

PULSAFEEDER®

MicroVision^{EX} is a microprocessor-based conductivity, pH, and ORP controller, with the features and functions you need for accurate monitoring and control of cooling tower water that won't break your budget!

Features

- Toroidal conductivity sensor.
- One-point calibration.
- Large easy to read color display.
- Lockable front cover.
- Multiple level security codes.
- Up to 10 digital inputs.
- Optional 4-20 mA analog outputs and inputs.
- Dry contact alarm output.
- Battery backup.
- Optional Make-up conductivity control with a toroidal sensor.
- USB data logging is standard:
 - Up to 2 years of data logging.
 - Upload/Download program settings.
 - Upgrades to the Operating System.
- Optional Ethernet interface.

Controls



Bleed

- Solenoid valves, or motorized ball valves

pH and ORP Control

- Pumps, solenoid valves, or motorized ball valves

Up to 6 Selectable Timer Relays

- Limit timer
- Percent timer
- % post bleed with limit timer
- Water meter pulse timer
- Biocide control timer, with pre-bleed, lockout, and conductivity minimum
- 4-20mA input, pH, or ORP set point control
- Alarm output

Operating Benefits

- Easy installation.
- Easy programming based on MicroVision simplicity.
- Toroidal conductivity probe.
 - No need to recalibrate conductivity probe.
 - Reduced potential for fouling.
- Two year warranty.
- Wide control range: 0 – 9,999 $\mu\text{S}/\text{cm}$.
- Compact size saves space and reduces freight cost.



Aftermarket

- Solenoids
- Motorized Ball Valves
- Water Meters
- Corrosion Coupon Racks
- Metering Pumps (PULSAtron, XP Series)



MicroVision^{EX}
Cooling Tower Controller

Specifications and Model Selection Cooling Tower Controller

Model	Control Parameters	Relays	Timers	Probes	USB	4-20mA Inputs	4-20mA Outputs	Digital Inputs
MVECXXX	Conductivity	4	3	1	✓	0 to 1	0 to 1	5
MVEC5XX	Conductivity	5	4	1	✓	0 to 1	0 to 1	5
MVECPXX	Conductivity and pH	8	6	2	✓	0 to 2	0 to 4	10
MVECOXX	Conductivity and ORP	8	6	2	✓	0 to 2	0 to 4	10
MVECP0X	Conductivity, pH and ORP	8	5	3	✓	0 to 2	0 to 4	10
MVECP0M	Conductivity, Make-Up, pH and ORP	8	5	4	✓	0 to 2	0 to 4	10

Engineering Data Digital Inputs

Digital Inputs	Input 1	Inputs 2 to 4	Input 5	Inputs 6 & 7	Inputs 8, 9 and 10
Function	Flow Switch	Drum Level	Water Meter	Water Meter	Water Meter
Dry Contact	✓	✓	✓	✓	✓
Hall Effect			✓		✓

Engineering Data Controller

Enclosure:	IP65
Temperature Range:	122°F / 50°C
Power Supply:	100 VAC – 240 VAC / 50/60Hz / 8A
Control Output:	8 Amps max
Display:	Multicolor graphical LCD
Set Point Range:	0 - 9,999 µS/cm 0 – 14 pH -2000 - + 2000mV
Set Point Types:	Rising or Falling
Languages:	English Spanish Portuguese

Engineering Data Sensor

Maximum Temperature:	122°F / 50°C
Flow Switch Activate Flow Rate:	Approx. 1 GPM / 3.78 LPM
Conductivity Temp. Comp. Range:	32°F - 122°F / 0°C - 50°C
Maximum Pressure:	125 PSI (8.6 BAR)
Sensor Type:	Toroidal Conductivity Standard industrial pH and ORP sensors

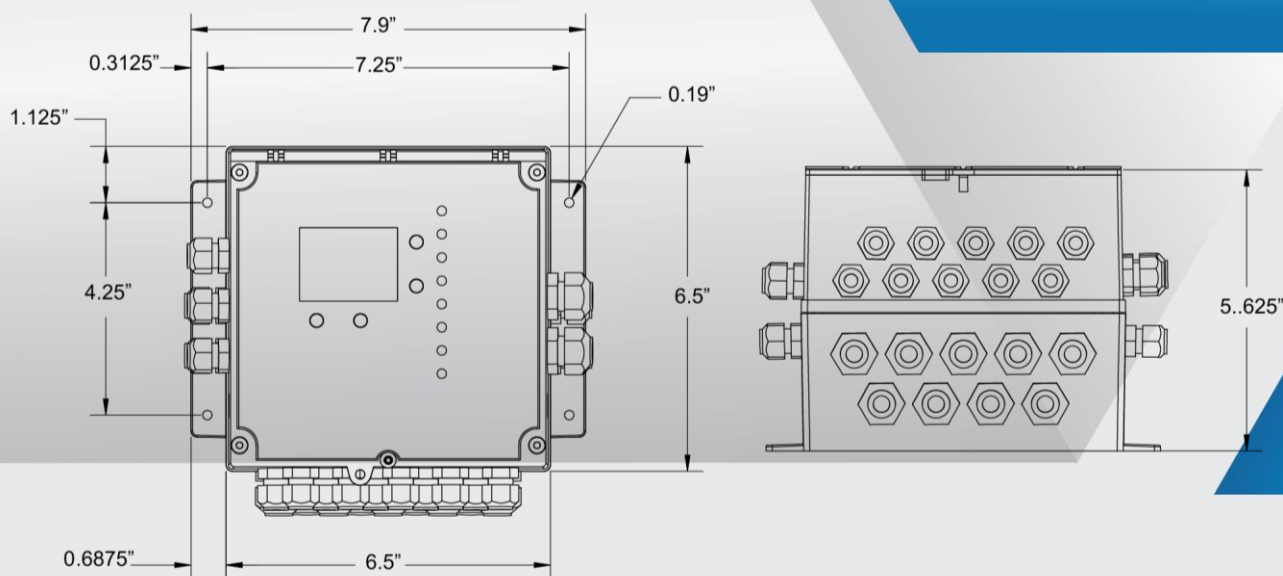
MicroVision EX Panel Systems



Pulsafeeder's MicroVision Systems are designed to provide complete and easy to install solutions for cooling tower applications.

- Rugged custom fabricated assemblies.
- Turn-key simplicity.
- Industrial-grade durability.
- Mounting locations for up to three pumps.
- Factory assembled and hydrostatically tested.

Dimensions



www.pulsatron.com

PULSAFEEDER

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An ISO 9001 Certified Company

MVE001 H15

IPEX
FLUID & METERING

MicroVision^{EX}



- **Based on MicroVision Simplicity**
- **Merged with Advanced Technology**
- **High End Features at Affordable Value**
- **Legendary Toroidal Probe Performance**

- **IP65 - UV Stabilized Enclosure**
- **Toroidal Sensor**
- **(4) Sensor Inputs**
- **(8) Relay Outputs**
- **(2) 4-20mA Inputs**
- **(4) 4-20mA Outputs**
- **Data Logging - USB**
- **Data History Graphing Tool**
- **Remote Communication**

 PULSAFEEDER[®]

ENCLOSURE

- * **IP65**
- * **UV Stabilized**
- * **Lockable Front Cover**

TOROIDAL SENSOR

- * **Maintenance Free**
- * **Easy Access Probe Tee**

(4) SENSOR INPUTS

- * **pH**
- * **ORP**
- * **Conductivity**
- * **Make Up Conductivity**

(8) RELAY OUTPUTS

- * **pH Control**
- * **ORP Control**
- * **Conductivity Control**
- * **Fully Programmable Timers**

(2) 4-20mA INPUTS

Can be used in conjunction with a variety of transmitters & sensors

- * **Record Readings**
- * **Control Output Relays**

(4) 4-20mA OUTPUTS

Transmit Any of the Sensor Inputs

- * **Conductivity**
- * **pH**
- * **ORP**
- * **Make Up Conductivity**
- * **4-20mA Inputs**

DATA LOGGING - USB

- * **Download Data Files Up to 2 Years**
- * **Upload & Download Program Files**
- * **Update Firmware**
- * **Export Files as .csv**

COLLECT HISTORICAL DATA

- * **Program Changes**
- * **Alarm Conditions**
- * **Water Meter Totals**
- * **Analog Input Values**
- * **Relay Run Times & Run Status**

REMOTE COMMUNICATION

Stay connected with your system

- * **Mobile Device**
- * **Laptop**

EXcellence in performance

EXceptional range & accuracy

EXcellent value & quality

EXtended system uptime

EXpanded features & options

MicroVision^{EX} Series

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 - Upgrades to the Operating System.
- Optional Ethernet interface.



Model #	Control Parameters	Programmable Timers	Flow Switch	Panel Mounted	Pump Mounts	Digital Inputs	USB
MVECXXXPX-XXX-XXX	Conductivity control	4	No	No	0	5	YES
MVECXXXPF-XXX-XXX	Conductivity control	4	Yes	No	0	5	YES
MVECXXXPA-XXX-XXX	Conductivity control	4	Yes	Yes	0	5	YES
MVECXXXPD-XXX-XXX	Conductivity control	4	Yes	Yes	1 to 3	5	YES
MVEC5XXPF-XXX-XXX	Conductivity control	5	Yes	No	0	5	YES
MVEC5XXPA-XXX-XXX	Conductivity control	5	Yes	Yes	0	5	YES
MVECPXXPF-XXX-XXX	Conductivity and pH	6	Yes	No	0	10	YES
MVECPXXPA-XXX-XXX	Conductivity and pH	6	Yes	Yes	0	10	YES
MVECPXXPD-XXX-XXX	Conductivity and pH	6	Yes	Yes	1 to 3	10	YES
MVECOXXPF-XXX-XXX	Conductivity and ORP	6	Yes	No	0	10	YES
MVECOXXPA-XXX-XXX	Conductivity and ORP	6	Yes	Yes	0	10	YES
MVECOXXPD-XXX-XXX	Conductivity and ORP	6	Yes	Yes	1 to 3	10	YES
MVECOXXPF-XXX-XXX	Cond.,pH and ORP	5	Yes	No	0	10	YES
MVECOXXPA-XXX-XXX	Cond.,pH and ORP	5	Yes	Yes	0	10	YES
MVECOXXPD-XXX-XXX	Cond.,pH and ORP	5	Yes	Yes	1 to 3	10	YES

Note: For CE models change the end of the code from "-XXX" to "-CZXXX"

Programmable Timer Modes:

- Pulse
- Percent
- Percent Post Bleed
- Limit
- 28 Day –Biocide
- Alarm Relay

Digital Input Assignments

- #1 Flow Switch
- #2 to 4 Drum Levels
- #5 Water Meter – Hall Effect or Dry Contact
- #6 & 7 Water Meter – Dry Contact
- #8, 9 and 10 Water Meter – Hall Effect or Dry Contact

MicroVision EX Parts

Part No.	Description
12-600-00	Acc kit, Fuse, relay name labels, IOM
04-000-21-1	Toroidal probe
04-060-00	pH probe
04-060-01	ORP probe

MicroVision EX Accessories and Expansions

Part No.	Description
UGK-MILOUT	4-20mA output Upgrade kit (1)

MicroVision EX and PULSAlink Network Security

Pulsafeeder
27101 Airport Rd.
Punta Gorda, FL 33982
Phone: (800) 333-6677
pulsatron.com

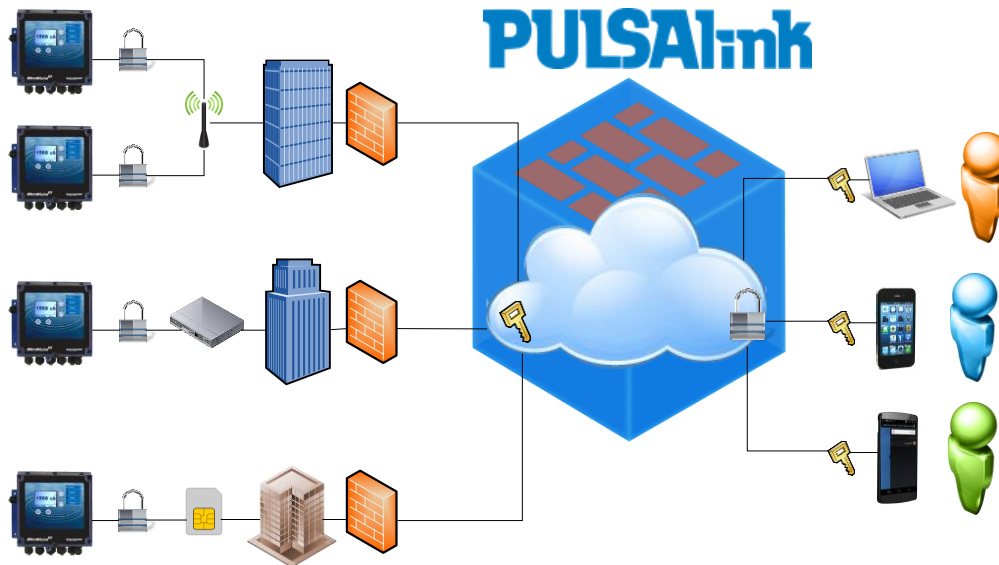
Scope:

This document is intended to outline the MicroVision EX's networking security parameters. It outlines the design considerations made to ensure all controller data is thoroughly protected and any LAN (local area network) remains secure. The information contained in the document is non-proprietary and is intended for distribution.

Connectivity Specifications:

- Physical Layer: IEEE 802.3 – Wired Ethernet protocol (CAT5 connector)
- Connection Protocol: DHCP (Dynamic Host Configuration Protocol)
- Communication Port: 443

Communication Architecture:



Access your controller securely through PULSAlink. Encrypted two way communication. Leave networks protected and secure without the need for any modifications.

Communication Security:

The embedded device is preconfigured to communicate to <https://www.pulsalink.net/>. All information during transmission is completely encrypted. No configuration required.

User Accessibility:

For an end user to access a controller on <https://www.pulsalink.net/> they will need their own credentials setup and would need to be assigned access to any requested controller. Even when interacting with the controller the user is not directly connected to the controller. The LAN where the controller resides remains isolated from the end user.