

Total Fertigation Management with Argus

The Multi-Feed RM is part of a complete fertigation management system designed to fit the way you manage your crops. No matter how simple or complex your requirements, Argus can provide a comprehensive control solution custom configured for your operation and your needs. All fertigation components including the Multi-Feed RM are managed as a single integrated system including:

- Comprehensive monitoring and data recording of crop moisture and associated climate conditions
- Sophisticated, highly flexible irrigation decision management including priority watering for designated zones
- Fully automated management of system capacity, line pressurization, and all irrigation system components including pumps, distribution branches, selector valves, and purge valves
- Control of all types of application equipment including zone valves, NFT, flood floors, flood benches, and watering booms. High precision nutrient control
- Drainage recapture, treatment, chemistry adjustment and recirculation.

An Argus system provides extensive control over all fertigation parameters and activities. You can dynamically adjust watering rates and nutrient concentrations throughout the day and over the entire cropping cycle based on current climate conditions, drainage volumes, leachate EC/pH, and any other specified values. From a single operator interface you can control:

- **Watering frequency** - this can be based on any combination of feedback from moisture sensors, programmable start times, manually initiated waterings and feedings, built-in light and evapotranspiration watering models, and other programmable parameters to suit your requirements.
- **Watering Volume** - both timed and volume based options are available to ensure the correct amount of water is applied for the current conditions. Volumes can be automatically adjusted in relation to the current drain rate, and pulsed application options provide for better soak-in and reduced run-off.
- **Nutrient composition and concentration** - Multi-Feed RM systems integrate seamlessly with the Argus fertigation software giving you precision control over nutrient concentrations and pH with every watering. Just as you can vary the amount of water based on current conditions, a Multi-Feed system enables you to dynamically vary nutrient composition and feed strengths in keeping with your crop management targets.

For more information please contact Argus.



Multi-Feed RM Nutrient Injection Systems

The Multi-Feed RM

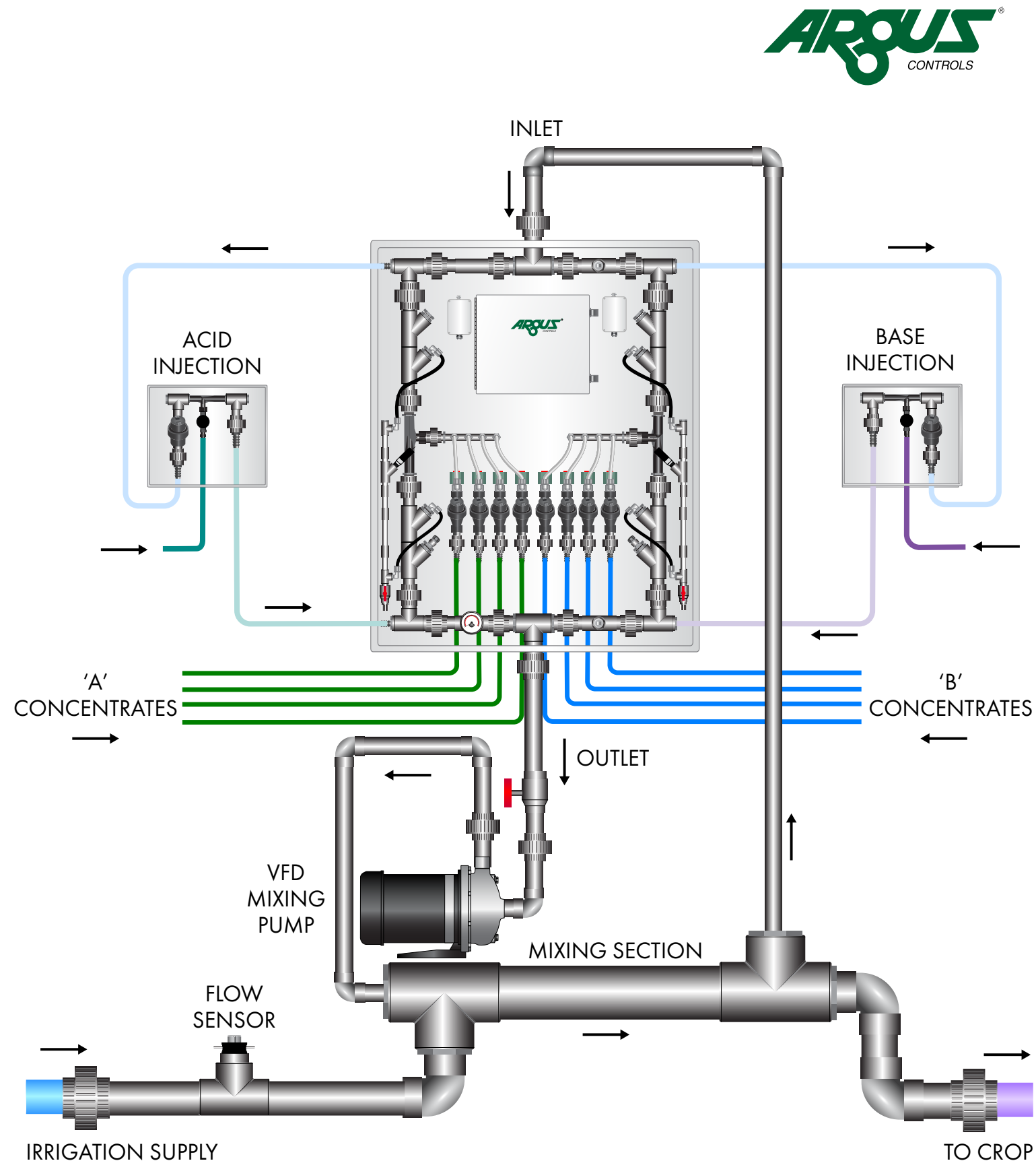
Multi-Feed RM (rack mount) injectors are manufactured exclusively by Argus and feature some of the most advanced capabilities of any nutrient control device. The Multi-Feed RM is a complete high performance injector system designed for pressurized in-line injection and management of dilute tank hydroponic nutrient solutions. It is normally operated by the same Argus Titan controller that manages your irrigation system (if you don't currently have an Argus system, stand-alone models are also available). Though deceptively simple in design, the Multi-Feed RM is a technical marvel when coupled with the nutrient control intelligence of the Argus Titan system.

Depending on your requirements, a Multi-Feed system can provide anything from a single-tank formulation to many separate fertilizer recipes and feed strengths on the same irrigation system. Full single-element dosing options are available as well as standard A/B style stock tank applications. This is all handled seamlessly by the Argus fertigation management software. You begin by configuring your Feed Recipes from the available stock concentrates connected to the injector. The Argus system can support up to 64 recipes on a single irrigation system. In each recipe you can choose simple injection ratios from specified stock tanks or you can enter target values in parts per million for each recipe element and let the fertigation program 'do the math'. It will locate the required elements in the available stock tanks, calculate the amounts to inject for the current flow rate and automatically deliver each recipe 'on-the-fly' when required.

Once your recipes are configured, you simply specify them by name in your irrigation schedules and the Argus system does the rest. EC and pH targets for each recipe are tracked to ensure accuracy and provide a basis for automatic feed strength correction, alarm monitoring, and quality assurance. With Argus 'Feed Forward' intelligence, precision dosing is achieved at all design flow rates without the striping inaccuracies, settling times, and feedback loop oscillations that can plague other injection strategies.

Multi-feed systems use simple venturi injectors to draw the fertilizer concentrates into the mixing line to achieve a desired fertilizer concentration or 'recipe'. The motive flow needed to operate the injectors is provided by an included variable frequency pump that circulates and mixes the concentrates within the Multi-Feed unit. Metering valves are used to provide precise amounts of concentrate for the current recipe and flow rate. Since the injection software controls each metering valve separately, many styles of injection can be accomplished including single-tank, A/B style dosing, and full single element dosing (where separate tanks are used for each fertilizer salt). In fact, all three dosing styles or intermediate combinations can be delivered by the same Multi-Feed system.

Multi-Feed Injector Panel and Flow Schematic



The Multi-Feed RM Advantage

Easy to Install

- ✓ Argus provides full software configuration for integration with your Argus control system and your irrigation applications
- ✓ Drop-in units are ready for immediate use
- ✓ Requires only in/out plumbing connections, a line voltage power connection, and a network connection to the Argus irrigation controller
- ✓ An included variable frequency drive mixing pump provides precision motive flow for injection and mixing
- ✓ Temporary casters are provided for ease of unit placement and installation.

Easy to Operate

- ✓ A Multi-Feed RM is an integral part of the Argus system - a single, unified control and monitoring system capable of providing precision climate automation, extensive monitoring and data recording, and custom alarm notifications for your entire facility
- ✓ Seamless integration with Argus irrigation schedules and irrigation system operations
- ✓ Proven Argus feed-forward control intelligence for fast response and the highest dosing accuracy and safety
- ✓ Custom configured to your specifications: Single head, A/B, and multi-head options are available (up to 8 injection heads are available on a single RM unit - and up to 16 with the addition of a Multi-Feed RME expansion unit including acid + base injection modules)
- ✓ Injectors can be provided for system flow rates anywhere from a few gallons to thousands of gallons per minute.

Safe

- ✓ Positive isolation of stock solutions prevents accidental siphoning
- ✓ Redundant EC and pH monitoring is standard plus extensive system self-diagnostics, automatic safety shutdowns, and alarms

Maximum Performance

- ✓ Ideal for both pressurized in-line and dilute tank applications
- ✓ Low residual volumes for efficient feed switching
- ✓ Excellent mixing at all design flow rates
- ✓ High turn-down models are available
- ✓ Works with a wide range of stock concentration strengths
- ✓ Works with system pressures from 15-80psi
- ✓ Few moving parts - made from simple, high quality components.

Fully Supported by Argus

- ✓ No need for expensive site visits - the system is designed with remote diagnostic capabilities for fast, efficient support by Argus service professionals
- ✓ Modular parts are easily serviceable
- ✓ A spare parts kit is included to ensure maximum 'uptime'.