NETAFIM USA CROP MANAGEMENT TECHNOLOGIES (CMT)

MONITORING/MANAGEMENT SYSTEMS, CONTROLLERS AND DOSING SYSTEMS FOR OPTIMIZED IRRIGATION
ABOUT NETAFIM

NETAFIM IS THE GLOBAL LEADER IN SMART IRRIGATION SOLUTIONS FOR A SUSTAINABLE FUTURE.

Founded in 1965, Netafim pioneered the drip revolution, creating a paradigm shift toward low-flow agricultural irrigation.

Today, Netafim provides diverse smart irrigation solutions - from drippers and sprinklers to high-end digital farming solutions and automated systems - for a range of agriculture, landscaping and mining applications. Netafim also offers large-scale and turnkey open-field and greenhouse projects - from design to maintenance - featuring engineering, project management and financing services.

Since its establishment over 50 years ago, Netafim has been the global leader in agricultural irrigation solutions. With hundreds of leading agronomic and technical professionals, numerous state-of-the-art technologies, and decades of implementation experience, Netafim provides a comprehensive, innovative and field-proven offering for all crops, topographies, climates and conditions. Netafim closely accompanies customers from the get-go, offering end-to-end expert guidance and support to help meet their specific needs.

Serving growers of all sizes - from smallholders to large-scale farmers - Netafim is helping the world grow more with less.

1965
Established at Kibbutz Hatzerim

1966
Introduces world’s first commercialized dripper

1981
Opens first subsidiary outside of Israel

1999
Merges into single corporation

2008
Becomes member of UN CEO Water Mandate

2011
Permira funds acquires controlling interest

2013
Named 2013 Stockholm Industry Water Award Laureate

2015
50 YEARS SHAPING THE FUTURE
Leveraging over 15 years of technological experience, a growing installed base, and a world-class agronomy department that deeply understands growers’ needs, Netafim is the leading global provider of crop management technology solutions.

Comprised of three families of cutting-edge and reliable product types - monitoring and management systems, controllers and dosing systems - Netafim’s CMT offering enables smarter, faster and more accurate irrigation. Taking into account all soil, weather, crop, environmental and hydraulic conditions, our cloud-based solutions present a real-time, in-field situation picture and comprehensive data that can be accessed by a farmer’s PC or mobile device anytime, anywhere. This enables farmers to manage, control and optimize irrigation and fertigation according to the crop’s specific needs. With our CMT offering, farmers enjoy steadier productivity, lower risk and higher efficiency, leading to greater profitability.
CONTROLLERS

ADVANCED, RELIABLE AND FLEXIBLE CONTROL SYSTEMS

Netafim’s controllers cover a wide range of open-field and greenhouse irrigation applications regardless of climate or plot condition. Available in AC and DC versions, the advanced, reliable and flexible controllers manage up to 250 irrigation valves in the field, and up to 50 controllers in the same network.

Our robust controllers connect with Netafim’s NMC Air cloud-based software to a gateway that creates a network of between one to five controllers.
HIGHLIGHTS

• Manages up to 250 irrigation valves
• Displays user-friendly programming interface
• Integrates with cellular or Ethernet communications software
• Increases fertigation accuracy

PRODUCTS

Netafim offers a wide range of controllers for open-field and greenhouse applications.

• NMC PRO - advanced modular, multifunctional system for large plots
• NMC Junior PRO - cost-effective multifunctional system for small and medium plots
• NMC DC - battery-powered system for large and small plots
• NMC PRO Climate - cost-effective system for a wide range of greenhouses located in cold or warm environments
OVERVIEW

The NMC PRO is a state-of-the-art irrigation controller for mid-to-large-scale applications. A robust and user-friendly stand-alone controller that operates under all weather conditions, NMC PRO is suitable for open field and greenhouse solutions.

HIGHLIGHTS & BENEFITS

• Cost-effective, high-level controller
• Mobile and web remote control via NMC Air
• User-friendly, multilingual interface
• High resistance under all weather conditions
• Modular design

FEATURES & FUNCTIONALITY

• Up to 256 outputs for configuring valve irrigation/cooling/misting
• Up to 8 fertilizer (dosing) channels
• Up to 6 water pumps
• Valve control via RF with RadioNet, or via 2-wire cable with SingleNet

ORDERING INFORMATION

Item Number: 33900-00095
Description: NMC Pro Irrigation Controller, 115VAC power supply, 350VA 24VAC transformer, includes 16 24VAC outputs, 8 digital inputs, data plug backup key, 7 expansion slots, double door enclosure, external 115VAC surge suppressor.

Item Number: 33900-003000
Description: NMC Air Kit for NMC Pro Controller with NMC Air Gateway, 115/220VAC power supply, NMC Pro RS485 communication card, 2-year license and enclosure. NMC Air requires internet service via RJ45 Ethernet or optional cellular modem, Item Number 00107-004962.
FEATURES

- 256 flexible outputs
  - Up to 255 valves - irrigation/cooling/misting
  - Up to 6 water pumps
  - Up to 6 main valves
  - Up to 8 fertilizer (dosing) channels
  - Up to 3 agitators
  - Up to 24 backflush filter valves

- Inputs
  - Up to 32 digital inputs for water meter, fertilizer meter and delta pressure switch
  - Up to 22 analog inputs for EC, pH, temperature, relative humidity and pressure

- Irrigation strategy is based on a dosing program, water run time program and irrigation program

- Irrigation starts by either time, conditions, VPD sum, or radiation sum

- Filter flush program starts by either time and/or delta pressure (ΔP)

- Cooling strategy is based on time, actual temperature and relative humidity sensors

- Misting strategy starts by scheduled time; this program can also be used as a simple timer program
NMC Junior PRO Controller

OVERVIEW
The NMC Junior PRO is a cost-effective, multifunctional irrigation controller for small-to-medium-scale applications. Designed for open field and greenhouse applications, NMC Junior PRO has 15 outputs for flexible configuration.

HIGHLIGHTS & BENEFITS
• Cost-effective
• Mobile and web remote control via NMC Air
• Precise EC and pH monitoring and control
• User-friendly and multilingual interface with large graphical display
• Integrated with FertiKit Nutrigation™ system, or as a stand-alone product

ORDERING INFORMATION
Item Number: 74340-023960
Description: NMC Junior Pro Irrigation Controller, 115VAC power supply, 50VA 24VAC transformer, includes 15 24VAC outputs, 6 digital inputs, 5 analog inputs (1 EC, 1 pH, 2 Temperature, 1 Humidity sensor) data plug backup key, double door enclosure and external 115VAC surge suppressor.
FEATURES

- 15 flexible outputs
  - Up to 15 valves - irrigation/cooling/misting
  - Up to 6 water pumps
  - Up to 6 main valves
  - Up to 8 fertilizer (dosing) channels
  - Up to 3 agitators
  - Up to 15 backflush filter valves

- Inputs
  - 6 digital inputs for water meter, fertilizer meter and delta pressure switch
  - 5 analog inputs for EC, pH, 2 x temperature and relative humidity

- Irrigation strategy is based on a dosing program, water run time program and irrigation program
- Irrigation starts by either time, conditions, VPD sum, or radiation sum
- Filter flush program starts by either time and/or delta pressure (ΔP)
- Cooling strategy is based on time, actual temperature and relative humidity sensors
- Misting strategy starts by scheduled time; this program can also be used as a simple timer program
NMC DC Controller

ADVANCED, ROBUST CONTROLLER FOR FARMING AREAS WITHOUT ELECTRICAL POWER

OVERVIEW

The NMC DC is an ideal solution for remote farms that have no electricity source. An advanced and robust stand-alone controller, the NMC DC is suitable for small-to-medium open-field applications.

HIGHLIGHTS & BENEFITS

- Cost-effective, advanced controller
- Mobile and web remote control via NMC Air
- Robust, stand-alone system
- User-friendly and multilingual interface
- Precise EC and pH monitoring and control

ORDERING INFORMATION

Item Number: 74340-013950
Description:
NMC DC Irrigation Controller, 12VDC charging regulator, includes 8 12VDC latching outputs, 4 digital inputs, 4 analog inputs, data plug backup key, double door enclosure, requires solar panel or 12VDC power supply.
FEATURES

- Up to 24 outputs for configuring valve irrigation (up to 255 outputs with RadioNet or SingleNet)
- Up to 6 water pumps
- Up to 8 fertilizer (dosing) channels
- Valve control via RF with RadioNet, or via mono cable with SingleNet
- Irrigation strategy based on dosing program, water run time, and irrigation program
- Irrigation start based on time, condition, VPD sum, or radiation sum
- Filter flush program start based on either time or delta pressure
- Cooling strategy based on time and actual temperature, as well as on relative humidity sensors
- Misting strategy start based on scheduled time; can also be used as a simple timer program
NMC Air

OVERVIEW
NMC Air is advanced cloud-based software that links to Netafim’s NMC controllers to enable remote monitoring and control of farms anytime, anywhere.

HIGHLIGHTS & BENEFITS
- Cloud-based software
- Real-time in-field situation picture
- Water and nutrient usage traceability
- Remote farm operations
- Easy and enjoyable user experience
- Works with NMC PRO, NMC Junior PRO and NMC DC

FEATURES
- Farm status and active irrigation and dosing performance in a single view
- Alarms and notifications to PC and mobile devices
- Manual NMC irrigation controller operations - pause/resume irrigation, start/stop irrigation program, start/stop irrigation valve, start/stop filter flushing
- Irrigation, dosing and water run time filter, flushing/misting, and cooling program editing and creation
- Graph viewing and creation for continuous farm monitoring
- NMC history for farm data analysis, including sensor log, irrigation log, and incomplete irrigation programs

SYSTEM ARCHITECTURE
- NMC Air connects up to 5 NMC irrigation controllers in a network via an NMC gateway by means of cellular or Ethernet communications
- Controllers working with NMC Air:
  NMC PRO, NMC Junior PRO and NMC DC
ORDERING INFORMATION

Item Number: 33900-003000
Description:
NMC Air Kit for a single NMC Pro/DC Irrigation Controller, includes NMC Air gateway, 115/220VAC power supply, NMC Pro/DC RS485 communication card, 2 year license, enclosure.
NMC Air requires Internet service via RJ45 Ethernet or optional cellular modem, Item Number 00107-004962.

Item Number: 33900-003080
Description:
NMC Air Kit for a single NMC Junior Pro Irrigation Controller, includes NMC Air gateway, 115/220VAC power supply, NMC Junior Pro RS485 communication card, 2 year license, enclosure. NMC Air requires Internet service via RJ45 Ethernet or optional cellular modem, Item Number 00107-004962.

TUTORIAL VIDEO
Scan for a tutorial video at Netafim’s YouTube channel
Netafim offers both wireless and wired valve control systems for remote irrigation monitoring and control. Easy to set up and operate, the systems are comprised of remote terminal units (RTUs), communications and software. Designed to interface with Netafim and third-party controllers, these systems offer the highest level of control and reliability for projects of all sizes, while ensuring grower peace of mind.

RadioNet is a unified wireless monitoring and control system. Built with an advanced design that includes four modular expansion slots, RadioNet enables virtually unlimited monitoring and control configurations and scalability to strengthen performance. RadioNet is a secure, energy efficient system that extends geographical coverage between RTUs, while operating effectively in the most extreme climatic conditions.

SingleNet is a 2-wire cable power and communications system. Fast and easy to install, SingleNet is highly reliable, and requires minimum maintenance to ensure effective long-term usage.
HIGHLIGHTS

• Controls all valve operations
• Easily integrates with existing systems
• Lowers hardware and installation costs
• Requires minimal maintenance
• Ensures reliability and peace of mind

PRODUCTS

Netafim offers two valve control systems enabling long-distance irrigation monitoring and control.

• RadioNet - advanced unified wireless monitoring and control system
• SingleNet - 2-wire cable power and communications system
RadioNet

ADVANCED RF VALVE CONTROL

OVERVIEW

RadioNet is a unified wireless monitoring and control system. Featuring an advanced and modular design, RadioNet is comprised of remote terminal units (RTUs), radio frequency (RF) communications, and software to enable long-distance wireless monitoring and control. The user-friendly system ensures reliable and flexible control over RTUs to increase productivity with minimal interruptions at the highest level of scalability.

HIGHLIGHTS & BENEFITS

- Advanced and modular design that easily integrates into existing systems and ensures network stability
- Flexible and versatile to enable system expansion as the enterprise expands
- Repeater technology to avoid infringing objects while covering great distances
- Long-distance signal capabilities
- Control of up to 255 valves provide maximum control and reliability for large-scale projects

ORDERING INFORMATION

Refer to the Crop Management Technologies/Digital Farming Price List for Components and Pricing
FEATURES & FUNCTIONALITY

- Wireless network - optimized seamless wireless network enabling exceptional system architecture with enhanced throughput in virtually any environment
- Modular and scalable - four modular expansion slots enabling virtually unlimited monitoring and control configuration to strengthen performance
- Built-in survey mode - optimal long-term operation with instant analysis by recording frequency interruptions across the entire network from the initial unit installation
- Extended coverage - remote unit operability as a store & forward (S&F) data repeater to increase geographical coverage by up to 2 miles (3 km) between every two units, and by a total of 30 miles (48 km) with all repeaters
- Easy integration - versatility and easy connectivity (using Modbus protocol) to a wide range of controllers making it a cost-efficient tool for future growth
- Energy efficient - low-power consumption design that typically is in sleep mode (reporting and controlling only when needed) to ensure extended battery life; units can be powered by rechargeable batteries and a solar cell
- Diagnostic reliability - embedded advanced features such as immediate assessment of a frequency failure and remote alerts and diagnostics in the event of service failure
- Secure communications protocol - increased data security operation with multiple layers of encryption and time-based data authentication
- Reliability in extreme conditions - remote unit temperature range of -13°F-185°F (-25°C-85°C)

TYPICAL INSTALLATION
SingleNet

2-WIRE CABLE VALVE COMMUNICATIONS CONTROL SYSTEM

OVERVIEW

SingleNet is a 2-wire cable power and communications system. Easily operated and monitored over an RTU network, the SingleNet interface communicates with all controllers. Fast and simple to install, SingleNet is a reliable system that requires minimum maintenance ensuring long-term usage.

HIGHLIGHTS & BENEFITS

• Advanced control over valve operations
• Lower cable and installation costs
• Greater reliability and peace of mind

FEATURES & FUNCTIONALITY

• Powered by 12VDC
• Total cable length of up to 6 miles
• Control of up to 128 remote terminal units (RTUs)
• 2 digital outputs and inputs per RTU
• 2 digital water meter inputs per RTU
• Auto valve shutdown upon communication or power failure
• PC connection for easy setup and monitoring
• Optional plug-in lighting suppression module

ORDERING INFORMATION

Refer to the Crop Management Technologies/Digital Farming Price List for Components and Pricing
TYPICAL INSTALLATION

Up to 100'

Total SingleNet Cable Length: 6.2 miles
DOSING SYSTEMS

FOR MULTI-SIZED GREENHOUSE & OPEN-FIELD APPLICATIONS

Suitable for greenhouse and open-field applications, our advanced dosing systems integrate with Netafim’s world-leading smart irrigation solutions to ensure the highest level of Nutrigation accuracy, while optimizing water, fertilizer and energy usage. Available in manual or automated versions, our systems are based on the Venturi principle and operate across a wide range of pressures. Robust and reliable, the systems address the specific needs of each plot and crop to create the best conditions for maximized and timely yields.

All of our dosing systems integrate with Netafim or third-party controllers. When linked to NMC Air, Netafim’s advanced cloud-based software, the systems can be remotely accessed via the web or a mobile device, enabling farmers to operate and monitor their growing areas anytime, anywhere.
HIGHLIGHTS

- Covers greenhouse and open-field applications of all sizes
- Works with a wide range of pressures
- Offers perfect EC and pH control
- Integrates with Netafim or third-party controllers
- Operates in manual or automated fashion
- Lowers water, fertilizer and energy usage

PRODUCTS

Netafim offers two groups of dosing systems broken down by three applications.

OPEN FIELDS AND ORCHARDS

- FertiOne Plus - two-channel injection system for electricity-fitted sites

NET HOUSES, OPEN FIELDS AND ORCHARDS

- FertiKit 3G - field-proven, fully configurable dosing system

GREENHOUSES

- NetaFlex 3G - homogeneous dosing system for soilless media applications
FertiOne Plus

TWO-CHANNEL, COST-EFFECTIVE FERTILIZER INJECTION SOLUTION

OVERVIEW

FertiOne Plus is a two-channel fertilizer injection solution for open-field sites fitted with electricity. The plug-and-play, fully configurable, and user-friendly FertiOne Plus ensures high efficiency with minimal investment, making it an extremely cost-effective Nutrigation solution.

Built on a sturdy, corrosion-resistant aluminum frame with three-phase dosing boosters to suit the varied needs of sites. FertiOne Plus is available as a basic manual system enabling either simple, straightforward operations or advanced quantitative or proportional control.

HIGHLIGHTS

• Modular Nutrigation system
• Standard platform
• Minimal required investment
• Efficient water, fertilizer and energy consumption
• Wide range of irrigated water capacities
• Quantitative or proportional Nutrigation capabilities
• Near maintenance-free Venturi operations - few moving parts
• Highly accurate dosing channel
• Manual or fully automated operations
• Easy integration into existing irrigation systems
• High-quality components and PVC piping
• Aluminum, corrosion-resistant frame with adjustable legs

BENEFITS

• Easy installation and maintenance
• Broad application coverage, including open fields and orchards
• Highly profitable price/performance ratio
• Integrated with NMC and other controllers, as well as with a range of accessories and peripherals
**TYPICAL INSTALLATION**

- Venturi-operated dosing channel
- Quick-action dosing valves
- Pressure gauge
- Controller (optional)
- Stainless steel dosing booster
- Dosing booster switchbox
- Check valve
- PVC piping (NPT)
- Aluminum, corrosion-resistant frame with adjustable legs

**COMPONENTS**

**ORDERING INFORMATION**

Item Number: 33250-000600
Description:
FertiOne Plus Low Pressure: includes 2 Fertilizer Dosing Channels at 158 GPH, 440VAC three phase booster pump (MTX 5-2), electrical control box with pump breaker and Hand-Off-Auto selector switch, SCH 80 NPT PVC fittings, for main lines up to 50 psi.

Item Number: 33250-000601
Description:
FertiOne Plus High Pressure: includes 2 Fertilizer Dosing Channels at 158 GPH, 440VAC three phase booster pump (MTX 5-3), electrical control box with pump breaker and Hand-Off-Auto selector switch, SCH 80 NPT PVC fittings, for main lines up to 80 psi.

**CAPABILITIES**

- Ensures an accurate mixture across a wide range of flow capacities
FertiKit 3G SP
COST-EFFECTIVE DOSING SYSTEM

OVERVIEW
FertiKit 3G is a fully-configurable, cost-effective fertilizer/acid dosing unit system that carries out precise Nutrigation. FertiKit 3G optimizes the available water flow rate and pressure usage of the main irrigation line to ensure high efficiency at a low investment. Bringing together over a decade of technological know-how and experience, FertiKit 3G maintains a proven track record under the most stringent environmental conditions.

HIGHLIGHTS
- Modular Nutrigation system
- Wide range of soil/substrate applications
- Built around a standard platform
- Minimal investment requirement
- Efficient water, fertilizer and energy consumption
- Unrivaled range of irrigation water capacities
- Quantitative or proportional Nutrigation capabilities
- EC and pH control
- Near maintenance-free Venturi operations - no moving parts
- Highly accurate dosing channels
- Fast and efficient Nutrigation recipe adjustments
- Manual or fully automated operations
- Easy integration into existing irrigation systems

BENEFITS
- Easy to install and maintain system
- In-house developed offering
- Broad application coverage, including open fields and orchards
- Highly profitable price/performance ratio
ORDERING INFORMATION

Item Number: 33200-049000
Description:
**FertiKit 3G SP NPT Low Flow**: includes 4 dosing channel slots, 2 Fertilizer dosing Channels at 35 GPH, 1 Acid Dosing Channel at 13 GPH, and 1 expandable dosing channel slot (for a 13 or 35 GPH dosing channel), 220VAC single phase booster pump (MTX5-3 60Hz), electrical control box with disconnect, pump breaker, and Hand-Off-Auto selector switch, SCH 80 NPT PVC fittings.

**EC/pH Monitoring Kit**: includes 4G Monitor (24VAC, wall mount), 1 EC sensor, 1 pH sensor, calibration fluid packets (5 each of pH 7.0, pH 4.0, EC 1.41), PVC unions.

**NMC Pro Irrigation Controller**: 115VAC power supply, 350VA 24VAC transformer, includes 16 24VAC outputs (5 used by FertiKit, 11 free), 8 digital inputs (1 used by FertiKit, 7 free), 11 analog inputs (2 used by EC/pH Monitoring Kit, 9 free), data plug backup key, 6 expansion slots, double door enclosure.

**NMC Air Kit**: for a single NMC Pro/DC controller, includes NMC Air gateway, 115/220VAC power supply, NMC Pro/DC RS485 communication card (installed), 2 year license, enclosure. NMC Air requires Internet service via RJ45 Ethernet or optional cellular modem Item Number 00107-004962.

Item Number: 33200-050030
Description:
**FertiKit 3G SP NPT High Flow** - same features as Item 33200-049000 above with the following changes:
2 Fertilizer dosing Channels at 90 GPH and 440VAC three phase booster pump (CM15-2).

TYPICAL INSTALLATION

COMPONENTS
- Quick-action dosing valves
- Wide range of integrated accessories and peripherals
- High-quality components and PVC piping
- Aluminum, corrosion-resistant frame with adjustable legs

CAPABILITIES
- Versatile flow capacity
- Up to 4 highly accurate 13-90 GPH fertilizer/acid dosing channels
NetaFlex 3G
STATE-OF-THE-ART OPEN TANK MIXING SYSTEM

OVERVIEW
Featuring a state-of-the-art open tank mixing system, Netaflex 3G provides very high level of dosing precision and uniformity for greenhouses crops. A modular CE-compliant dosing system, NetaFlex 3G easily integrates with multiple Netafim and third-party controllers and monitoring systems. NetaFlex always injects a uniform quantity of nutrients and perfect EC and pH control.

HIGHLIGHTS
- Modular Nutrigation system
- Wide range of soil/substrate applications
- Built around a standard platform
- Minimal investment requirement
- Efficient water, fertilizer and energy consumption
- Very large range of irrigation water capacities
- Quantitative or proportional Nutrigation capabilities
- EC and pH control
- Near maintenance-free Venturi operations - few moving parts
- Highly accurate dosing channels
- Fast and efficient Nutrigation recipe adjustments
- Easy integration into existing irrigation systems
- Multilingual system

BENEFITS
- Easy to install and maintain system
- In-house developed offering
- Covers all applications from greenhouse in soil to very intensive soilless media
- Requires minimal investment with rapid ROI
TYPICAL INSTALLATION

ORDERING INFORMATION

Item Number: 33400-005900

Description:

NetaFlex 3G: includes 6 dosing channel slots, 6 Fertilizer dosing Channels at 13 GPH, 220VAC three phase booster pump (CM10-2), electrical control box with disconnect, pump breaker, and Hand-Off-Auto selector switch.

EC/pH Monitoring Kit: includes 4G Monitor (24VAC, wall mount), 1 EC sensor, 1 pH sensor, calibration fluid packets (5 each of pH 7.0, pH 4.0, EC 1.41), PVC unions.

NMC Pro Irrigation Controller: 115VAC power supply, 350VA 24VAC transformer, includes 16 24VAC outputs (7 used by NetaFlex, 9 free), 8 digital inputs (2 used by NetaFlex, 9 free), 11 analog inputs (2 used by EC/pH Monitoring Kit, 9 free), data plug backup key, 6 expansion slots, double door enclosure.

COMPONENTS

- Quick-action dosing valves
- Wide range of integrated accessories and peripherals
- High-quality components and PVC piping
- Aluminum, corrosion-resistant frame with adjustable legs

CAPABILITIES

- Versatile flow capacity
- Up to 6 highly accurate 13-160 GPH fertilizer/acid dosing channels