

PULSAFEEDER[®]

Process Control Instrumentation



Product

Effective 01/01/19

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IMPORTANT INFORMATION WHEN PLACING AN ORDER

1. Fax, mail or telephone orders directly to the Customer Service Department:
Pulsafeeder Incorporated
27101 Airport Road, Punta Gorda, Florida, USA 33982-2462
E-Mail: ppgpulsaspo.cs@idexcorp.com
Telephone: 800-333-6677 or 941-575-3800
Fax: 800-456-4085 or 941-575-4085
www.pulsatron.com
2. Please have the following information available when placing an order:

Account Name	Special Tags or Marks (if needed)
Billing Zip Code	Item(s) Being Ordered
Purchase Order Number	Quantity of Each Item
Ship to Address	Pricing
Payment Terms	Shipping Information
3. Orders are entered upon receipt. Our ability to change in house orders is limited. Please be certain your orders are complete when placed. Any order cancellation or change request is subject to a \$50.00 fee.
4. Orders are assigned standard lead times based on the size of the order and product mix.
Orders requiring expedited shipping (sooner than the standard lead times) may be subject to a \$50 expedite charge. Unless the order clearly requests expedited shipping, the order will be treated as a routine order. When expedited shipping is requested, a designated carrier must be selected. Orders that need to ship the same day must be received by **12:00 PM EST**. Same day and next working day shipping is generally available for larger orders, please verify with customer service. Pulsafeeder shall have no liability if it is unable to provide expedited shipping of an order.
5. Repairs and returns are coordinated through our Customer Service Department. All orders returned must have factory authorization, and are subject to a 25% restocking charge for standard product.
6. Orders can also be placed using PULSAshop, a secure webshop. Place orders where and when you want. Please register or log in at <https://pulsashop.pulsatron.com/pulsafeeder/login>.
7. Other Important Information:
 - Prices are subject to change without notice, and are effective when order is accepted, and acknowledged at point of shipment.
 - When ordering, specify your P.O. number, model number, quantity, price, shipping and/or billing address and order date.
 - **Standard terms are NET 30 days from date of invoice for approved accounts on open account.**
 - **WE ACCEPT VISA AND MASTERCARD.**
 - **ONE PERCENT DISCOUNT AVAILABLE FOR PAYMENT WITHIN 10 DAYS OF INVOICE DATE FOR ACCOUNTS THAT ARE CURRENT.**
 - **PAYMENT BY CREDIT CARD WILL NOT RECEIVE AN ADDITIONAL DISCOUNT.**
 - All prices are FCA, Shippers Dock, Punta Gorda, FL.
 - Custom product sales are final.
 - Charges for export documentation may apply. Fees vary by requirements.
 - Expedite fees may apply. **Orders requiring expedited shipping (sooner than the standard lead times) may be subject to an expedite charge**
 - **Minimum factory order of \$30.**
 - Fees for changes to or cancellation of orders may apply
 - Possession of price schedule does not guarantee right to purchase direct from factory.
 - Pulsafeeder has the right to ship any order when it is complete or partially complete unless the order is marked do not ship before the request date.

MicroVision^{EX}

MicroVision EX 3.0 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

- Torodial 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.
- Dry contact alarm output.
- Battery backup.
- USB data logging is standard:
 - ◊ Up to 2 years of data logging.
 - ◊ Upload/Download program settings.
 - ◊ Upgrades to the Operating System.
- Optional PULSAlink cloud based communications.
- eServiceReport compatible.
- Customizable names for relays, water meters and inputs, synced to Controller, PULSAlink cloud, App and reports.
- Unsurpassed reporting and graphing.
- Enhanced charting capabilities.
- Customizable timer programs without system reboot.
- Ability to add 2nd water meter.
- Robust data logging capabilities.



Model Number	Probe Style	Programmable Timers	Panel / Pump Mount	Digital Inputs	PULSAlink and Smart Phone App Compatible ²
Conductivity Control					
MVECXXXPX-XXX-XXX ¹	Torodial	3	None	6	No
MVECXXXPX-XXX-CZXXX ¹	Torodial	3	None	6	No
MVECXXXPF-XXX-XXX	Torodial	3	None	6	No
MVECXXXPF-XXX-CZXXX	Torodial	3	None	6	No
MVECXXXPA-XTX-XXX	Little Dipper PTSA	3	Yes / No	6	No
MVECXXXPA-XPX-XXX	Pyxis PTSA	3	Yes / No	6	No
MVECXXXPA-XXX-XXX	Torodial	3	Yes / No	6	No
MVECXXXPA-XXX-CZXXX	Torodial	3	Yes / No	6	No
MVECXXXPA-EXX-XXX	Torodial	3	Yes / No	6	Included
MVECXXXPA-EXX-CZXXX	Torodial	3	Yes / No	6	Included
MVECXXXPA-ETX-XXX	Little Dipper PTSA	2	Yes / No	6	Included
MVECXXXPA-EPX-XXX	Pyxis PTSA	2	Yes / No	6	Included
MVECXXXPD-XXX-XXX	Torodial	3	Yes / Yes - 3	6	No
MVECXXXPD-XXX-CZXXX	Torodial	3	Yes / Yes - 3	6	No
MVECXXXPD-EXX-XXX	Torodial	3	Yes / Yes - 3	6	Included
MVECXXXPD-EXX-CZXXX	Torodial	3	Yes / Yes - 3	6	Included
MVEC5XXPF-XXX-XXX	Torodial	4	None	6	No
MVEC5XXPF-XXX-CZXXX	Torodial	4	None	6	No
MVEC5XXPA-XXX-XXX	Torodial	4	Yes / No	6	No
MVEC5XXPA-XXX-CZXXX	Torodial	4	Yes / No	6	No
MVEC5XXPA-EXX-XXX	Torodial	4	Yes / No	6	Included
MVEC5XXPD-EXX-XXX	Torodial	4	Yes / Yes - 3	6	Included
MVEC5XXPD-EXX-CZXXX	Torodial	4	Yes / Yes - 3	6	Included
MVEC5XXPA-ETX-XXX	Little Dipper PTSA	3	Yes / No	6	Included
MVEC5XXPA-EPX-XXX	Pyxis PTSA	3	Yes / No	6	Included
Conductivity and pH					
MVECPXXPF-XXX-XXX	Torodial	6	None	10	Order: ACT-PULSALINK
MVECPXXPF-XXX-CZXXX	Torodial	6	None	10	Order: ACT-PULSALINK
MVECPXXPA-XXX-XXX	Torodial	6	Yes / No	10	Order: ACT-PULSALINK
MVECPXXPA-XXX-CZXXX	Torodial	6	Yes / No	10	Order: ACT-PULSALINK
MVECPXXPA-EXX-XXX	Torodial	6	Yes / No	10	Included
MVECPXXPA-EXX-CZXXX	Torodial	6	Yes / No	10	Included
MVECPXXPA-ETX-XXX	Little Dipper PTSA	5	Yes / No	10	Included
MVECPXXPA-EPX-XXX	Pyxis PTSA	5	Yes / No	10	Included
MVECPXXPD-XXX-XXX	Torodial	6	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECPXXPD-XXX-CZXXX	Torodial	6	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECPXXPD-EXX-XXX	Torodial	6	Yes / Yes - 3	10	Included
MVECPXXPD-EXX-CZXXX	Torodial	6	Yes / Yes - 3	10	Included

Conductivity and ORP					
MVECXXPF-XXX-XXX	Torodial	6	None	10	Order: ACT-PULSALINK
MVECXXPF-XXX-CZXXX	Torodial	6	None	10	Order: ACT-PULSALINK
MVECXXPA-XXX-XXX	Torodial	6	Yes / No	10	Order: ACT-PULSALINK
MVECXXPA-XXX-CZXXX	Torodial	6	Yes / No	10	Order: ACT-PULSALINK
MVECXXPA-EXX-XXX	Torodial	6	Yes / No	10	Included
MVECXXPA-EXX-CZXXX	Torodial	6	Yes / No	10	Included
MVECXXPA-ETX-XXX	Little Dipper PTSA	5	Yes / No	10	Included
MVECXXPA-EPX-XXX	Pyxis PTSA	5	Yes / No	10	Included
MVECXXPD-XXX-XXX	Torodial	6	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECXXPD-XXX-CZXXX	Torodial	6	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECXXPD-EXX-XXX	Torodial	6	Yes / Yes - 3	10	Included
MVECXXPD-EXX-CZXXX	Torodial	6	Yes / Yes - 3	10	Included
Conductivity pH and ORP					
MVECPOXP-XXX-XXX	Torodial	5	None	10	Order: ACT-PULSALINK
MVECPOXP-XXX-CZXXX	Torodial	5	None	10	Order: ACT-PULSALINK
MVECPOXP-EXX-XXX	Torodial	5	None	10	Included
MVECPOXPA-XXX-XXX	Torodial	5	Yes / No	10	Order: ACT-PULSALINK
MVECPOXPA-XXX-CZXXX	Torodial	5	Yes / No	10	Order: ACT-PULSALINK
MVECPOXPA-EXX-XXX	Torodial	5	Yes / No	10	Included
MVECPOXPA-EXX-CZXXX	Torodial	5	Yes / No	10	Included
MVECPOXPA-ETX-XXX	Little Dipper PTSA	4	Yes / No	10	Included
MVECPOXPA-EPX-XXX	Pyxis PTSA	4	Yes / No	10	Included
MVECPOXPD-XXX-XXX	Torodial	5	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECPOXPD-XXX-CZXXX	Torodial	5	Yes / Yes - 3	10	Order: ACT-PULSALINK
MVECPOXPD-EXX-XXX	Torodial	5	Yes / Yes - 3	10	Included
MVECPOXPD-EXX-CZXXX	Torodial	5	Yes / Yes - 3	10	Included

1. Does not include Flow Switch
2. Download PULSAlink on the App Store or Google Play

Programmable Timer Modes:

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

Digital Input Assignments

- #1 Flow Switch
- #2, 3 & 4 Drum Levels
- #5 Water Meter – Hall Effect or Dry Contact
- #6 & 7 Water Meter – Dry Contact
- #8, 9 & 10 Water Meter–Hall Effect or Dry Contact

MicroVision EX Parts	
Part Number	Description
12-600-00	Acc kit, Fuse, relay name lables, IOM
16-170-07	Probe Tee
16-170-08	Flow Assembly, Cond, Flow
04-080-01	Little dipper sensor kit, Sensor and tee
04-000-21-1	Toroidal probe
04-060-00	pH probe
04-060-01	ORP probe
04-080-02	Pyxis sensor kit, Sensor and tee

MicroVision EX Accessories and Expansions	
Part Number	Description
CK750	Check Valve Kit
PC025	Cable, Cond, Flow - Extension Kit; 25 ft
PC050	Cable, Cond, Flow - Extension Kit; 50 ft
PC075	Cable, Cond, Flow - Extension Kit; 75 ft
PC100	Cable, Cond, Flow - Extension Kit; 100 ft
UGK-MILIN	4-20mA input Upgrade kit (1)
UGK-MILOUT	4-20mA output Upgrade kit (1)
ACT-PULSALINK	PULSAlink cloud communications connection kit (required for remote communications)

MicroVision^{EX}

Microvision Ex Controller Mounted Panels

Pulsafeeder offers Microvision Ex Controller Mounted Pre-fab Panels. Worry less about equipment installation. Do more with a professional appearance and factory fabricated standard equipment setup.

Features

- Professional Appearance
- Pre-installed Equipment
- Fabricated to Provide Standard Equipment Setup



Model Number	Control Parameters	Probe	Programmable Timers	Relays	PULSAlink and Smart Phone App Compatible ²
MicroVision EX Controller Mounted Panels					
MVECXXXPD-EPX-XXX	Conductivity	Toroidal, PYXIS (PTSA)	2	4	Included
MVECXXXPD-ETX-XXX	Conductivity	Toroidal, Turner (PTSA)	2	4	Included
MVEC5XXPD-EPX-XXX	Conductivity	Toroidal, PYXIS (PTSA)	3	5	Included
MVEC5XXPD-ETX-XXX	Conductivity	Toroidal, Turner (PTSA)	3	5	Included
MVECOXXPD-EPX-XXX	Conductivity & ORP	Toroidal, PYXIS (PTSA)	5	8	Included
MVECOXXPD-ETX-XXX	Conductivity & ORP	Toroidal, Turner (PTSA)	5	8	Included
MVECPXXPD-EPX-XXX	Conductivity & pH	Toroidal, PYXIS (PTSA)	5	8	Included
MVECPXXPD-ETX-XXX	Conductivity & pH	Toroidal, Turner (PTSA)	5	8	Included
MVECPXXPD-EPX-XXX	Conductivity, pH, & ORP	Toroidal, PYXIS (PTSA)	4	8	Included
MVECXXXPD-EXX-CZ759 ¹	Conductivity	Torodial	3	4	Included
MVECXXXPD-XXX-D753 ¹	Conductivity	Torodial	3	4	No
MVECXXXPD-EXX-D753 ¹	Conductivity	Torodial	3	4	Included

Note: See Pulsatron.Com For Drawing and Accessory List
 Pulsatron Pumps Ordered Separately
 Includes 3 Pump Mounts

1. Includes Capacitor Return Motorized Ball Valve

MicroVision

The MicroVision controller series features innovative Toroidal sensor technology. Toroidal sensors are not susceptible to fouling and eliminate the need for routine cleaning and calibration.

The MicroVision is designed specifically for cooling tower applications. The MicroVision is a microprocessor-based conductivity controller with selectable timer and dual biocide control.

The MicroVision controller comes standard with selectable timer, Dry contact/Hall Effect water meter input, dual biocide with pre-bleed, lockout, inhibitor interface, and four programmable start times per biocide, 4-20mA output, dry contact alarm output and 3 drum level inputs.

The base unit comes with the controller, toroidal sensor with signal cable, and a power cord. Pre-wired pigtailed on the relays, and a pre-wired flow switch are available to make installation quick and easy. A 15' signal cable is standard, up to 100' optional, on models without a flow switch, and a 3' cable is standard on models with a flow switch.



MicroVision Selection Guide		MVS	-	-	-	-
PRODUCT DESIGNATOR Position 1, 2 & 3	MVS	= MicroVision Toroidal Conductivity Cooling Tower Controller				
VOLTAGE Position 4	1	= 115/230 volt				
POWER WIRING Position 5	X P	= Liquid Tight connections (required for CE input power cord options below) = Prewired power cord and relays (115 VAC Only)				
PANELS Position 6	X F A B C D	= No Panel and No Flow assembly = Flow assembly, No Panel = Standard Panel & Flow Assembly = Panel & Flow Assy, 1 Pump Mount, strainer, sensor tee, inj tee & rails = Panel & Flow Assy, 2 Pump Mount, strainer, sensor tee, 2 inj tees & rails = Panel & Flow Assy, 3 Pump Mount, strainer, sensor tee, 3 inj tees & rails				
SUFFIX CODE Position 7, 8 & 9	XXX 750 PC025 PC050 PC075 PC100 CZ_XXX	= Suffix Code = 3/4" Back Flow Check Valve = 25 Feet (7.6m) of Probe and Flow Switch wiring = 50 Feet (15.2m) of Probe and Flow Switch wiring = 75 Feet (22.8m) of Probe and Flow Switch wiring = 100 Feet (30.4m) of Probe and Flow Switch wiring = CE Approval w/input power cord and plug (CZXXX=European plug ; CZUKXXX=UK plug ; CZSUIXXX=Swiss plug)				

MicroVision Parts	
Part No.	Description
16-170-07	Probe Tee
16-170-08	Standard Flow Assembly

MicroVision Accessories and Expansions	
Part Number	Description
CK750	Check Valve Kit
PC025	Cable, Cond, Flow - Extension Kit; 25 ft
PC050	Cable, Cond, Flow - Extension Kit; 50 ft
PC075	Cable, Cond, Flow - Extension Kit; 75 ft
PC100	Cable, Cond, Flow - Extension Kit; 100 ft

MicroTrac

The MICROtrac controller series features innovative Toroidal sensor technology. Toroidal sensors are not susceptible to fouling and eliminate the need for routine cleaning and calibration.

The MICROtrac measures the conductivity of the cooling tower recirculating water via a toroidal conductivity sensor. The controller activates two independent relay outputs based on bleed and a selectable feed mode of operation.

The MICROtrac controller comes standard with selectable rising or falling setpoint for open or closed loop control, water meter pulse input, percent timer, % post bleed timer and limit timer.

The base unit comes with the controller, toroidal sensor with signal cable, and a power cord. Optional features such as a sensor mounting tee, pre-wired pigtailed on the relays, and a pre-wired flow switch are available to make installation quick and easy. A 15' signal cable is standard, up to 100' optional, on models without a flow switch, and a 3' cable is standard on models with a flow switch.



MicroTrac Selection Guide		MTC
PRODUCT DESIGNATOR Position 1, 2 & 3	MTC = MicroTrac Toroidal Conductivity Cooling Tower Controller	
VOLTAGE Position 4	1 = 115/230 volt	
RELAY & POWER WIRING Position 5	X = Prewired power cord & Liquid-Tight relay connections L = Liquid-Tight connections only P = Prewired power cord and relays (115 VAC only)	
SENSOR TEE Position 6	X = Standard (no tee) T = Sensor Tee with 3/4" inlet/outlet connections	
FLOW SWITCH Position 7	X = Standard (no flow switch) F = Flow Switch with 15' cable L = Standard Flow Assembly (no panel) A = Standard Panel & Flow Assembly B = Deluxe Panel & Flow Assy, 1 Pump Mount, in/out ball valves, strainer, inj tee & rails	
SUFFIX CODE Position 7, 8 & 9	XXX = Suffix Code 750 = 3/4" Back Flow Check Valve PC025 = 25 Feet (7.6m) of Probe and Flow Switch wiring PC050 = 50 Feet (15.2m) of Probe and Flow Switch wiring PC075 = 75 Feet (22.8m) of Probe and Flow Switch wiring PC100 = 100 Feet (30.4m) of Probe and Flow Switch wiring CZ XXX = CE Approval w/input power cord and plug (CZXXX=European plug ; CZUKXXX=UK plug ; CZSUIXXX=Swiss plug)	

MicroTrac Parts	
Part No.	Description
04-000-21-1	Toroidal sensor
16-100-01	Flow switch
16-170-07	Sensor Tee

Condensate MicroVision

The MicroVision Condensate Controller delivers condensate return monitoring with a reliable and accurate temperature compensated conductivity probe. Worry less about installation with 'plug and play' simplicity with user friendly easy to use programming to save time and money on equipment installation. This latest addition to the MicroVision family of controllers is configured specifically for precise measurement of conductivity in the condensate return and allows for more efficient use of time in inhibiting corrosion.



• CE approved, non-prewired models, or 230 VAC, change the end of the code from "-XXX" to "-CZXXX".

Model Number	Power Wiring	System Options	Sensor	Cable Length
MVBXCHXC025-XXX	Conduit connections	None	Condensate Electrode	25 Feet Max. (Use of the supplied cable is required)
MVBXCHXC025-CZXXX	Conduit connections; 230V	None	Condensate Electrode	25 Feet Max. (Use of the supplied cable is required)
MVBXPHXC025-XXX	Prewired with pigtails	None	Condensate Electrode	25 Feet Max. (Use of the supplied cable is required)

MicroVision Condensate Parts	
Part Number	Description
CCBS-C-25	MicroVision Condensate Probe Assembly with 25 ft Cable
13-511-07-1	25 feet cable must be used with MicroVision Condensate Controller
03-135-02	Tee, Iron Black, 0.75" NPT

Micro Vision Timer

The MicroVision -Timer is a microprocessor-based selectable timer controller. Designed specifically for timer based control applications, MicroVision Timer comes with the features and functions you need for accurate timer based control.

The MicroVision Timer comes standard with the five programmable digital inputs that can be programmed as Drum Level inputs, water meter inputs or a Hall effect input and five programmable timers for 28 day, pulse, percent, cycle and system alarm.

The base unit comes with the controller and a power cord. Optional features such as a pre-wired flow switch are available to make installation quick and easy. A 15' signal cable is standard, up to 100' optional, on models without a flow switch, and a 3' cable is standard on models with a flow switch.



MicroVision Timer Selection Guide		MVT	-	-	-	-	-
PRODUCT DESIGNATOR Position 1, 2 & 3	MVT	= MicroVision Timer Controller					
VOLTAGE Position 4	1	= 115 volt					
POWER WIRING Position 5	X P	= Liquid Tite connections only (required for 230VAC) = Prewired w/Power Cord and Pigtails for 115 VAC					
PANELS Position 6	X F A B C D	= No Panel and No Flow assembly = Flow assembly, No Panel = Standard Panel & Flow Assembly = Panel & Flow Assy, 1 Pump Mount, strainer, inj tee & rails = Panel & Flow Assy, 2 Pump Mount, strainer, 2 inj tees & rails = Panel & Flow Assy, 3 Pump Mount, strainer, 3 inj tees & rails					
SUFFIX CODE Position 7 thru 13	XXX CZ_XXX	= Suffix Code = CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)					
A completed model should look like "MVT1PB-XXX"							

Flow Controller

The versatile Flow Controller may be used to establish flow/no-flow control of metering pumps in various applications. Each unit comes prewired with an eight-foot, three-wire power cord for easy installation. A test switch is also provided for manual circuit tests.



Pump Part Discount Applies on Flow Controllers

Flow Controllers	
Model No.	Description
FC2000	Flow Controller - Standard flow controller has 3/4" PVC threaded connections with 3/4" PVC slip adaptors to use if needed. 1 GPM minimum flow required for activation
FC2000C	Flow Controller - Standard flow controller w/ 1 PVC slip connectors; 1 GPM min. flow required for activation.
Available options for FC2000 & FC2000C:	
Receptacle functions (Standard--both on with flow)	
1	Both on with no flow
2	One on with flow, other on no flow
3	One on with flow, other service
4	One on with no flow, other service

Replacement Flow Assemblies	
Part No.	Description
16-977-79	3/4" (FC2000)
16-977-71	1" (FC2000C)

Bowl Strainer - Cooling Tower Applications

The polypropylene bowl strainers ensure the controller's sensors are protected from debris in the sample stream piping. Rated 100 psi at 70°F.



Bowl Strainers	
Part Number	Description
12-069-62	3/4" Bowl Strainer (50 MESH)
12-069-64	3/4" Bowl Strainer (80 MESH)
12-069-66	3/4" Bowl Strainer (100 MESH)

Conductivity Testers



Hand Held Conductivity Testers	
Model No.	Description
HJ6BC	0-100, 0-1000, 0-10,000 $\mu\text{S}/\text{cm}$
HJ7B	0-50, 0-500, 0-5,000 $\mu\text{S}/\text{cm}$

Pressure Gauge

Liquid Filled Pressure Gauges in Brass or Stainless Steel 1/4" Bottom or Back Connection.



Pump Part Discount Applies on Pressure Gauges

Pressure Gauge	
Bottom Connection	
Part Number	Description
12-130-04	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-05	Face 2", 100 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-06	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-07	Face 2", 200 PSI, Liquid Fill, 1/4" SS Bottom Connection
12-130-08	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Bottom Connection
12-130-09	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Bottom Connection
Back Connection	
Part Number	Description
12-130-10	Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-11	Face 2", 100 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-12	Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-13	Face 2", 200 PSI, Liquid Fill, 1/4" SS Back Connection
12-130-14	Blk Steel Face 2", 100 PSI, Liquid Fill, 1/4" Brass Back Connection
12-130-15	Blk Steel Face 2", 200 PSI, Liquid Fill, 1/4" Brass Back Connection

Digital Glycol Feeders

Pulsafeeder's Digital Glycol Feeder provides a consistent operating pressure in closed loop systems. This allows a controlled percentage of glycol solution to be fed from the 55 gallon tank. The Digital Glycol Feeder is available in two models; the DGF1 for single loop and the DGF2 for dual loop systems. The control unit utilizes an 8-bit microcontroller for precise feed system control. The NEMA4X enclosure can be wired conduit or prewire for easy startup. The preplumbed assembly includes a pressure gauge, pressure switch, and pressure relief valve to prevent excessive pressure build up. A low liquid level switch with optional audible alarm prevents the gear pump from operating when the solution is low.



DIGITAL GLYCOL FEEDER Selection Guide		DGF							
CLOSED LOOPS Position 4	1 = Single Loop 2 = Dual Loop								
CONDUIT / PREWIRE Position 5	A = Conduit B = Prewire								
AUDIBLE ALARM Position 6	A = without Audible Alarm B = with Audible Alarm								
ALARM OUTPUT OPTION Position 7	X = None A = Dry Contact, Single B = Dry Contact, Dual C = AC Output, Single D = AC Output, Dual E = Dry Contact, Single & AC Output, Single								
PRESSURE SWITCH OPTION Position 8	A = Standard pressure switch, 30 to 50 psi (adjustable to 80 psi) B = Low pressure switch, 5 to 10 psi (adjustable to 35 psi) C = One standard and one low pressure switch (DGF2 only)								
PUMP AND VOLTAGE RATING Position 9	A = 115VAC no pump C = 115VAC 60Hz 1.50GPM @ 100psi E = 115VAC 60Hz 3.75GPM @ 100 psi								
AGENCY APPROVAL Position 10	X = None								
PANEL ASSEMBLY Position 11	B = Assembled (must ship via freight)								

Controller Discount Applies on Digital Glycol Feeder

Accessories

Digital Glycol Feeder for Closed Loop Systems

Replacement Pumps	
Part No.	Description
18-600-35	115V 60Hz 1.50GPM @ 100PSI
18-600-42	115V 60Hz 3.75GPM @ 100PSI
Replacement Wand	
16-171-81-9	Wand, level, adjustable up to 34
Cables	
16-171-81-3	Cable, extension, 10' with connectors
Replacement Fuse	
05-052-18	Fuse, 16A, 250V, 5X20MM
Pressure Switches	
12-140-00	Standard pressure switch 30 - 50psi (adjustable to 80 psi)
12-140-01	Low pressure switch to 5 - 10psi (adjustable to 35 psi)

Corrosion Coupon Racks

Our Corrosion Coupon Racks are hydrostatically tested for maximum system performance exceeding industry standards. These simple and reliable coupon test stations are typically installed on the side stream of re-circulating systems to allow for controlled testing of coupon samples. Samples are periodically removed and examined by a laboratory in order to calculate corrosion rates and other effects such as pitting and deposition.



Corrosion Coupon Racks - Includes PVC coupon holder, nylon screw & nut, PVC inlet ball vlv, 0.75 in (19mm) piping, Sch. 80 PVC				
Model Number	Stations	Mount	Piping	Description
CCR2	2 Station	.50" HDPE	3/4" PVC	Standard
CCR20DF5	2 Station	Unistrut	3/4" black iron	Flow control valve 5 GPM
CCR20DX7X8CF3	2 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 3 GPM
CCR20DX7X8CF5	2 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 5 GPM
CCR20DXSX7	2 Station	Unistrut	3/4" black iron w/ SS Holder rod	PVC outlet ball valve, 3/4" brass gate valve 250 psi
CCR20X1X4X7	2 Station	.25" HDPE	3/4" PVC	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi
CCR20X1X7F5	2 Station	.25" HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 250 psi; Flow control valve 5 GPM
CCR20X1X4X7X8DX9Z4	2 Station	Unistrut	3/4" black iron	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi; 3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70°F; Clear PVC pipe sections; Sample/Drain port
CCR20X4	2 Station	Unistrut	3/4" black iron	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C).
CCR2D	2 Station	Unistrut	3/4" black iron	Standard
CCR3	3 Station	.50" HDPE	3/4" PVC	Standard
CCR4	4 Station	.50" HDPE	3/4" PVC	Standard
CCR40DX7X8CF5	4 Station	Unistrut	3/4" black iron	PVC outlet ball valve, 3/4" brass gate valve 250 psi; Y Strainer; Flow control valve 5 GPM
CCR40DXSX7	4 Station	Unistrut	3/4" black iron w/ SS Holder rod	PVC outlet ball valve, 3/4" brass gate valve 250 psi
CCR40X1X4X7	4 Station	.25" HDPE	3/4" PVC	Quick release coupon holders; 3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C); PVC outlet ball valve; 3/4" brass gate valve 250 psi
CCR40X1X7F5	4 Station	.25" HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 250 psi; Flow control valve 5 GPM
CCR4AX1X6X7	4 Station	.50" HDPE	1" PVC	Quick release coupon holders; 1" cold water flow meter, Max. 100 psi (7 bar) @ 110°F (43°C); PVC outlet ball valve; 3/4" brass gate valve 300 psi
CCR4D	4 Station	.50" HDPE	3/4" black iron	Standard
CCR4DX4	4 Station	.50" HDPE	3/4" black iron	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C)
CCR4EX71F5	4 Station	.50" HDPE	1" PVC clear	1" PVC outlet ball valve; 3/4" brass gate valve 300 psi; Flow control valve 5 GPM
CCR4F5	4 Station	.50" HDPE	3/4" PVC	Flow control valve 5 GPM
CCR4X1X7X8AF5	4 Station	.50" HDPE	3/4" PVC	Quick release coupon holders; PVC outlet ball valve; 3/4" brass gate valve 300 psi; Y Strainer; Flow control valve 5 GPM

Corrosion Rack Accessories



Coupon Rack Replacement Parts

Part Number	Description
16-756-51-1	Quick Release coupon holder with hardware
16-756-50	PVC and CPVC holder with hardware
16-756-42	Steel on black iron holder with hardware
33-022-16	3/4" hot/cold water flow meter

Coupons for Corrosion Coupon Racks & Deposit Monitors

Part Number	Description
03-220-10	Mild Steel
03-220-00	Copper
03-220-60	303 Stainless Steel
03-220-70	304 Stainless Steel
03-220-20	316 Stainless Steel
03-220-50	Nickel
03-221-30	Brass
03-221-40	Bronze
03-221-50	Aluminum

Water Meters - Contacting Head Water Meters

Multi-Jet Meters:

3/4 in. to 2 in., are designed for use in conjunction with a pulse timer to proportionally control pumps, valves etc. Typical applications include water treatment in cooling tower and boiler systems, water chlorination, car washes and other industrial processes which require proportional control. The Multi-Jet chamber of the water meter assures accuracy over a wide range of flows with low head loss. To prevent wear and maintain accuracy the load is equally distributed on the impeller.

Turbine Meters:

3 inch to 6 inch operate continuously with exceptional accuracy. Each meter incorporates a highly efficient horizontal turbine that essentially floats on the water. The turbine is attached to a Tungsten steel shaft riding in Jewel bearings. The rotation of the turbine is transmitted through a magnetic drive to a sealed odometer register.



Lead Free Brass Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR100-G	.25 - 20 GPM	.75" NPT	Totalizer
MTR101-G	.25 - 20 GPM	.75" NPT	0.1 GPC
MTR102-G	.25 - 20 GPM	.75" NPT	0.25 GPC
MTR103-G	.25 - 20 GPM	.75" NPT	0.5 GPC
MTR104-G	.25 - 20 GPM	.75" NPT	1 GPC
MTR107-G	.25 - 20 GPM	.75" NPT	10 GPC
MTR300-G	.75 - 50 GPM	1" NPT	Totalizer
MTR301-G	.75 - 50 GPM	1" NPT	0.1 GPC
MTR302-G	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304-G	.75 - 50 GPM	1" NPT	1 GPC
MTR307-G	.75 - 50 GPM	1" NPT	10 GPC
MTR310-G	.75 - 50 GPM	1" NPT	100 GPC
MTR400-G	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR402-G	1.5 - 100 GPM	1.5" NPT	0.25 GPC
MTR404-G	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407-G	1.5 - 100 GPM	1.5" NPT	10 GPC
MTR410-G	1.5 - 100 GPM	1.5" NPT	100 GPC
MTR504-G	2 - 160 GPM	2" NPT	1 GPC
MTR507-G	2 - 160 GPM	2" NPT	10 GPC
MTR510-G	2 - 160 GPM	2" NPT	100 GPC

3/4" - 2" Meters have male Epoxy Coated NPT Bronze Bodies with unions,
Rated for 150 PSI max, 105 F max.
NSF/ANSI 61 for these models only

Brass Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR200	.5 - 20 GPM	.75" NPT	Totalizer
MTR201	.5 - 20 GPM	.75" NPT	0.1 GPC
MTR202	.5 - 20 GPM	.75" NPT	0.25 GPC
MTR203	.5 - 20 GPM	.75" NPT	0.50 GPC
MTR204	.5 - 20 GPM	.75" NPT	1 GPC
MTR207	.5 - 20 GPM	.75" NPT	10 GPC
MTR210	.5 - 20 GPM	.75" NPT	100 GPC
MTR300	.75 - 50 GPM	1" NPT	Totalizer
MTR302	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304	.75 - 50 GPM	1" NPT	1 GPC
MTR307	.75 - 50 GPM	1" NPT	10 GPC
MTR310	.75 - 50 GPM	1" NPT	100 GPC
MTR400	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR404	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407	1.5 - 100 GPM	1.5" NPT	10 GPC
MTR410	1.5 - 100 GPM	1.5" NPT	100 GPC
MTR504	2 - 160 GPM	2" NPT	1 GPC
MTR507	2 - 160 GPM	2" NPT	10 GPC
MTR510	2 - 160 GPM	2" NPT	100 GPC

3/4" - 2" Meters have male Epoxy Coated NPT Bronze Bodies with unions, rated for 150 PSI max, 105 F max.

Plastic Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR100-P	.25 - 20 GPM	.75" NPT	Totalizer
MTR101-P	.25 - 20 GPM	.75" NPT	0.1 GPC
MTR102-P	.25 - 20 GPM	.75" NPT	0.25 GPC
MTR104-P	.25 - 20 GPM	.75" NPT	1 GPC
MTR104-P-L	.25 - 20 GPM	.75" NPT	1 LPC
MTR107-P	.25 - 20 GPM	.75" NPT	10 GPC
MTR300-P	.75 - 50 GPM	1" NPT	Totalizer
MTR301-P	.75 - 50 GPM	1" NPT	0.1 GPC
MTR302-P	.75 - 50 GPM	1" NPT	0.25 GPC
MTR304-P	.75 - 50 GPM	1" NPT	1 GPC
MTR304-P-L	.75 - 50 GPM	1" NPT	1 LPC
MTR307-P	.75 - 50 GPM	1" NPT	10 GPC
MTR400-P	1.5 - 100 GPM	1.5" NPT	Totalizer
MTR402-P	1.5 - 100 GPM	1.5" NPT	0.25 GPC
MTR404-P	1.5 - 100 GPM	1.5" NPT	1 GPC
MTR407-P	1.5 - 100 GPM	1.5" NPT	10 GPC

Rated for 100 PSI max, 120 F max.
NSF/ANSI 61 for these models only

Turbine Contacting Water Meters - Cold Water

Part Number	Rating	Size	Gallons Per Contact (GPC)
MTR610	440 GPM	3" Flanged	100 GPC
MTR613	440 GPM	3" Flanged	1,000 GPC
MTR710	660 GPM	4" Flanged	100 GPC
MTR810	1650 GPM	6" Flanged	100 GPC
MTR813	1650 GPM	6" Flanged	1,000 GPC

3", 4" & 6" Meters have Epoxy Coated Ductile Iron Flanged Bodies, rated for 200 PSI max, 105 F max.

Water Meters get a pump accessory discount

Solenoid Valves - Cooling Tower Applications



Standard Solenoid Valve



High Temp Solenoid Valve

Standard Solenoid Valves - 2 Way Normally Closed				
Part Number	Material	MOPD- Max. Operating Press. Differential	Voltage	Mfr
12-072-62	1/4" S.S. Body with TFE Seat	150 psi MOPD at 160°F	120/60, 110/50V	ASCO
12-072-53	1/2" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60, 110/50V	ASCO
12-072-54	3/4" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60, 110/50V	ASCO
12-072-55	1" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60V	ASCO
12-072-56	1" NPT Brass Body	5 psi min - 150 psi at 180°F	120/60, 110/50V	ASCO
12-072-57	1 1/2" NPT Brass Body	0 psi min - 150 psi; 180°F	120/60V	ASCO
12-072-58	1 1/2" NPT Brass Body	5 psi min - 150 psi at 180°F	120/60V	ASCO
12-072-59	2" NPT Brass Body	5 psi min - 150 psi; 180°F	120/60V	ASCO
High Temp Solenoid Valves - 2 Way Normally Closed				
12-072-60	1/2" NPT Brass Body	1 psi min - 125 psi	120/60V	ASCO
12-072-61	3/4" NPT Brass Body	2 psi min - 125 psi at 353°F	120/60, 110/50V	ASCO
12-048-00	1/2" Brass Body, PTFE	0 psi differential, 100 psi @ 356°F	115 VAC	
12-056-00	3/4" Brass Body, PTFE	0 psi differential, 100 psi @ 356°F	115 VAC	

Motorized Ball Valves



EC Series Solenoid Valve

EC Series - Motorized Valves	
Part Number	Description
Motorized Valves for Cooling Tower Applications	
Low differential pressure applications. Brass bodies. Spring return.	
12-045-00	1/2" NPT (25 psi maximum)
12-054-10	3/4" NPT (25 psi maximum)
12-057-00	1" NPT (15 psi maximum)

Motorized Capacitor Return Ball Valves

A capacitor return motorized ball valve offers a reliable alternative to a solenoid valve with a full bore design for bleed-off of cooling tower water. The motorized ball valve offers a manual override feature and low working current as well as a long service life (70,000 – 100,000 cycles).



Motorized Capacitor Return Ball Valves	
Part Number	Description
12-050-00	Capacitor Return MBV, 1/2", 304SS
12-050-00-B	Capacitor Return MBV, 1/2", 304SS W/ Terminal Block
12-050-00-J	Capacitor Return MBV W/ Power Cord, 1/2"
12-050-01	Capacitor Return MBV, 3/4", 304SS
12-050-01-B	Capacitor Return MBV, 3/4", 304SS W/ Terminal Block
12-050-01-J	Capacitor Return MBV W/ Power Cord, 3/4"
12-050-02	Capacitor Return MBV, 1", 304SS
12-050-02-B	Capacitor Return MBV, 1", 304SS W/ Terminal Block
12-050-02-J	Capacitor Return MBV W/ Power Cord, 1"

Motorized Ball Valves & Valve Packages - Boiler Applications

Materials of construction: Solenoid Valves are bronze body with stainless steel pilot and valves; Motorized Ball Valves are carbon steel body with 316 stainless steel ball and stem; Throttling Valves are carbon steel body and valve; and Orifice Unions are carbon steel union with stainless steel plates.



Throttling Valve

Valve Packages	
Timed Sample Systems	
Part Number	Description
16-896-00	Up to 100 psi Package includes 1/2" solenoid valve (12-048-00) and 1" orifice union with 4 orifice plates (12-012-00 and 12-013-50).
16-896-04	Up to 300 psi Package includes 1/2" motorized ball valve with heavy duty 90 degree actuator (16-892-00) and 1/2" flow throttling valve (12-046-01).
16-896-08	Up to 450 psi Package includes 1/2" motorized ball valve with 360 degree actuator (16-892-02) and 1" orifice union with 4 orifice plates (12-012-00 and 12-013-50).
Valve Packages	
Continuous Sample Systems	
Part Number	Description
16-896-02	Up to 100 psi Package includes 3/4" solenoid valve (12-056-00) and two 1" orifice unions with 4 orifice plates each (12-012-00 and 12-013-50).
16-896-06	Up to 300 psi Package includes 3/4" motorized ball valve with 90 degree actuator (16-892-01), 3/4" flow throttling valve (12-055-01), and 1/2" flow throttling valve (12-046-01).
16-896-10	Up to 425 psi Package includes 3/4" motorized ball valve with 360 degree actuator (16-892-04) and two 1" orifice unions with 4 orifice plates each (12-012-00 and 12-013-50).
Available option:	
-2	230 VAC service

Note: Materials of construction: Solenoid Valves are bronze body with stainless steel pilot and valves; Motorized Ball Valves are carbon steel body with 316 stainless steel ball and stem; Throttling Valves are carbon steel body and valve; and Orifice Unions are carbon steel union with stainless steel plates.



Motorized Ball Valve

Motorized Ball Valves	
Part Number	Description
16-892-00	1/2" motorized ball valve (10-75 Worcester Actuator)
16-892-01	3/4" motorized ball valve (10-75 Worcester Actuator)
16-892-02	1/2" motorized ball valve (10-36 Worcester Actuator)
16-892-04	3/4" motorized ball valve (10-36 Worcester Actuator)
Available option:	
-2	230 VAC service
Part Number	Description
12-040-00	Worcester 10-75 actuator only
12-040-10	Worcester 10-36 actuator only
Motorized Ball Valve Parts	
Part Number	Description
12-043-00	Worcester 1/2" steam rated ball valve only
12-051-00	Worcester 3/4" steam rated ball valve only
12-049-00	Mounting kit for 12-051-00 & 12-040-00

Flow Control Valves - Boiler Applications

Flow control valves maintain sufficient back pressure in boiler blowdown lines in order to prevent flashing and to ensure adequate blowdown rates. The orifice union includes four plates, 1/16", 1/8", 1/4" and a 5/16". Flow control valves include an indexed position indicator



Flow Control Valves



Orifice Union



Orifice Plates

Flow Control Valves	
Part Number	Description
12-075-01	3/8" valve (300 psi maximum)
12-046-01	1/2" valve (300 psi maximum)
12-055-01	3/4" valve (300 psi maximum)

Orifice Unions & Orifice Plates	
Part Number	Description
12-012-00-1	1" orifice union with set of (4) orifice plates
12-013-50	Set of four orifice plates

Sample Cooler

Pulsafeeder's Sample Cooler part number 12-066-00 is a safe method of withdrawing water from boilers, steam lines or tanks containing chemicals and for cooling the withdrawn liquid for subsequent chemical analysis.



Sample Coolers	
Part Number	Description
12-066-00	Sample Cooler

Bleed-Off Piping Assembly - Cooling Tower Applications

The pre-plumbed bleed-off assemblies make installation of a cooling tower bleed valve easy. The assemblies include a solenoid valve, Y strainer and a brass shutoff valve.



Bleed-off Piping Assembly	
Part Number	Description
Includes SVC solenoid valve, steel Y-strainer, and brass shutoff valve.	
16-900-18	3/4"
16-900-12	1"

Sample Steam Parts

Sample Stream Parts	
Part Number	Description
12-069-00	3/4" Clear PVC Y-strainer
12-070-00	Replacement mesh for 12-069-00
12-072-00	3/4" PVC ball valve
16-810-00	2 stage injection manifold
16-810-03	3 stage injection manifold
16-810-08	5 stage injection manifold
04-300-08	Sample valve assembly

NOTES

Policies and Procedures

1. Manufacturer's Equipment Warranty

- a. Pulsafeeder warrants all pumps and controllers of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for 24 months from the date of shipment. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.
- b. The manufacturer disclaims all liability for damage to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any other unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.
- c. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.
- d. MicroVision EX when purchased as a spare a part is warranted for 24 months.

2. Pulsafeeder's Parts and Accessory Warranty

- a. Pulsafeeder, Inc. warrants parts and accessories provided to be free of defects in material or workmanship. Unless otherwise noted below, liability under this policy extends for 90 days from date of shipment from the factory when sold as service parts. (Replaceable elastomeric parts (PTFE) are expendable and are not covered by any warranty either expressed or implied.)
- b. This policy is extended to a full 12 months from the date of installation or 18 months from shipment from the factory whichever comes first on the following accessories;

Digital Glycol Feeders	Pre-Engineered Systems	Corrosion Coupon Racks
Analog Timers	Water Meters	Flow Controllers
- c. Toroidal probes are warranted for 24 months from date of shipment from the factory when purchased as a spare.. All other electrodes/probes and sensors are considered maintenance items and such are warranted for six (6) months from the date of shipment when purchased in conjunction with the controller. Any electrodes/probes other than toroidal and sensors purchased as spare parts are warranted for 90 days from date of shipment.
- d. The manufacturer's liability is limited to repair or replacement of any failed equipment or part which is proven defective in material or workmanship upon manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.
- e. The manufacturer disclaims all liability for damages to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through the use of its products.
- f. The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

3. Process for All Returned Goods (Warranty Items)

- a. Please contact our Technical Service Department to request a RMA (Return Material Authorization) number prior to returning any goods. The following information will be required:
 - Billing and ship-to address
 - Model number and serial number
 - Contact name and phone number
 - Reason for return
 - Purchase order (where applicable)
 - A packing slip will be provided to the shipper and MUST accompany the product being returned. Packages received without our proper packing list will be refused by the receiver.
- b. All material must be returned freight prepaid.
- c. All material must be properly packaged to prevent damage in shipment.
- d. All products used in a chemical application MUST accompany an MSDS
- e. All products MUST be wiped and flushed clean of any and all chemicals, solvents or buffers and be warranted to be safe for handling. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgment will be refused by our receiver.
- f. All warranty repairs will follow the 2 year warranty policy and will refer to the original purchase date.

4. Credit for Return of New, Unused Equipment

- a. RMA for returning product for credit is effective for 90 days from the date of issue. After 90 days if the product has not been returned to Pulsafeeder the RMA number will be canceled, and a new request must be made by the customer to continue with the return procedure.
- b. No equipment will be accepted beyond six months after date of shipment from factory for credit.
- c. Only new, unused and undamaged standard equipment will be accepted for return to stock.
- d. All credits are based on evaluation and acceptance of material as new and unused by Pulsafeeder. You will be requested to acknowledge the condition of the product being returned on our packing list. Any product received that is deemed to be unsafe for handling or without this acknowledgment will be refused by our receiver.
- e. A restocking fee of 25% will apply to returned goods. When a PO is provided for a replacement item at the time of the return request the restocking fee will be 15%. Note: any product mounted on a panel or skid will be charged a 50% re-stocking fee.
- f. A request for a Returned Material Authorization (RMA) number must be made prior to returning product to Pulsafeeder.
- g. All equipment shall be returned with the RMA Packing List form attached to the outside of the box.
- h. If any chemical, solvent or buffer has been introduced into the product it must be wiped and flushed clean of any and all substances prior to returning to Pulsafeeder.
- i. All material shall be returned freight prepaid.
- j. Private label products or Engineered Panel Mount Systems and Pre-Engineered System are not returnable.

5. Pricing Errors

- a. Pulsafeeder does their very best to avoid errors in billing. You will receive a confirmation of your order within 24 hours of order entry. If upon review the customer feels there is a discrepancy, they should contact Pulsafeeder Customer Service as soon as possible to resolve.
- b. Should an invoice be received that the customer believes to have incorrect pricing, they should notify Pulsafeeder Customer Service to investigate.

6. Missing Items

- a. If a product is received by the customer with an item missing the customer must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. A replacement item will be sent at no charge as quickly as possible.
- b. If a shipment is received by the customer with a line item missing they must notify Pulsafeeder Customer Service within 7 days of receipt of the product by the end user. If the customer had been billed for that item, a credit will be issued against the original Sales Order and a new Sales Order will be created for the replacement product.

7. Damaged Items

- a. Should the customer receive an order that was damaged in transit, whoever paid the freight charges is responsible for filing the freight damage claim.
- b. Should the customer receive a product with damaged components due to improper packaging they should notify Pulsafeeder Customer Service within 7 days of receipt of product by end user. A replacement item will be sent at no charge as quickly as possible.

8. Technical Support Services Available

- a. Pulsafeeder's Technical Sales Support team is available to provide all your sales and support needs. The principle mission of this group is to sell and support our customer base in a timely and effective manner. This includes the ability to provide in-field service training, assistance in start-up of our products and perform field repair of goods when required.

Terms and Conditions

1. AGREEMENT. The contract of sale resulting from Seller's documentation together with these terms and conditions ("Contract") constitutes the entire agreement between the parties hereto, except as modified in writing signed by both the Seller and Purchaser. The Seller is Pulsafeeder, Inc. and the Purchaser is identified in the Contract. Any terms in a purchase order, irrespective of their materiality, which are either different from or additional to Seller's conditions of sale, are objected to and are excluded unless the Seller expressly agrees in writing to such terms. Execution of such forms by Seller to accommodate Purchaser's procurement or accounting procedures or to evidence agreed upon change orders shall not be construed as assent to Purchaser's terms. Acceptance of the goods shipped shall constitute assent to Seller's conditions of sale. This Contract shall be binding upon Purchaser and Seller, and on their successors and assigns.

2. PROPOSAL OR QUOTATION. A proposal shall not become binding upon Seller until it has been executed and returned by Purchaser. An oral quotation shall not be considered an offer: only a written confirmation thereof incorporating Seller's terms and conditions shall constitute an offer. All written quotations are valid for 30 days unless stated otherwise on the written quotation provided by Seller to Purchaser.

3. ORDER PLACEMENT. All orders shall be deemed accepted upon written acknowledgment from Seller and shall be subject to Pulsafeeder's terms and conditions in effect on the date the order is accepted. No additional different terms and conditions referred to or contained in any request for proposal, purchase order or other document from Purchaser shall apply. Any order cancellation or change is subject to a \$50.00 cancellation / change fee.

The minimum order amount is US \$30.00 based on Seller's list prices in effect at the time the order is received.

Orders requiring expedited shipping (sooner than the standard lead times) will be subject to a \$50.00 expedite charge.

Documents which require local Chamber of Commerce stamp and certification are subject to a \$50.00 per document fee.

Letters of Credit and Sight Draft's are subject to a \$1,000.00 fee.

All Credit card orders will be charged a \$50.00 transaction fee.

All orders must be submitted with correct pricing and shipping information. Orders submitted without correct pricing and shipping information may be rejected or delayed.

4. CREDIT. Credit terms of payment must have the approval of Seller's Credit Department and must be specified in writing on Seller's invoice or in the Contract. If Purchaser's credit is found by Seller to be unsatisfactory, Seller may rescind or terminate this Contract. If at any time during the term of this Contract Purchaser's financial responsibility becomes impaired or unsatisfactory to Seller, Seller reserves the right to stop shipment on notification to Purchaser, project owner and surety with a demand for payment in advance or at time of delivery for future deliveries or to require other security satisfactory to Seller and in the absence thereof, to cancel the unfilled portion of the Contract. Seller will notify Purchaser promptly of its decision to stop shipments and give an advance notice to the extent this is possible. In the absence of credit terms, sales are for cash.

5. PAYMENT. Specific terms of payment for this order shall be set forth on the reverse side of this Contract or identified and appended hereto. Purchaser agrees to make payment at Seller's location specified in this Contract in lawful money of the United States. Purchaser further agrees to make all payments when due to Seller in accordance with the agreed terms of payment in this Contract without reference to Purchaser's agreement with or payments by the owner and with no right of retention.

6. INTEREST AND COSTS. Purchaser agrees to pay interest at 1.5% per month (to the extent permitted by law) on all delinquent balances if and when assessed by Seller, and any attorney's fees or court costs arising out of and made necessary in collection of its obligation to Seller created by this Contract.

7. TAXES. Any federal, state or local tax assessment, fee, duty or charge hereafter imposed on or measured by the products purchased hereunder shall be for Purchaser's account unless Purchaser furnishes Seller an acceptable exemption certificate from such tax, fee, duty or charge prior to shipment.

8. FORCE MAJEURE. Seller shall make delivery in accordance with the terms of this Contract or within a reasonable time in the absence of any commitment, but Seller shall not be liable for delays or defaults in delivery caused by floods, fires, storms, or other acts of God, by war or act of public enemy (or civil disturbance), strikes, lock outs, shortages of labor or raw materials and supplies (including fuel) or production facilities, transportation service or equipment shortages or failures, action of any governmental authority or other conditions beyond Seller's reasonable control.

9. CANCELLATION. If Purchaser desires to cancel or change any portion of this Contract, Purchaser must make such request in writing to Seller. Seller may, in its sole discretion, accept or reject any such request. If accepted, the Purchaser nonetheless must take delivery and make payment to Seller for all material manufactured and in process of manufacture at time of notice, and all special materials ordered at time of notice and for which Seller must take delivery, unless otherwise agreed by Seller in writing. All such materials must be removed from Seller's premises within 30 days after payment and payment will be due at time of notice. Seller also reserves the right to make a cancellation charge in the event of cancellation by the Purchaser of an order placed in Seller's shipping schedule and acknowledged by Seller. Any order cancellation is subject to a \$50.00 cancellation fee.

10. INSPECTION AND TESTING. Seller's standard specifications and tests apply to all orders. All charges for inspections or tests not regularly furnished are for Purchaser's account and subject to prior negotiation. All inspections shall be conducted at Seller's plant, and failure of Purchaser to avail himself of inspection privileges shall be deemed a waiver of such privileges.

11. PRICES. Prices are subject to change without notice. Orders based on published prices and accepted for scheduled shipment will be invoiced at Seller's applicable price in effect on the scheduled date of shipment, unless otherwise specifically noted on the order acknowledgment. All prices will be in accordance with applicable government regulations. Orders specifying palletizing or special packaging will involve special charges.

12. DELAYS. All orders are accepted subject to Seller's ability to make delivery at the time and in the quantities specified, and Seller shall not be liable for damages for failure to make partial or complete shipment or for any delay in making shipments. Purchaser shall be liable for any added expenses incurred by Seller because of Purchaser's delay in furnishing requested information to Seller, delay resulting from order changes by Purchaser, or delay in unloading shipments at delivery point.

13 . SHIPMENT. Seller will select method of shipment and routing when transportation charges are for account of Seller. When shipping instructions are specified by the Purchaser, all costs will be for the account of the Purchaser. The foregoing includes, but is not limited to, carriers charges for notification prior to delivery, demurrage, delay in unloading, diversion, or reassignment. All shipments are Free Carrier (FCA) or EX Works (EXW) (Incoterms 2010) Seller's dock in Punta Gorda, Florida. Seller has the right to ship any order when it is complete or partially complete unless the order is marked do not ship before the request date.

All customer arranged freight (will advise) the Customer has 48 hours after Seller has advised them that the shipment is complete and ready for shipment. If the shipment has not left Seller within such 48 hour period the customer will be charged 1% of the shipment invoice value for each 24 hour period that the shipment remains at the Seller facility. Seller may also place the shipment in a public storage at Customer's expense and without liability to Seller.

Orders requiring expedited production (24-hour turnaround) and to be ready for shipment (Not including shipping) will be subject to a \$50 expedite charge.

Unless the order clearly requests expedited shipping, the order will be treated as a routine order. When expedited shipping is requested a designated carrier must be selected.

Pulsafeeder's hours of operations are 8am to 5pm eastern Monday – Friday. Orders that need to be ready for shipment 24 hours from receipt of order will be received during Pulsafeeder's hours of operation. Same day and next working day shipping is generally available for larger orders, please verify with customer service. Pulsafeeder shall have no liability if it is unable to provide expedited shipping of an order.

14 . TITLE. Title to products transfers to Purchaser upon Seller's delivery of the goods to the carrier for shipment. Purchaser is then responsible for proper protection of product, placement, compliance with all regulations and ordinances, and will indemnify Seller against all claims for personal injuries or property damage arising from the storage, use or handling of such products.

15 . IN TRANSIT CLAIMS. Claims for damage or shortage in transit must be made against the carrier by the owner of the shipment according to the FCA or EXW shipping terms as applicable. Purchaser has the responsibility to inspect shipments before or during unloading to identify any such damage or shortage and see that appropriate notation is made on the delivery tickets or an inspection report furnished by the local agent of the carrier in order to support a claim.

16 . CLAIMS. Notice of Claims against Seller hereunder for any reason, must be made to Seller in writing promptly after discovery and within any applicable warranty period. Failure to give such notice to Seller shall constitute a waiver by Purchaser of any right later to assert such a claim.

17 . RETURNS. Returned goods shall be accepted for credit only if in salable condition and only with evidence of Seller's prior written consent. Seller will assess charges for freight both ways and any costs necessary to restore such goods to the regular plant inventory . The amount of credit given will depend further up on the degree of saleability of products accepted in opinion of Seller.

18 . PATENTS. Seller agrees to defend, and to protect Purchaser against loss or damage arising out of any legal action for patent infringement in connection with the manufacture of its products sold to Purchaser, provided Seller is notified promptly of any such action with complete information and is given an opportunity to defend.

19 . WARRANTY; LIMITATION OF LIABILITY. Seller warrants title to each individual product sold under this Contract and further warrants for a period of twenty four (24) months from ship date, but only to the extent and limit of the purchase price paid for such individual product, that such product conforms to the specifications set forth in the Contract and is free from defects in material and workmanship under normal service and use for which it was designed. Seller's sole obligation and Purchaser's exclusive remedy under this warranty shall be limited to one of the following, as selected by Seller: delivering to Purchaser a replacement for any product or part thereof determined by Seller to be defective, repairing such product or part, or refunding the purchase price (or an equitable portion thereof) paid for such product or part by Purchaser. SELLER MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY, AND NO OTHER WARRANTY, WHETHER EXPRESS OR ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE IMPLIED SHALL EXIST IN CONNECTION WITH SELLER'S PRODUCTS OR ANY SALE OR USE THERE OF. Purchaser must notify Seller promptly and within the warranty period of any claim under this warranty. Seller's warranty extends only to the first purchaser of a product from Seller or Seller's authorized distributor. All goods not manufactured by Seller are warranted only to the extent of the warranties of the original manufacturer. Seller disclaims any liability arising from tort, including strict liability, and Seller further disclaims any liability (whether arising under this or any other provision of this Contract or otherwise) for any costs (including costs of removal or replacement), liabilities, lost profits, loss of good will or any other general, special, incidental or consequential damages incurred by Purchaser in connection with this Contract or any product purchased there under.

20 . LAW . This order shall be governed by and shall be construed by the law of the State of New York.

21 . GOVERNMENTAL REGULATIONS. Seller warrants that no code, law, regulation or ordinance of the United States, a state or any other governmental authority or agency or any applicable Executive Order has been violated in the manufacture or sale of the items covered by this Agreement and warrants that the equipment, supplies, and/or articles covered thereby conform with all such requirements.

22 . NUCLEAR FINANCIAL PROTECTION. Purchaser agrees to procure and maintain, as available to it, nuclear energy liability insurance, in a form of policy approved by the Nuclear Regulatory Commission, and protection, as available, against liability for nuclear incidents not covered by such insurance through an indemnity agreement, as provided in Section 170 of the Atomic Energy Act of 1954, as amended, or any succeeding comparable statutory provision, and the regulations there under. Such financial protection shall be effective prior to the time any equipment purchased from us is used or installed at or in connection with any nuclear facility and shall cover us an insured party . To the extent that such financial protection is not suitable to Purchaser. Purchaser agrees to use its best efforts to cause such financial protection to be obtained by eligible parties. We will cooperate with Purchaser and representatives of the nuclear energy insurance syndicates in complying with all underwriting requirements and with those insurance recommendations which may be mutually agreed up on. Notwithstanding any representations or warranties made by us elsewhere in these conditions of sale, we shall not be responsible for any bodily injury or property damage liability or any other public liability for any nuclear incidents, whether or not in respect of or arising in connection with use or installation of our equipment at any nuclear facility or in connection with any such facility. Purchaser hereby assumes any liability which might otherwise be imposed up on us and agrees to indemnify us and hold harmless from any such liability and costs or expenses in connection therewith.

 PULSAFEEDER®

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