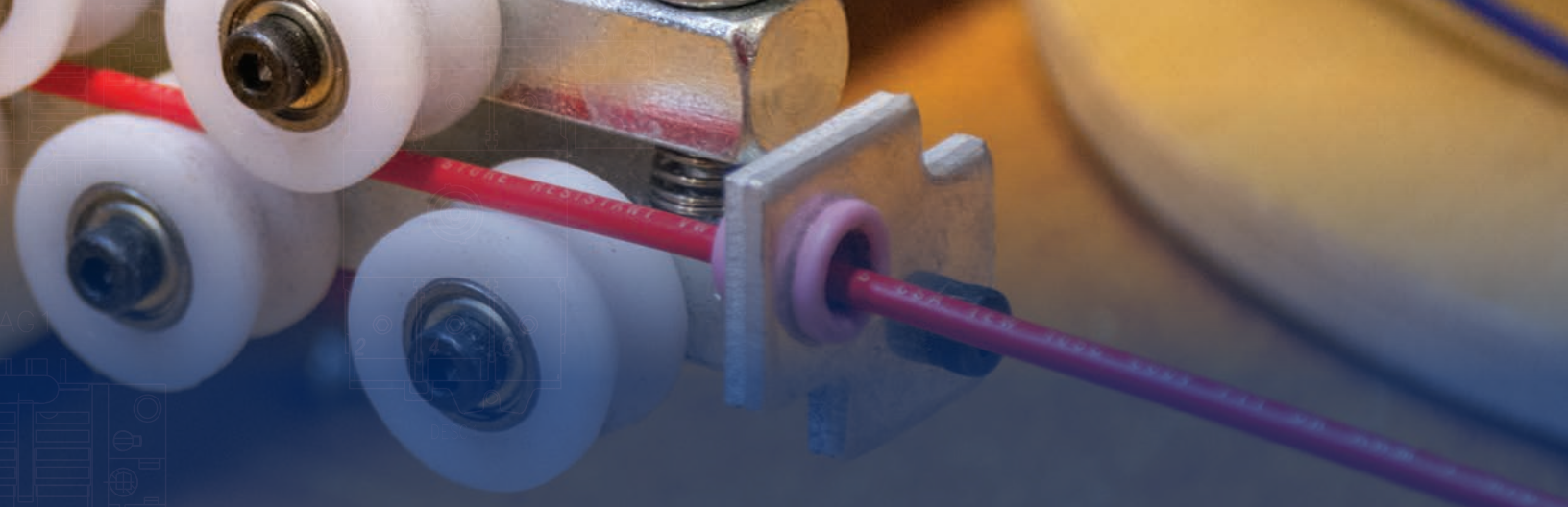
- **65kaIC SCCR Rating**
- **Pre-programmed dedicated features for water, wastewater, and irrigation applications**
- **Modular plug-and-play options facilitate flexibility in the field**
- **Hand-Off-Auto Switch and Speed Pot**
- **Metal handle & locking tab panel disconnect**
- **Finger safe covers**
- **Fan & filtered cooling with thumb screws for simple servicing**
- **On legs or wall mount installation**
- **Solid keypad cover extends keypad life**



CUSTOM CONFIGURATION



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



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:
 - Rockwell Automation
 - Siemens



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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INNOVATIVE SOLUTIONS

PUMPS • MOTORS • CONTROLS

