

PULSAFEEDER®

Product List

Effective 01/13/14



Process Control Instrumentation

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IMPORTANT INFORMATION WHEN PLACING AN ORDER

1) Fax, mail or telephone orders directly to the Customer Service Department:

Pulsafeeder Incorporated—A Unit of IDEX Corporation
Standard Product Operations Main Office & Manufacturing Facility
 27101 Airport Road, Punta Gorda, Florida, USA 33982-2462 E-Mail: pulsaspo.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	

3) Orders are immediately entered into the computer upon receipt. Our ability to change in house orders is limited. Please be certain your orders are complete when placed.

4) For assistance or to order a "special" pump model not available in the price schedule, please contact our Technical Support Department.

5) Orders are assigned standard lead times based on the size of the order and the time required to manufacture the particular products. Requests to expedite orders may be routed through our Customer Service Department.

6) 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.

7) Other Locations:

PULSAFEEDER-Europe

Via Kennedy, 12-20090
 Segrate—Milano— Italy
 Tel: +0039 377 706 6300

Far East (Office Only)

Room 3502-3504, Zhao Feng Plaza
 No. 1027 Changning Rd
 Shanghai 200050, China
 Tel: 86-2163906367
 Fax: 86-2163863338

Latin America (Office Only)

Av Ejercito Nacional #404
 Piso 8, Oficinas 801-802
 Col. Chapultepec Morales
 Mexico, DF, CP 11560 Mexico
 Tel: 52-555-255-1357
 Fax: 52-555-255-1356

IDEX India Private Ltd.

Sunteck Center, 3rd Floor
 37-40 Subhash Road, Vile Parle East
 Mumbai-400 057, India
 Tel: 91-22-66435500
 Fax: 91-22-66780055

..# 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 F.O.B. Punta Gorda, FL or factory warehouse location.

..# Custom product sales are final.

..# Charges for export documentation apply.

..# Expediting fees may apply.

..# Fees for changes to or cancellation of orders may apply.

..# **Minimum factory order of \$50.**

..# Possession of price schedule does not guarantee right to purchase direct from factory.

***DUE TO CONTINUOUS IMPROVEMENT OF OUR PRODUCTS, WE RESERVE THE RIGHT
TO UPDATE THE INFORMATION CONTAINED IN THIS CATALOG WITHOUT NOTICE.***

MicroVision Cooling Tower Controllers

MicroVision Series

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

MicroVision Selection Guide		MVS	-	-	-	-
PRODUCT DESIGNATOR Position 1, 2 & 3	MVS = MicroVision Toroidal Conductivity Cooling Tower Controller					
VOLTAGE Position 4	1 = 115 volt 2 = 230 volt (no prewired power cord or relays available)					
POWER WIRING Position 5	X = Conduit connections (required for 230 VAC) L = Liquidtight connections P = Prewired power cord and pigtailed					
PANELS Position 6	X = No Panel and No Flow assembly F = Flow assembly, No Panel A = Standard Panel & Flow Assembly B = Panel & Flow Assy, 1 Pump Mount, strainer, sensor tee, inj tee & rails C = Panel & Flow Assy, 2 Pump Mount, strainer, sensor tee, 2 inj tees & rails D = Panel & Flow Assy, 3 Pump Mount, strainer, sensor tee, 3 inj tees & rails					
SUFFIX CODE Position 7, 8 & 9	XXX = Suffix Code 750 = 3/4" Back Flow Check Valve PC025 = 25 Feet (7.6m) PC050 = 50 Feet (15.2m) PC075 = 75 Feet (22.8m) PC100 = 100 Feet (30.4m) CZ_XXX = CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)					

MicroVision Parts

Part No.	Description
16-100-33	Probe Tee

MicroTrac

Cooling Tower Controllers

MICROtrac Series

The MICROtrac controller series features is 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 pigtails 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 flows witch, 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 volt					
	2	= 230volt (no prewired power cord or relays available)					
RELAY & POWER WIRING Position 5	X	= Prewired power cord & Liquid-Tight relay connections					
	L	= Liquid-Tight connections only (required for 230 volt)					
	P	= Prewired power cord and relays					
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 3' 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)					
	PC050	= 50 Feet (15.2m)					
	PC075	= 75 Feet (22.8m)					
	PC100	= 100 Feet (30.4m)					
	CZ_XXX	= CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)					

MicroTrac Parts	
Part No.	Description
04-000-21-1	Toroidal sensor
16-100-01	Flow switch
16-100-33	Sensor Tee

PULSA[®]trol

Cooling Tower Controllers

MC9000 Series

The PULSA[®]trol 9000 Series cooling tower controllers represent a significant improvement in the PULSA[®]trol product line. We have simplified the configurations to bring you the most popular features as standard without compromising the flexibility to select the product you need to meet your specific requirement. All controllers come standard with a complete flow assembly mounted to a polypropylene backboard. All the installer needs to do is mount the assembly to the wall and connect the power and water.

MC9200 Series

In addition to the mounted flow assembly, all MC9200 Series include as standard, a pre-wired selectable timer except MC9220, alarm output relay, dry contact alarm output and water meter totalizer. Options include up to two 28-day biocide timers, single or dual 4-20 mA outputs, communications and agency approvals.



MC9200 Series Selection Guide

MC92_ _ _ _ _

MODELS: Position 5 & 6	10 = Conductivity control 20 = pH control 30 = Conductivity and pH control
RELAY & POWER WIRING Position 7	X = Prewire (Standard) (Not available with CE Approval) A = Conduit only (required for CE Approval)
TIMER 1 Position 8	X = None A = Single 28 day biocide timer B = Dual 28 day biocide timer (not available on MC9230)
ANALOG I/O Position 9	X = None A = Single isolated 4-20mA output B = Dual 4-20mA outputs
COMMUNICATIONS Position 10	X = None A = Serial line communications, includes software B = Communications with modem and software
AGENCY APPROVAL Position 11	X = None A = ETL Approval (conduit on inlet power) B = "CE" Approval
PANEL ASSEMBLY Position 12	FOR DETAILS ON OPTIONAL PANEL CONFIGURATIONS, SEE PAGE 15. X = Standard Panel with flow assembly A = Conductivity panel, prewire B = Conductivity, pH panel, prewire C = Conductivity panel, conduit (must select "A" in position 7 of model string) D = Conductivity, pH panel, conduit (must select "A" in position 7 of model string)
SUFFIX CODE Position 13 thru 19	CZ = CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)

A completed model number should look like "MC9210XXXXXX"

NOTE: Cables for water meters, 4-20mA I/O and alarms must be ordered separately. See page 14-15.

Series MC9000 Optional Sensors and Flow Assemblies

All controllers can be configured with high pressure flow assemblies and non-standard sensor configurations. Contact your sales representative or Technical Support with your specifications to arrange a quote.

PULSA[®]trol

Cooling Tower Controllers

MC9300 Series

In addition to the mounted flow assembly, all MC9300 Series include as standard, four tagable timers two water meter totalizers user configured as dry contact or hall effect, dry contact alarm relay and alarm output relay. Options include two 4-20 mA outputs, conduit connection for power and relays, communications, language and agency approvals.



MC9300 Series Selection Guide		MC93								
MODELS: Position 5	1 = Conductivity control 2 = Conductivity and ORP control 3 = Conductivity and pH control									
ANALOG I/O Position 6	0 = None 1 = Dual 4-20mA Outputs									
RELAY & POWER WIRING Position 7	X = Prewire (Standard) (Not available with CE Approval) A = Conduit only (required for CE Approval)									
pH SETTINGS Position 8	X = Not applicable (for non pH systems) A = Single set point (uses 1 relay selectable for high pH or low pH) B = Dual set point (uses 2 relays, one for high pH and one for low pH)									
LANGUAGE Position 9	X = English (Standard) A = Spanish B = German C = French									
COMMUNICATIONS Position 10	X = None A = Serial line communications, includes software B = Communications with modem and software									
AGENCY APPROVAL Position 11	X = None A = ETL Approval (conduit on inlet power) B = CE™ Approval									
PANEL ASSEMBLY Position 12	FOR DETAILS ON OPTIONAL PANEL CONFIGURATIONS, SEE PAGE 15. X = Standard Panel with flow assembly A = Conductivity panel, prewire B = Conductivity, pH panel / or Conductivity, ORP panel, prewire C = Conductivity panel, conduit (must select "A" in position 7 of model string) D = Conductivity, pH panel / or Conductivity, ORP panel, conduit (must select "A" in position 7 of model string)									
SUFFIX CODE Position 13 thru 19	Ci = CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)									

A completed model number should look like "MC9310XXXXXX"

NOTE: Cables for water meters, 4-20mA I/O and alarms must be ordered separately. See page 14-15.

Series MC9000 Optional Sensors and Flow Assemblies

All controllers can be configured with high pressure flow assemblies and non-standard sensor configurations. Contact your sales representative or Technical Support with your specifications to arrange a quote.

PULSATrol®

Cooling Tower Controllers

MC9500 Series

In addition to the mounted flow assembly, all 9500 Series include as standard, four tagable timers, two water meter totalizers user configured as dry contact or hall effect, four drum level inputs, dry contact alarm relay and alarm output relay. Options include up to four 4-20 mA inputs and outputs, conduit connection for power and relays, communications, language and agency approvals.



MC9500 Series Selection Guide

		MC95																		
MODELS: Position 5	1	= Conductivity control																		
	2	= Conductivity and ORP																		
	3	= Conductivity and pH control																		
	4	= Conductivity, make-up conductivity and pH control																		
	5	= Conductivity (with make-up), pH and ORP																		
	6	= Dual Conductivity for use on open loop (tower) and closed loop (chiller)																		
	7	= Dual Conductivity for use on dual cooling tower systems																		
4-20mA INPUTS/OUTPUTS Position 6	0	= 0 Inputs, 0 Outputs																		
	1	= 0 Inputs, 2 Outputs																		
	2	= 0 Inputs, 4 Outputs																		
	3	= 2 Inputs, 0 Outputs																		
	4	= 2 Inputs, 2 Outputs																		
	5	= 2 Inputs, 4 Outputs																		
	6	= 4 Inputs, 0 Outputs																		
	7	= 4 Inputs, 2 Outputs																		
	8	= 4 Inputs, 4 Outputs																		
RELAY & POWER WIRING Position 7	X	= Prewire (Standard) (Not available with CE Approval)																		
	A	= Conduit only (required for CE Approval)																		
pH SETTINGS Position 8	X	= Not applicable (for non pH systems)																		
	A	= Single set point (uses 1 relay selectable for high pH or low pH)																		
	B	= Dual set point (uses 2 relays, one for high pH and one for low pH)																		
LANGUAGE Position 9	X	= English (Standard)																		
	A	= Spanish																		
	B	= German																		
	C	= French																		
COMMUNICATIONS Position 10	X	= None																		
	A	= Serial line communications, includes software																		
	B	= Communications with modem and software																		
AGENCY APPROVAL Position 11	X	= None																		
	A	= ETL Approval (conduit on inlet power)																		
	B	= CE™ Approval																		
PANEL ASSEMBLY Position 12	X	FOR DETAILS ON OPTIONAL PANEL CONFIGURATIONS, SEE PAGE 15.																		
	A	= Standard Panel with flow assembly																		
	B	= Conductivity panel, prewire																		
	C	= Conductivity, pH panel / or Conductivity, ORP panel, prewire																		
	D	= Conductivity panel, conduit (must select "A" in position 7 of model string)																		
		= Conductivity, pH panel / or Conductivity, ORP panel, conduit (must select "A" in position 7 of model string)																		
SUFFIX CODE Position 13 thru 19	CZ_XXX	= CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)																		

A completed model should look like " MC9510XXXXXX "

NOTE: Cables for water meters, 4-20mA I/O and alarms must be ordered separately. See page 14-15

Series MC9000 Optional Sensors and Flow Assemblies

All controllers can be configured with high pressure flow assemblies and non-standard sensor configurations. Contact your sales representative or Technical Support with your specifications to arrange a quote.

Series MC9000 Optional Panel Assemblies

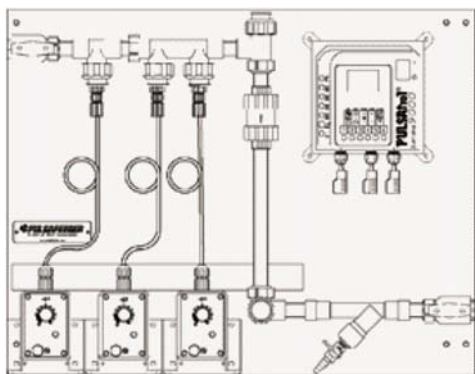
All MC9000 Systems come standard with a flow assembly and sensor tee mounted to a sturdy polypropylene panel. Optional configurations of the panel can be selected to create a complete chemical injection system. These systems are designed to simplify installation and reduce problems caused by a poor installation.

Each panel includes 3/4" plumbing with the following features:

- ..# Quick disconnect sensor mounting tees
- ..# Chemical injection points
- ..# Ball valves on the inlet and outlet
- ..# Back flow check valve
- ..# Flow strainer
- ..# Mounting brackets for chemical metering pumps

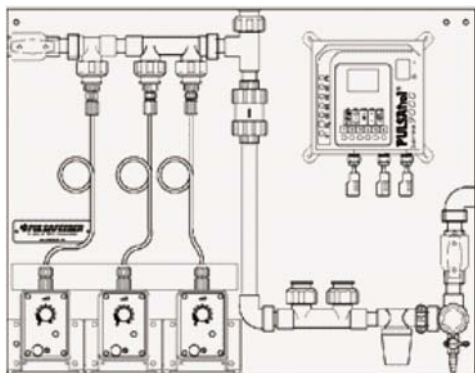
Select from one of the following configurations and insert the option code into digit #12 when configuring your controller.

Note: Pumps must be ordered separately. If ordering PULSAtron Pumps in conjunction with a panel, use suffix code PFB in place of the XXX in the last three digits and the pumps will be installed on the panel during assembly. If you already have a suffix code, then order your standard suffix code followed by PF. For example, if your suffix code is G15, then you would order G15PF when ordering in conjunction with a panel.



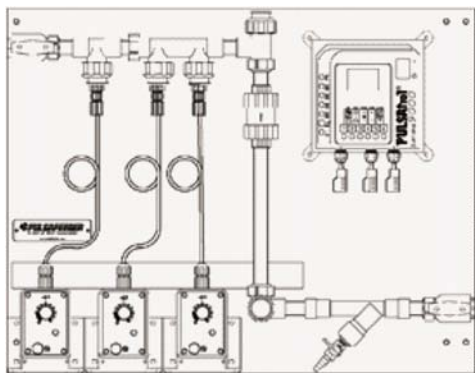
Conductivity Panel - Prewire

Enter Option "A" in position 12 of the PULSAtron 9000 Model String. Panel features 'quick-disconnect' sensor tee; three injectors for inhibitor and biocides; and mounting brackets for three pumps.



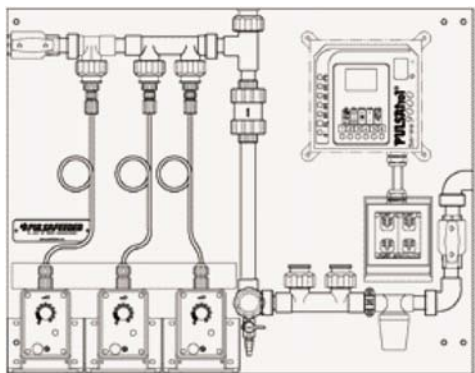
Conductivity, pH, ORP Panel - Prewire*

Enter Option "B" in position 12 of the PULSAtron 9000 Model String. Panel features 'quick-disconnect' sensor tees for all parameters; three injectors for inhibitor and biocides; and mounting brackets for three pumps.



Conductivity Panel - Conduit

Enter Option "C" in position 12 of the PULSAtron 9000 Model String. This option also requires option 'A' in position 7 for conduit. Panel features 'quick-disconnect' sensor tee; three injectors for inhibitor and biocides; and mounting hardware for three pumps. Pump and bleed relays are wired into a watertight outlet box with a splash guard cover.



Conductivity, pH, ORP Panel - Conduit*

Enter Option "D" in position 12 of the PULSAtron 9000 Model String. This option also requires option 'A' in position 7 for conduit. Panel features 'quick-disconnect' sensor tees for all parameters; three injectors for inhibitor and biocides; and mounting hardware for three pumps. Pump and bleed relays are wired into a watertight outlet box with a splash guard cover.

*NOTE: The sensor tee is capped on systems that do not require it.

PULSAtrol® pH/ORP Controllers

MCT Series

The MCT series continuously protects cooling systems from the harmful effects of scaling, corrosion, and microbiological growth. They are designed using advanced microprocessor technology and the latest in surface mount assembly techniques. The result is versatility in a compact, reasonably priced controller package. Simple to program using a clearly labeled keypad and the bright alphanumeric display. And PULSAtrol's distinctive receptacle cords make easy to connect any electrical device being controlled.



MCT Series Selection Guide

MODELS:	20 = MCT1__ (pH) control with high/low alarm indicator and limit timer ⁽¹⁾	MCT1__
Position 5 & 6	30 = MCT1__ (ORP) control with high/low alarm indicator and limit timer ⁽¹⁾	

AVAILABLE OPTIONS Position 7 thru 16 as needed	A = Conduit (Required for 220V, ""PI""s and ""FW""s) B = Mounted flow assembly (not required on prefab's) B2 = High pressure flow assy for pH, 250 psi Max. B4 = High pressure flow assy for orp, 250 psi Max. C = Selectable timer: %, limit, pulse, % post blow down D = Alarm output relay (limit one per unit) E = 28 day single biocide w/ bleed lockout & pre-bleed K = Alarm dry contact M3 = 4-20 mA isolated proportional programmable output R = ETL Approval R1 = CE Mark (option A required) W ⁽²⁾ = Private Label
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A completed model should look like "MCT120AB"

Notes: (1) Limit Timer - 9 hours 59 min Max

(2) First time private label customers need to contact the factory or sales representative for information.

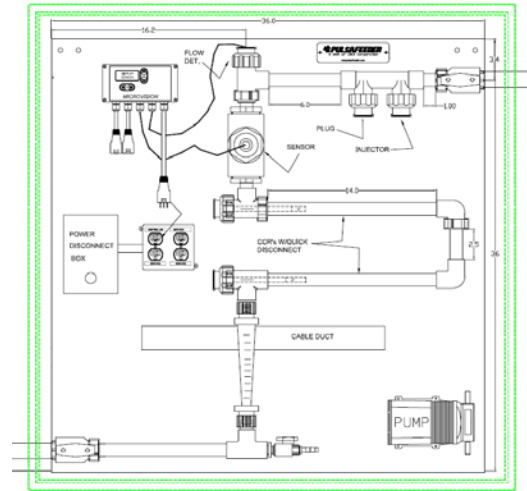
Prefabricated Systems

Cooling Tower and Timer Applications

FI Series: Fully Enclosed Systems

Standard system includes a sample stream plumbing assembly of polypropylene with 3/4" PVC inlet valve, 3/4" PVC outlet valve, sample valve, clear bowl strainer and flow switch. No injection tees are supplied with the standard unit. The system is enclosed in a steel enclosure with a hinged door.

Additional plumbing will be installed according to controller ordered.



Consult Factory For Pricing

PREFABRICATED SYSTEMS Selection Guide FI ___	
PRODUCT DESIGNATOR	100 = Accommodates one controller and one to three chemical metering pumps 200 = Accommodates one controller and one to four chemical metering pumps 300 = Accommodates one controller and one to six chemical metering pumps
PUMP TYPE SELECTOR PULSATRON (pumps to be mounted)	0 = No Pumps 1 = One Pump 2 = Two Pumps 3 = Three Pumps 4 = Four Pumps 5 = Five Pumps 6 = Six Pumps
PUMP TYPE SELECTOR XP SERIES (pumps to be mounted)	0 = No Pumps 1 = One Pump 2 = Two Pumps 3 = Three Pumps 4 = Four Pumps 5 = Five Pumps 6 = Six Pumps
INJECTION TEES (if purchasing this option, you may only make 1 selection)	0 = No Injection Tees (available on FI100, FI200 and FI300) 1 = One Injection Tee (available on FI100, FI200 and FI300) 2 = Two Injection Tees (available on FI100, FI200 and FI300) 3 = Three Injection Tees (available on FI100, FI200 and FI300) 4 = Four Injection Tees (available on FI200 and FI300 only) 5 = Five Injection Tees (available on FI300 only) 6 = Six Injection Tees (available on FI300 only)
FLOW ASSEMBLY (optional)	X = No Flow Meter M = Flow Meter, indicates rate of flow (1-10 gpm)
MISCELLANEOUS ACCESSORIES (optional, may choose any combination of 1 or more)	XX = No Options 02 = Junction box for contractor's electrical hook 03 = Mounting stand for FI100 03 = Mounting stand for FI200 03 = Mounting stand for FI300 04 = Window kit (controller window) 05 = Back flow check valve 3/4
PUMP MOUNTING	X = Not Mounted M = Mounted
COUPON STATION (coupons are not included)	XX = No Coupon Stations C1 = 1 Corrosion Coupon Station C2 = 2 Corrosion Coupon Stations C3 = 3 Corrosion Coupon Stations C4 = 4 Corrosion Coupon Stations
CONTROLLER SERIES	P = PULSAblue T = PULSAtrol M = MicroVision / MircoTrac

Boiler MicroVision

Boiler Controllers

MicroVision Boiler Series

The **MicroVision Boiler Controller** delivers comprehensive boiler water control with 'plug & play' simplicity, at outstanding value. This latest addition to the MicroVision family of controllers is configured specifically for boiler water control, and utilizes intuitive software which provides simple set-up, while providing state of the art maintenance of the water in your boiler. Features of this device include a reliable temperature compensated conductivity probe, 5 output relays with selectable timers, scalable 4-20mA output to report conductivity, hall-effect and pulse water meter inputs and digital drum levels or a flow switch.



MicroVision Boiler Selection Guide		MVBX	-	-	-	-	-	-	-	XXX
PRODUCT DESIGNATOR Position 1 thru 4	MVBX = MicroVision Boiler Controller									
REVIEW AND WIRING Position 5	P = Prewired with pigtails (115 VAC only) C = Conduit connections (115V or 230V)									
ENCLOSURE OPTIONS Position 6	H = Heavy Duty Enclosure									
SYSTEM OPTIONS ASSEMBLED Position 7	X = None A = 1/2" Solenoid valve, one 1" orifice union w/4 plates (Timed Sample) 100 PSI Max. B = 1/2" Motorized ball valve one 1/2" flow throttling valve (Timed Sample) 250 PSI Max. C = 1/2" Motorized ball valve one 1" orifice union w/4 plates (Timed Sample) 250 PSI Max. D = 3/4" Motorized ball vlv, one 3/4" throttling vlv, one 1/2" throttling vlv (Continuous Sample) 250 PSI Max. E = 3/4" Motorized ball valve, two 1" orifice union w/4 plates (Continuous Sample) 250 PSI Max. F = High Pressure Flow Assembly (250 PSI) for cooling tower applications									
SENSOR OPTIONS Position 8	X = No Sensor Provided S = Contact Electrode, 250 PSI Max (210 PSI for steam) 392° F Max									
CABLE LENGTH Position 9 thru 11	000 = No Cable Supplied 010 = 10 Feet of sensor cable 025 = 25 Feet of sensor cable 050 = 50 Feet of sensor cable 075 = 75 Feet of sensor cable 100 = 100 Feet of sensor cable 150 = 150 Feet of sensor cable									
SUFFIX CODES Position 12 thru 18	XXX = Standard Unit CZ_XXX = CE Approval (CZXXX=Europe; CZUKXXX=UK; CZSUIXXX=Switzerland/Liechtenstein)									

MicroVision Boiler Parts

Part No.	Description
CCBS-MVB	MicroVision Boiler Sensor - No Cross

CABLES

Some cables for the PULSATrol 9000 and DCS 900 are ordered separately to provide you the opportunity to buy only the cables required for your application and cut to your specified length. Some cables, e.g. sensor and communications cables are included.

Cables that come **standard** with the product are as follows:

Sensor cables. All sensor cables are cut to the length required for installation into the provided flow assembly. If you order a dual system, the sensor that comes with the second flow assembly will be cut to 10 ft or 3 meters.

Flow Switch cables. All flow switch cables are cut to length required for installation into the provided flow assembly. If you order a dual system, the sensor that comes with the second flow assembly will be cut to 10 ft or 3 meters.

Communications cables. When you order the communications option, you will receive a 10 foot (3 meter) cable with a DIN connection on one end for plugging into the controller and a standard RJ-45 connection on the other end. If your communications option includes the modem, you will also receive an RJ-45 to RJ-11 adapter for connecting into a standard telephone jack.

Optional cables that must be ordered separately are as follows:

Levels – All four drum level inputs are available from a single DIN on the controller. When you order a cable for levels, one end is terminated with the mating DIN for connecting to the controller. The cable is 8-conductor twisted pair. The other end of the cable is terminated with 4 dual-pin Molex connectors, one set for each of the four drum levels.

Water Meters – All water meters inputs are available from a single DIN on the controller. When you order a cable for water meters, one end is terminated with the mating DIN for connecting to the controller. The cable is 8-conductor twisted pair. The other end of the cable has no terminals. Color-coded stripped leads are available for wiring to your specific water meter.

Analog (4-20mA) Inputs – All 4-20 mA inputs are available from a single DIN on the controller. When you order a cable for 4-20mA inputs, one end is terminated with the mating DIN for connecting to the controller. The cable is 8-conductor twisted pair. The other end of the cable has no terminals. Color-coded stripped leads are available for wiring to your analog output device.

Analog (4-20mA) Outputs – All 4-20 mA outputs are available from a single DIN on the controller. When you order a cable for 4-20mA outputs, one end is terminated with the mating DIN for connecting to the controller. The cable is 8-conductor twisted pair. The other end of the cable has no terminals. Color-coded stripped leads are available for wiring to your analog output device.

Dry-contact Alarm – All dry contact alarm outputs are available from a single DIN on the controller. When you order cable for dry contact alarms, one end is terminated with the mating DIN for connecting to the controller. The cable is 8-conductor twisted pair. The other end of the cable has no terminals. Color-coded stripped leads are available for wiring to your alarm input.

Extension cables for sensors – as stated, all sensors come with standard length cables. If you need to extend the length of cable for your sensor, you can order an extension cable up to the maximum distance allowed for proper operation. The cable will come with a DIN plug on one end and a DIN receptacle on the other.

Extension cables for the flow switch – as stated, all flow switch sensors come with standard length cables. If you need to extend the length of cable for your flow switch, you can order an extension cable up to the maximum distance allowed for proper operation. The cable will come with a DIN plug on one end and a DIN receptacle on the other.

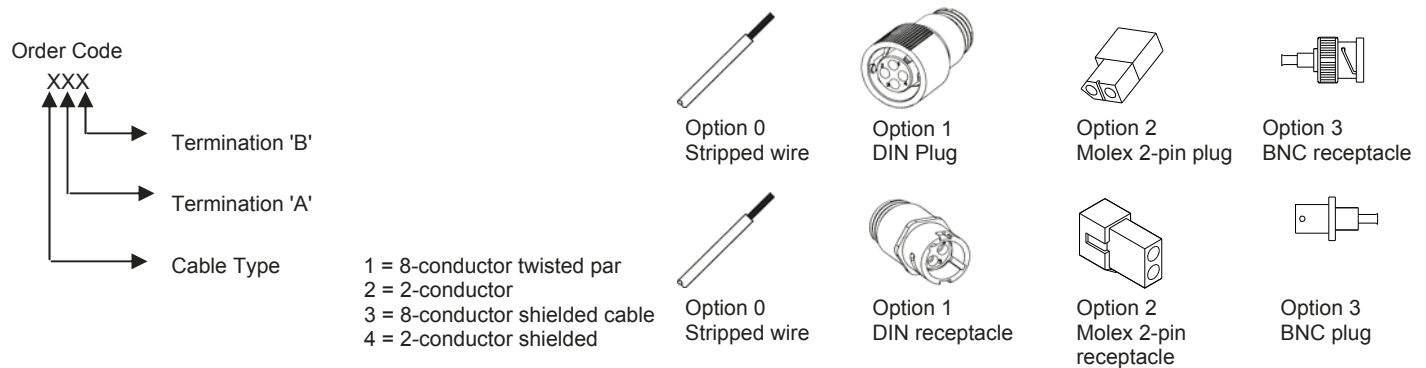
Extension cables for single point drum levels – drum level wands come with 3 ft of cable terminated with a two-pin Molex receptacle that mates to one of the four drum level outputs on the level cable coming from the controller. If you need to extend the length of a single point drum level, you can order an extension cable up to the maximum distance allowed for proper operation. The cable will come with a 2-pin Molex receptacle on one end and a 2-pin Molex plug on the other.

Controller Cables

Use the selection guide below to configure an accessory cable to the length necessary for your application. Please refer to the information at the bottom of the table for maximum lengths.

CONTROLLER CABLE Selection Guide		CBL_ _ _	-	XXX
CABLE TYPE	121 = Multi-port drum level, 4 drum levels 101 = Water Meters, Analog Input, Analog Output, Dry Contact Alarms 211 = Extension Cable for Flow Switch 111 = Extension Cable for Conductivity Sensor 311 = Extension Cable for Conductivity Sensor 433 = Extension Cable for pH/ORP 222 = Extension Cable for single point drum levels			
AGENCY APPROVAL	X = No agency approval required A = CE Approval (required for use with CE approved options)			
CABLE LENGTH	003 = 3 ft. standard minimum length XXX = Desired length in feet up to maximum allowed by application (see below)			
Cable Application	1 ft = 0.30 m 1m = 3.28 ft	Maximum		
Level Wands		500 ft / 152.5 m		
Flow Switch		500 ft / 152.5 m		
Series 9000 Conductivity Sensor		200 ft / 61 m		
DCS 900 Conductivity Sensor		35 ft / 10.5 m		
Level Wands - multiple wands (4) in one cable		500 ft / 152.5 m		
4-20mA Signals		500 ft / 152.5 m		
Dry Contact Water Meters		500 ft / 152.5 m		
Hall Effect (paddle wheel) water meters		500 ft / 152.5 m		
pH/ORP - for distances greater than 30 ft/9.2m, you must use a preamp.		1000 ft / 305 m		

The following diagrams indicate the type of terminals on the cable based on the three digit order code.



pH Preamp Options (Extension Cable Required)	
Part No.	Description
04-046-16	Preamp with power supply only
04-046-18	Preamp with battery pack only
04-046-20	Replacement battery for preamp
45-000-25-1	Preamp with power supply and flow assembly plug
45-000-25-2	Preamp with battery pack and flow assembly plug

PULSAtrol® Boiler Controllers

MBC100 SERIES

The MBC Series continuously protects boiler systems from the harmful effects of scaling and corrosion. They are designed using advanced microprocessor technology and the latest in surface mount assembly techniques. The result is versatility in a compact, reasonably priced controller package. Simple to program using a clearly labeled keypad and the bright alphanumeric display.



MBC Series Selection Guide		MBC110
MODEL: Position 1 thru 6	MBC110 = Conductivity control with selectable sample mode (continuous or timed), single line display, S.S. sensor	
AVAILABLE OPTIONS Position 7 thru 12 as needed	C = Selectable timer: %, limit ⁽¹⁾ , pulse, % post blow down D = Alarm output relay K = Alarm dry contact M3 = 4-20 mA isolated proportional programmable output R = Agency approval - US/Canada (conduit on inlet power) R1 = CE Mark approved W ⁽²⁾ = Private Label	
A completed model should look like " MBC110CDR1"		

Notes: (1) Limit Timer - 9 hours 59 min Max

(2) First time private label customers need to contact the factory or sales representative for information.

MBC Replacement Sensor

Part No.	Description
04-750-13-1	Conductivity; In-Line type Max. Press.250psi, Max Temp. 400°F w/ Temp. Comp.

Prefabricated Systems

FI Series: Fully Enclosed Systems

If a standard panel system does not fit your requirements, Pulsafeeder can fabricate a system tailored to your application. Some of the systems we have developed include:

- ..# Boiler Panels that include a boiler controller, metering pumps and water tight conduit boxes mounted to a polypropylene or stainless panel.
- ..# Fully Enclosed system with pumps, controller and all electrical mounted into a NEMA 4X enclosure for installations in extreme conditions.
- ..# Floor or Wall mounted drum rack systems.
- ..# High Pressure Flow Assemblies.
- ..# Corrosion Monitoring systems that combine the features of a standard panel system with a coupon rack.

For details on any of these systems contact your sales representative or the Pulsafeeder Technical Support team with your specifications to arrange a quote.

Micro Vision **Timer** Programmable Timers

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

PULSAtrol®

ANALOG MINI SERIES

ANALOG TIMER Selection Guide		-	-	-
MODEL	MP1 = Water meter actuated. Enclosure: Molded fiberglass, prewired to include power cord, duplex AC receptacle & 8' water meter hook-up (0-9 min. scale std.). MPC1 = Percentag/recycle timer in fiberglass prewired enclosure. Adjustable % on-time: fixed 9 min. scale MPC2 = Percentage/recycle timer in fiberglass prewired enclosure. Adjustable % on-time and off-time. Standard scales 0-9 min. on-time, 0-9 min. off-time.			
AVAILABLE OPTIONS	A2 = 0 - 18 seconds A4 = 0 - 18 minutes			
TIME SCALE Position 4 & 5 as needed	A5 = 0 - 90 seconds A6 = 0 - 180 seconds A7 = 0 - 90 minutes			
PUSH BUTTON SETTING. SINGLE TIMER.	FA = 0 - 9.9 minutes FB = 0 - 99 seconds			

DIGITAL GLYCOL FEEDER

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.



Controller Discount Applies on Digital Glycol Feeder

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 B = 230VAC no pump (must be conduit) 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)								

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
Replacement Relay	
10-006-01	Relay, 5V, 12A, PCB Type
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)
Pressure Gauge	
12-130-01	Standard pressure gauge 0-100psi, liquid filled
12-130-03	Low pressure gauge 0-30psi, liquid filled

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

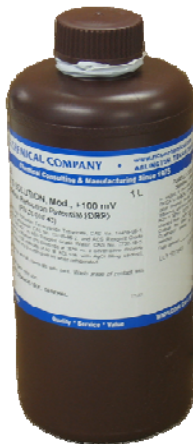
Flow Controllers	
Model No.	Description
FC2000	Flow Controller - Standard flow controller has 3/4" PVC threaded connections with 3/4" PVC slip adaptors to use if needed. 1 GPM minimum flow required for activation
FC2000C	Flow Controller - Standard flow controller w/ 1 PVC slip connectors; 1 GPM min. 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)

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 $\mu\text{S}/\text{cm}$



Calibration Solutions	
Part No.	Description
Conductivity Solutions (500 ml bottles)	
20-016-24	500 conductivity (6 pack)
20-016-26	2000 conductivity (6 pack)
20-016-28	5000 conductivity (6 pack)
20-016-00	500 conductivity (1 bottle)
20-016-02	2000 conductivity (1 bottle)
20-016-04	5000 conductivity (1 bottle)
pH Kit Solutions	
20-016-36	pH 4 buffer solution - 4 oz
20-016-37	pH 4 buffer solution - 32 oz
20-016-38	pH 7 buffer solution - 4 oz
20-016-39	pH 7 buffer solution - 32 oz
20-016-40	pH 10 buffer solution - 4 oz
20-016-41	pH 10 buffer solution - 32 oz
ORP Kit Solutions	
20-016-42	ORP 100 mV buffer solution - 4 oz
20-016-43	ORP 100 mV buffer solution - 32 oz
20-016-44	ORP 465 mV buffer solution - 4 oz
20-016-45	ORP 465 mV buffer solution - 32 oz
Calibration Kit / Tee	
12-043-58	Calibration Kit / Tee

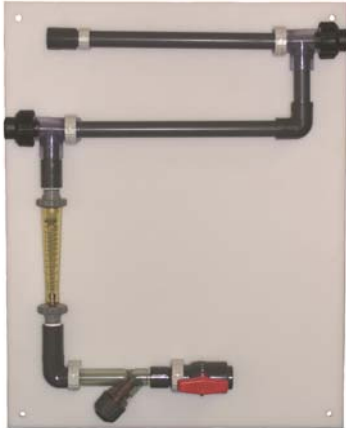
CORROSION COUPON RACKS

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			
Standard system includes: PVC coupon holder, nylon screw and nut, PVC inlet ball valve, 0.75 in. (19mm) piping, and Schedule 80 PVC mounted on 0.25 in. HDPE. System does not include coupons.			
Model No.	Description		
CCR10	1 station 12 in. H x 22 in. W (305 x 559 mm) Panel Size		
CCR20	2 stations 16 in. H x 22 in. W (406 x 559 mm) Panel Size		
CCR30	3 stations 20 in. H x 22 in. W (508 x 559 mm) Panel Size		
CCR40	4 stations 28 in. H x 22 in. W (71 x 559 mm) Panel Size		
CCR50	5 stations 32 in. H x 22 in. W (813 x 559 mm) Panel Size		
CCR60	6 stations 36 in. H x 22 in. W (914 x 559 mm) Panel Size		
Available optional Piping:			
1" PVC piping max 150 psi (10.4 bar), 140° F (60°C)		3/4" CPVC piping max 150 psi (10.4 bar), 212° F (100°C)	
1" CPVC piping max 150 psi (10.4 bar), 212° F (100°C)		3/4" black iron piping max 250 psi (17 bar), 212° F (100°C)	
Model No.	Model No.	Model No.	Model No.
CCR10A	CCR10B	CCR10C	CCR10D
CCR20A	CCR20B	CCR20C	CCR20D
CCR30A	CCR30B	CCR30C	CCR30D
CCR40A	CCR40B	CCR40C	CCR40D
CCR50A	CCR50B	CCR50C	CCR50D
CCR60A	CCR60B	CCR60C	CCR60D
Available options:			
Option	Description		
X1	Quick release coupon holders (PVC only)		
X4	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C).		
X6	1" cold water flow meter, Max. 100 psi (7 bar) @ 110°F (43°C).		
X7	PVC outlet ball valve, 3/4 blk iron units use 3/4" brass gate valve 300 psi		
X8A	Y Strainer for 3/4 PVC		
X8B	Y Strainer for 1 PVC or CPVC		
X8C	Y Strainer for 3/4 CPVC or black iron		
X8D	3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70°F		
X8E	1" Polypropylene T strainer 30 mesh, 150 psi max at 70°F		
X9	Clear PVC pipe sections. Only available on .75 in PVC models above.		
F3	Flow control valve 3 GPM (3/4" only)		
F5	Flow control valve 5 GPM (3/4" only)		
1F5	Flow control valve 5 GPM (1" only)		
1F10	Flow control valve 10 GPM (1" only)		
Z4	Sample/Dain port (PVC) only		

CORROSION COUPON RACKS



Corrosion Coupon Racks

Standard system includes: PVC coupon holder, nylon screw and nut, PVC inlet ball valve, 0.75 in. (19mm) piping, and Schedule 80 PVC mounted on 0.50 in. HDPE. System does not include coupons.

Model No.	Description
CCR1	1 station 12 in. H x 22 in. W (305 x 559 mm) Panel Size
CCR2	2 stations 16 in. H x 22 in. W (406 x 559 mm) Panel Size
CCR3	3 stations 20 in. H x 22 in. W (508 x 559 mm) Panel Size
CCR4	4 stations 28 in. H x 22 in. W (71 x 559 mm) Panel Size
CCR5	5 stations 32 in. H x 22 in. W (813 x 559 mm) Panel Size
CCR6	6 stations 36 in. H x 22 in. W (914 x 559 mm) Panel Size

Available optional Piping:

1" PVC piping max 150 psi (10.4 bar), 140° F (60°C)	3/4" CPVC piping max 150 psi (10.4 bar), 212° F (100°C)	1" CPVC piping max 150 psi (10.4 bar), 212° F (100°C)	3/4" black iron piping max 250 psi (10.4 bar), 212° F (100°C)
Model No.	Model No.	Model No.	Model No.
CCR1A	CCR1B	CCR1C	CCR1D
CCR2A	CCR2B	CCR2C	CCR2D
CCR3A	CCR3B	CCR3C	CCR3D
CCR4A	CCR4B	CCR4C	CCR4D
CCR5A	CCR5B	CCR5C	CCR5D
CCR6A	CCR6B	CCR6C	CCR6D

Available options:

Option	Description
X1	Quick release coupon holders (PVC only)
X4	3/4" hot/cold water flow meter, Max. 100 psi (7 bar) @ 130°F (54°C).
X6	1" cold water flow meter, Max. 100 psi (7 bar) @ 110°F (43°C).
X7	PVC outlet ball valve std, 3/4 blk iron units use 3/4" brass gate valve 250 psi
X8A	Y Strainer for 3/4 PVC
X8B	Y Strainer for 1 PVC or CPVC
X8C	Y Strainer for 3/4 CPVC or black iron
X8D	3/4" Polypropylene bowl strainer 30 mesh, 150 psi max at 70°F
X8E	1" Polypropylene T strainer 30 mesh, 150 psi max at 70°F
X9	Clear PVC pipe sections. Only available on .75 in PVC models above.
F3	Flow control valve 3 GPM (3/4" only)
F5	Flow control valve 5 GPM (3/4" only)

Coupon Rack Replacement Parts

Part No.	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 & Corrosion

Part Number	Description
03-220-10	Mild Steel
03-220-00	Copper
03-220-60	303 Stainless Ste
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



Lead Free Brass Contacting Water Meters - Cold Water						
	Code	Rating	Reference	MTR	-G	
Select Water Meter Size	1 =	.625" x .75"	.25 - 20 GPM			
	3 =	1" NPT	.75 - 50 GPM			
	4 =	1.5" NPT	1.5 - 100 GPM			
	5 =	2" NPT	2 - 160 GPM			
		Gallons Per Contact (GPC)				
Code	Rating	3/4" x 5/8"	1"	1.5"	2"	
00 =	Less Reed	X	X	X		
01 =	0.1 GPC	X	X			
02 =	0.25 GPC	X	X	X		
03 =	0.5 GPC	X				
04 =	1 GPC	X	X	X	X	
07 =	10 GPC	X	X	X	X	

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

Brass Contacting Water Meters - Cold Water						
	Code	Rating	Reference	MTR	-A	
Select Water Meter Size	2 =	.75" NPT	.5 - 30 GPM			
	3 =	1" NPT	.75 - 50 GPM			
	4 =	1.5" NPT	1.5 - 100 GPM			
	5 =	2" NPT	2 - 160 GPM			
		Gallons Per Contact (GPC)				
Code	Rating	3/4"	1"	1.5"	2"	
00 =	Less Reed	X	X		X	
01 =	0.1 GPC	X				
03 =	0.5 GPC	X				
04 =	1 GPC	X	X	X		
06 =	5 GPC				X	
07 =	10 GPC	X				

Standard Brass
 3/4" - 2" Meters have male Epoxy Coated NPT Bronze Bodies with unions, rated

Turbine Contacting Water Meters - Cold Water						
	Code	Rating	Reference	MTR	--	
Select Water Meter Size	6 =	3" Flanged	440 GPM			
	7 =	4" Flanged	660 GPM			
	8 =	6" Flanged	1650 GPM			
		Gallons Per Contact				
Code	Ratings	3"	4"	6"		
10 =	100 GPC	X	X	X		
13 =	1,000 GPC	X	X	X		

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

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.

Water Meters get a pump accessory discount

SOLENOIDS VALVES



Standard
Solenoid Valve



High Temp
Solenoid Valve

Standard Solenoid Valves	
Part Number	Description
12-072-62	2 Way N/C 1/4" Stainless Steel Body with tefon Seat. 150 psi MOPD at 160° F. 120/60, 110/50 volt - ASCO vlv
12-072-53	2 Way N/C 1/2" NPT Brass Body. 0 psi min - 150 psi MOPD at 180° F. 120/60, 110/50 volt - ASCO vlv
12-072-54	2 Way N/C 3/4" NPT Brass Body. 0 psi min - 150 psi MOPD at 180° F. 120/60, 110/50 volt - ASCO vlv
12-072-55	2 Way N/C 1" NPT Brass Body. 0 psi min - 150 psi MOPD at 180° F. 120/60 volt - ASCO vlv
12-072-56	2 Way N/C 1" NPT Brass Body. 5 psi min - 150 psi MOPD at 180° F. 120/60, 110/50 volt - ASCO vlv
12-072-57	2 Way N/C 1 1/2" NPT Brass Body. 0 psi min - 150 psi MOPD at 180° F. 120/60 volt - ASCO vlv
12-072-58	2 Way N/C 1 1/2" NPT Brass Body. 5 psi min - 150 psi MOPD at 180° F. 120/60 volt - ASCO vlv
12-072-59	2 Way N/C 2" NPT Brass Body. 5 psi min - 150 psi MOPD at 180° F. 120/60 volt - ASCO vlv
High Temp Solenoid Valves	
12-072-60	2 Way N/C 1/2" NPT Brass Body. 1 psi min - 125 psi MOPD at 353° F. 120/60 volt - ASCO vlv
12-072-61	2 Way N/C 3/4" NPT Brass Body. 2 psi min - 125 psi MOPD at 353° F. 120/60, 110/50 volt - ASCO vlv
12-048-00	2 Way N/C 1/2" Brass Body, PTFE. 0 psi differential, 100 psi @ 356° F. 115 VAC.
12-056-00	2 Way N/C 3/4" Brass Body, PTFE. 0 psi differential, 100 psi @ 356° F. 115 VAC.

MOTORIZED BALL VALVES



EC Series
Motorized Valve



Dynamic Series
Motorized 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)

Dynamic Series - Motorized Valves	
Part Number	Description
Motorized Valves for Cooling Tower Applications. Brass valve, full port, with electric actuator. 300 psi max. 115 VAC	
12-054-14	1/2" NPT
12-054-13	3/4" NPT
12-054-12	1" NPT
12-054-11	2" NPT

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	
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.



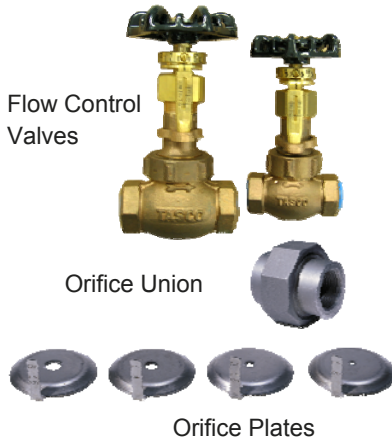
Motorized Ball Valve

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)
16-892-16	1/2" high steam rated motorized ball valve (10-36 Worcester Actuator)
16-892-18	3/4" high steam rated motorized ball valve (12-75 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
12-041-00	Mounting kit for 12-043-00 & 12-040010
12-041-10	Mounting kit for 12-043-00 & 12-040-10
12-049-00	Mounting kit for 12-051-00 & 12-040-00
12-049-10	Mounting kit for 12-051-00 & 12-040-10
05-006-20	Limit switch for 10-36 actuator

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.

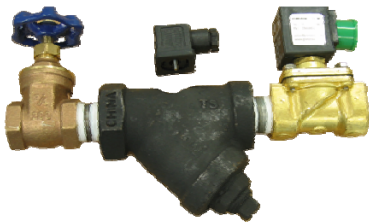


Flow Control Valves	
Part Number	Description
12-075-01	3/8" valve (300 psi maximum)
12-046-01	1/2" valve (300 psi maximum)
12-055-01	3/4" valve (300 psi maximum)

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

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"
16-900-13	1 1/2"
16-900-14	2"
16-900-18-1	16-900-18 less solenoid valve
16-900-12-1	16-900-12 less solenoid valve
16-900-13-1	16-900-13 less solenoid valve
16-900-14-1	16-900-14 less solenoid valve

Sample Stream Parts	
Part Number	Description
26-034-48-1	Complete sample stream assembly. Includes: flow switch, PVC shutoff valve (input side), bowl strainer, sample valve, PVC shutoff valve (output side)
26-034-48-2	Same as above less flow switch
03-034-00	3/4" Tee TXXT, PVC
03-174-00	Reducer Bushing, 3/4S x 1/2T, PVC
03-048-11	3/4" Tee TXXT, CPVC
12-068-00	1" Steel Y-strainer
12-071-00	3/4" Steel Y-strainer
12-069-00	3/4" Clear PVC Y-strainer
12-070-00	Replacement mesh for 12-069-00
12-072-11	1" PVC shutoff valve
12-079-00	1" Brass shutoff valve
12-072-00	3/4" PVC ball valve
16-810-00	2 stage injection manifold
16-810-03	3 stage injection manifold
16-810-04	4 stage injection manifold
16-810-08	5 stage injection manifold
04-300-08	Sample valve assembly

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ACT / ABC PARTS

ACT / ABC Parts (101/102 only)

Part No.	Description
08-986-05	Power supply board assembly, ETL/CE

ACT Parts (101/102 onl)

Part No.	Description
08-986-06	Limit timer board assembly

ACT Motherboard Panel Assemblies, Complete

Part No.	Description
15-920-08	Panel assembly ACT102BC
15-920-08-1	"CE" Panel assembly ACT102ABCPV1
15-920-12	Panel assembly ACT102B
15-920-12-1	"CE" Panel assembly ACT102ABPV1
15-920-20	Panel assembly ACT102
15-920-20-1	"CE" Panel assembly ACT102APV1

ABC Mother Board Panel Assemblies, Complete

Part No.	Description
15-920-28	Panel assembly ABC102
15-920-28-1	"CE" Panel assembly ABC102P5V1

ACT Flow Assemblies, Complete

Part No.	Description
16-596-20	Flow assembly, with flow switch conductivity (no sensor)

ACT Flow Assembly Components

Part No.	Description
03-093-00	Male adaptor, 3/4"
03-096-62-E	Elbow tee, 3/4"
04-300-08	Sample valve assembly
03-096-56-E	Tee, sensor
03-096-52-E	Tee, flow, clear
03-005-05	O-ring, 1 1/2" ID, 1 3/4" OD, 1/16" Thk (tee)
03-005-04-2	O-ring, 15/16" ID, 1 1/8" OD, 3/32" Thk (sensor/ sensor holder)
06-008-00-E	Coupling Nut
03-096-71-E	Pipe Nipple, 3/4" x 3.00 long
04-300-90-1	Flow Switch
04-300-91	"CE" flow switch

ACT Replacement Sensor

Part No.	Description
04-600-02	Conductivity; Stainless Steel with 10' cable

ABC Replacement Sensors

Part No.	Description
04-750-14-1	Conductivity (ABC50) only In-Line type Max. Press. 250 psi, Max Temp. 400°F
04-750-13-1	Conductivity (ABC101/102) only In-Line type Max. Press. 250 psi, Max Temp. 400°F w/Temp. Comp.

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PARTS

Daughter Cards

Part No.	Description	Applicable Series
08-985-05	Conductivity card	100
08-985-50	Isolated pH card	100
08-600-48	Serial line comm. card w/o 2400 baud modem	200/300/9200
08-600-45	Serial line comm. card w/ 2400 baud modem	200/300/9200
08-600-06	Dual conductivity card	All Series except 100
08-600-16	Single conductivity card	All Series except 100
08-600-08	Dual pH/ORP card	All Series except 100
08-600-18	Single pH card	All Series except 100
08-600-23	Dual conductivity card for boilers and hi-pressure	All Series except 100
08-600-21	Single conductivity card for boilers and hi-pressure	All Series except 100
08-600-12	Dual 4-20mA output card	All Series except 100
08-600-13	Single 4-20mA output card	200/300/9200
08-600-10-1	Dual 4-20mA input card	9600/9500
08-600-19	Single ORP card	9300/9500/9600
08-600-48	Serial line comm. card w/o 14.4K baud modem	9300/9500/9601
08-600-59	Serial line comm. card w/ 14.4K baud modem	9300/9500/9602

Mother Boards

Part No.	Description	Applicable Series
08-985-00-E	Mother board, 100 Series	100
12-042-73	Kit, 100 Series mother board w/ battery	100
12-042-74	Kit, 100 Series mother board w/ M1 option	100
12-042-75	Kit, 100 Series mother board w/ M2, M3 option	100
08-600-14-2	Mother board with 2 line display	200/9200
08-600-50	Mother board for 2 line display	200/9200
08-600-15-2	Mother board with 8 line display	300/9300/9500/9600
08-600-52	Mother board for 8 line display	300/9300/9500/9601

Power Supply / Relay Boards

Part No.	Description	Applicable Series
12-042-76	Power supply/relay board w/ K option	100
08-985-60	Power supply/relay board w/o connectors	100
08-600-04-1	Relay board w/o dry contact option	200
08-600-04-2	Relay board w/o dry contact option	200/9200
12-042-78	Relay board w/o dry contact option	300
08-600-03-3	Relay board w/o dry contact option	All Series except 100
08-600-47-2	Relay board w/o dry contact option	All Series except 100
08-600-65-3	Relay board w/o dry contact option	400/9300/9500/9600

Kits, Power Supply / Relay Boards

Part No.	Description	Applicable Series
12-042-71	Kit, Power supply/relay board complete	100
12-042-77	Kit, Relay board complete	200/9200
12-042-72	Kit, power supply board w/ cables to relay board	200/300/9200
12-042-78	Kit, Relay board complete	300
12-042-83	Kit, Relay board complete	9300/9500/9600

Relays

Part No.	Description	Applicable Series
10-001-08-E	Relay, AC/IO, module, plug-in/screw mounting	200/300/9200
10-001-12	Relay, SPDT, 10A, 12VDC coil, mech., plug-in	All Series except 100

PULSA[®]tro^l PARTS

Complete Flow Assemblies

Part No.	Description
Standard Flow Assemblies	
16-596-00	Flow assembly, with flow switch (no sensor)
16-596-02	Flow assembly, with flow switch for pH or ORP (no sensor)
16-596-04	Flow assembly, with flow switch for pH/ORP (no sensors)
16-596-08	Flow assembly, with flow switch for pH/ORP/Cond (no sensors)
16-596-12	Flow assembly, with flow switch for pH/Cond or ORP/Cond (no sensors)
16-596-22	Flow assembly, with flow switch for conductivity (no sensor)
Hi-Pressure Flow Assemblies	
16-596-24	Flow assembly, w/o flow switch for conductivity (no sensor) "B1"
16-596-26	Flow assembly, w/o flow switch for pH (no sensor) "B2"
16-596-28	Flow assembly, w/o flow switch for pH/Cond or ORP/Cond (no sensors) "B3"
16-596-30	Flow assembly, w/o flow switch for ORP (no sensor) "B4"
16-596-32	Flow assembly, w/o flow switch for pH/ORP (no sensors) "B6"
16-596-34	Flow assembly, w/o flow switch for pH/ORP/Cond (no sensors) "B7"
"CE" Flow Assemblies (R1)	
16-596-01	Flow assembly, with flow switch (no sensor)
16-596-03	Flow assembly, with flow switch for pH or ORP (no sensors)
16-596-05	Flow assembly, with flow switch for pH/ORP (no sensors)
16-596-09	Flow assembly, with flow switch for pH/ORP/Cond (no sensors)
16-596-13	Flow assembly, with flow switch for pH/Cond or ORP/Cond (no sensors)
16-596-23-1	Flow assembly, with flow switch for conductivity (no sensor)

Series MC9000 Replacement Sensors

Item No.	Note:	Application
04-600-92-1	MC9000 Stainless steel electrodes, 12" cable terminated w/DIN plug.	Conductivity
04-600-92-2	MC9000 Stainless steel electrodes, 120" cable terminated w/DIN plug.	Conductivity or Make-up
04-600-93-1	MC9000 CE approved, Stainless steel electrodes, 12" cable terminated w/DIN plug.	Conductivity
04-600-93-2	MC9000 CE approved, Stainless steel electrodes, 120" cable terminated w/DIN plug.	Conductivity or Make-up
04-000-00	MC9000 Epoxy body, dual junction, 42mm extension w/3 ft. cable.	pH
04-000-01	MC9000 Epoxy body, dual junction, 42mm extension w/10 ft. cable.	pH
04-000-10	MC9000 Epoxy body, platinum band, single junction, 42mm extension w/3 ft. cable.	ORP
04-000-11	MC9000 Epoxy body, platinum band, single junction, 42mm extension w/10 ft. cable.	ORP
04-300-92	Flow switch, 3/4" with 18" cable terminated with DIN plug.	Flow
04-300-94	Flow switch, 3/4" with 120" cable terminated with DIN plug.	Flow
04-300-93	Flow switch, CE approved, 3/4" with 18" cable terminated w/DIN plug.	Flow
04-300-95	Flow switch, CE approved, 3/4" with 120" cable terminated w/DIN plug.	Flow

Series MB9000 Replacement Sensors

Item No.	Note:	Application
04-750-18	MB9000 Series replacement sensor. S. S. electrodes.	Conductivity
04-048-00	MB9000 Series replacement sensor. S. S. body, 10' cable.	pH
04-400-50	MB9000 Series replacement sensor. Kynar body, 3' cable.	pH, Self Cleaning

MC9500 & MB9600 Accessories

Single Point Level Wands

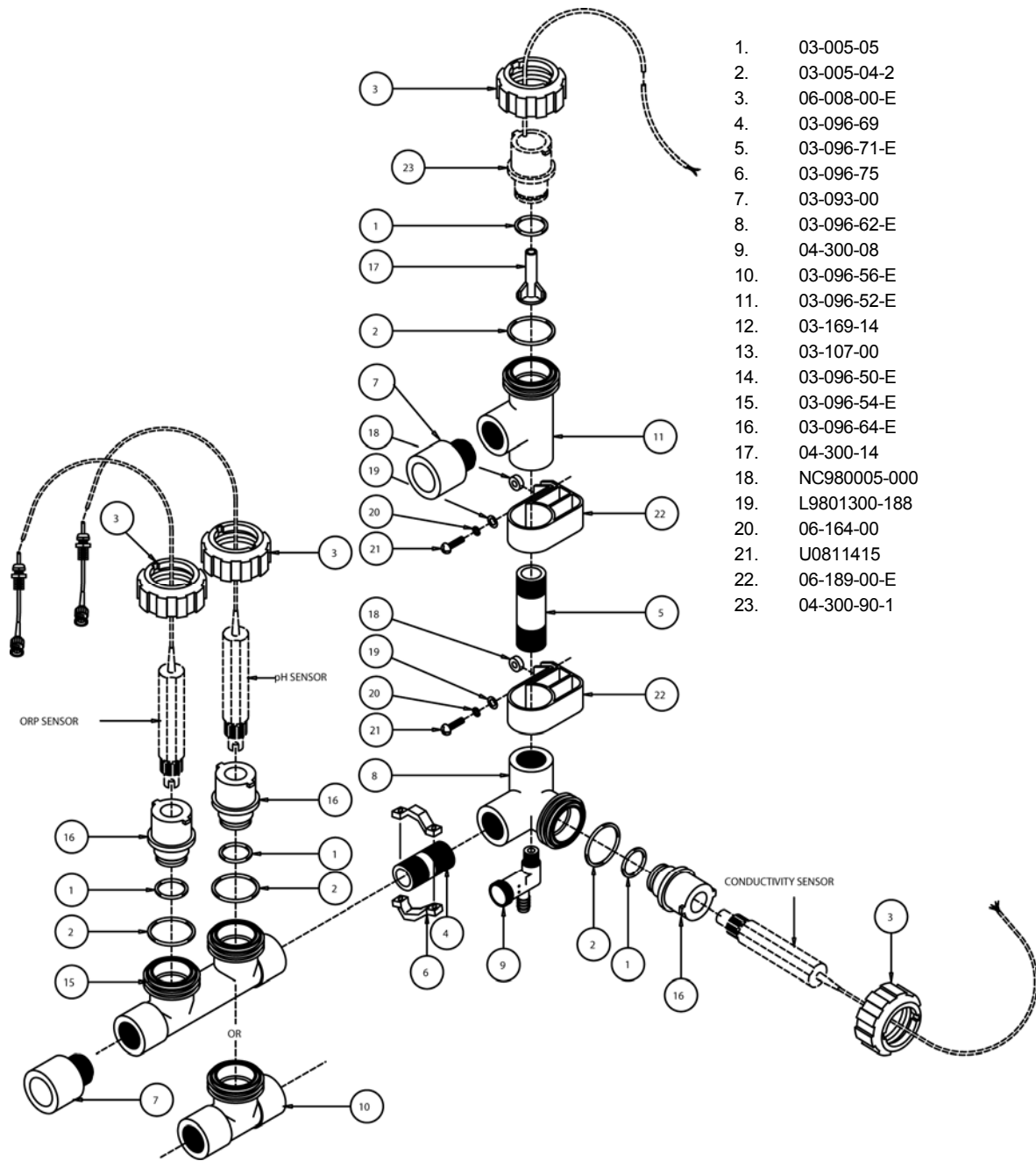
Part No.	Description
16-171-81-2	Adjustable to 26" with 3 ft. cable
16-171-81-1	Adjustable to 42" with 3 ft. cable
16-171-81-4	Adjustable to 60" with 3 ft. cable

Kits, Fuse / Spare Parts

Part No.	Description	Applicable Series
12-042-61	Kit, fuse, 1A, 250V, rectangular (pkg. of 5)	100
12-450-01	Kit, fuses (1A, 125V and 5A, 125V) and jumpers	100
12-450-04	Kit, fuses (5A 250V slo-blo) and jumpers	100
12-042-62	Kit, fuse, 5A, 125V, rectangular (pkg. of 5)	200/300/9200
12-042-62-1	Kit, fuse, 5A, 250V, round (pkg. of 5)	200/300/9200
12-450-00	Kit, fuses (1A, 250V and 5A, 250V) and jumpers	200/300/9200
12-450-02	Kit, fuses, (1/4A, 250V and 5A, 125V) and jumpers	300/9300/9500/9600
12-042-62-2	Kit, fuse, 5A, 250V, slo-blo, round (pkg. of 5)	All Series except 100
12-042-85	Kit, fuse, 1A, 250V, slo-blo, glass (pkg. of 5)	All Series except 100
12-450-03	Kit, fuses (1A & 5A, 250V, slo-blo) and jumpers	All Series except 100
12-450-05	Kit, CE" fuses (1.6A & 5A, 250V slo-blo) and jumpers	All Series except 100
12-450-06	Kit, fuse, 63mA, 250V, slo-blo (pkg. of 4)	9300/9500/9600

FLOW ASSEMBLY PARTS

Flow Assembly Diagram



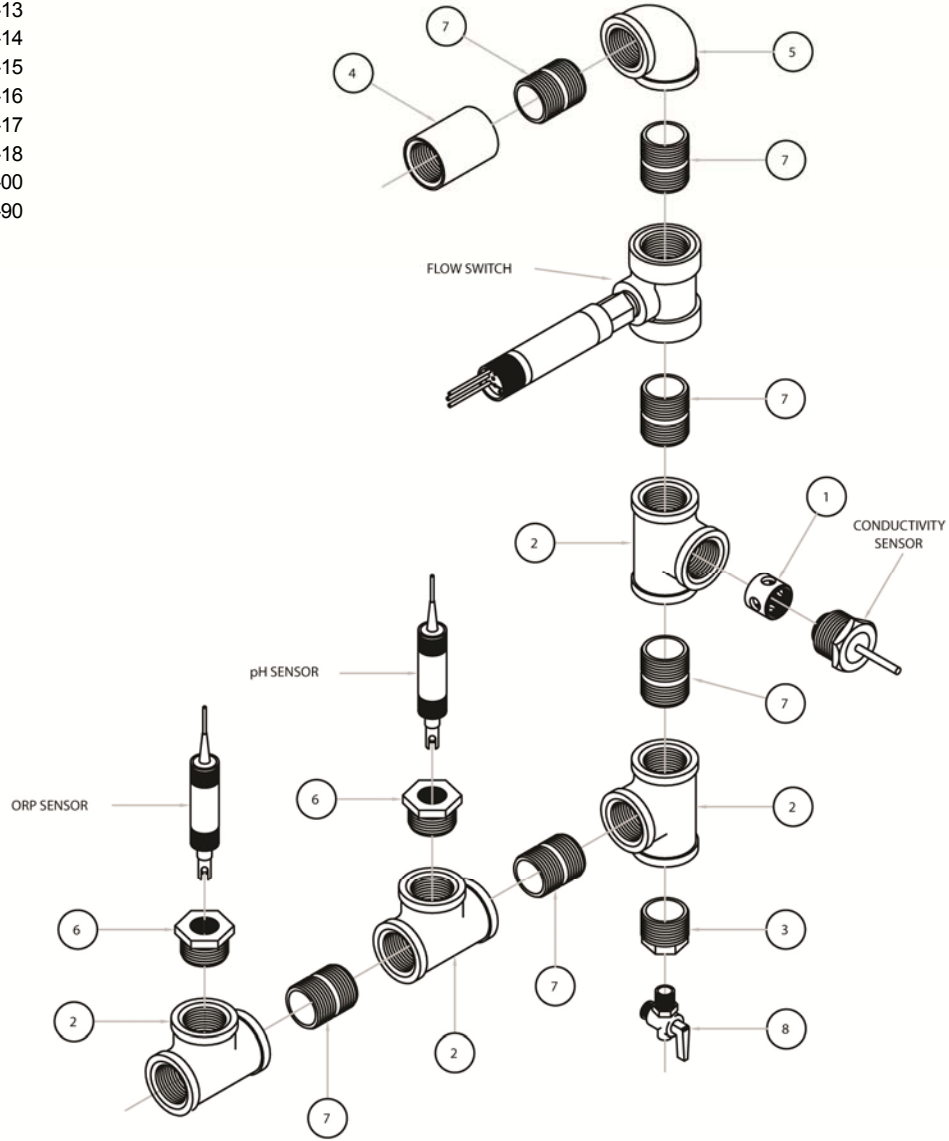
- 1. 03-005-05
- 2. 03-005-04-2
- 3. 06-008-00-E
- 4. 03-096-69
- 5. 03-096-71-E
- 6. 03-096-75
- 7. 03-093-00
- 8. 03-096-62-E
- 9. 04-300-08
- 10. 03-096-56-E
- 11. 03-096-52-E
- 12. 03-169-14
- 13. 03-107-00
- 14. 03-096-50-E
- 15. 03-096-54-E
- 16. 03-096-64-E
- 17. 04-300-14
- 18. NC980005-000
- 19. L9801300-188
- 20. 06-164-00
- 21. U0811415
- 22. 06-189-00-E
- 23. 04-300-90-1

Drawing #1

FLOW ASSEMBLY PARTS

Hi-Pressure Flow Assembly Diagram

- 1. 03-068-00
- 2. 03-135-13
- 3. 03-135-14
- 4. 03-135-15
- 5. 03-135-16
- 6. 03-135-17
- 7. 03-135-18
- 8. 03-176-00
- 9. 12-600-90



Drawing #2

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 date of shipment from the factory. 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.
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 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. MicroTrac and MicroVision toroidal probes are warranted for 24 months from date of shipment from the factory when purchased in conjunction with the controller.
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 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**
 - a. Please contact our Customer 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 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 acknowledgement will be refused by our receiver.
 - e. 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 cancelled, and a new request must be made by the customer to continue with the return procedure.
4. **Non-Warranty Return Procedure**
 - a. If you are experiencing a concern with your Pulsafeeder product, first consult the distributor, dealer or Regional Sales Manager or the operation and maintenance manual for assistance. If service of your non-warranty unit is necessary, you must request a return material authorization. A RMA form will be issued and must be used as the packing list attached to the outside of the box. Please send the unit freight prepaid with the RMA number visibly displayed on the outside of the carton. 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 acknowledgement will be refused by our receiver.
 - b. The charges listed in the following table will apply.

Product	Repair Cost
Pumps and Pump Accessories – within 5 years of sale date	Current List Price x .50 x Part Discount Multiplier
Controllers and Controller Accessories within 5 years of sale date	Current List Price x .50 x Part Discount Multiplier
Any item older than 5 years from date of sale	With purchase order, <input type="checkbox"/> \$50 bench fee to evaluate. The <input type="checkbox"/> \$50 bench fee may be applied towards repair cost of unit or towards a new controller

- c. Extended warranty on repair goods will be offered only when the repairs were made by the factory on non-warranty units.
 - i. Microprocessor Controls – 1 year from date of shipment
 - ii. Electronic Controls – 6 months from date of shipment (excluding electronic parts)
 - iii. Standard metering pumps – 3 months from date of shipment

Policies and Procedures continued

5. Credit for Return of New, Unused Equipment

- a. No equipment will be accepted beyond six months after date of shipment from factory for credit.
- b. Only new, unused and undamaged standard equipment will be accepted for return to stock.
- c. 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 acknowledgement will be refused by our receiver.
- d. 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.
- e. A request for a Returned Material Authorization (RMA) number must be made prior to returning product to Pulsafeeder.
- f. All equipment shall be returned with the RMA Packing List form attached to the outside of the box.
- g. 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.
- h. All material shall be returned freight prepaid.
- i. Private label products or Engineered Panel Mount Systems are not returnable.

6. 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.

7. 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.

8. Damaged Items

- a. Should the customer receive an order that was damaged in transit, the customer must notify the carrier directly to initiate a claim on the day of delivery.
- 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.

9. 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.*
- b. Scope
Pulsafeeder, Inc. factory Field Service Technicians are available throughout the World for field services on all Pulsafeeder products. Services include:
 - i. Maintenance Training Seminars, including Classroom slide presentations and or Hands-on Training. The seminar will take approximately four to five hours, and if time permits minor repair and or adjustments may be made to the customer's pumps, controllers or accessories.
 - ii. Pre-start up inspections and start up testing/calibration of pumps, controllers and accessories.

Fee Schedule	Service Rate ⁽¹⁾
Field Repairs and Start-ups	
Normal 8 hour day	□98.00/hour
Overtime (in excess of 8 hrs, each day)	□148.00/hour
Sundays, National Holiday	□195.00/hour
Travel time to job site and return	□87.00/hour
Travel expenses (air fare, hotel, car and meals)	Chargeable to customer at cost
Minimum charge	4 hours labor, plus travel time and expenses
End User Training Seminars	
Normal work day	□750.00/day plus expenses (air fare, car rental, hotel and meals at cost)
Sundays, National Holiday	□1495.00/day plus expenses (air fare, car rental, hotel and meals at cost)

- iii. Field repairs of pumps controllers and accessories
- iv. Diagnosing and recommending solutions to systems problems.

⁽¹⁾ All rates listed in this section are actual hourly and daily rates, not reference rates

Terms & 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 up on 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 up on Purchaser and Seller, and on their successors and assigns.
- 2 . PROPOSAL OR QUOTATION. A proposal shall not become binding up on 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.
- 3 . 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.
- 4 . 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.
- 5 . 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.
- 6 . 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.
- 7 . 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.
- 8 . CANCELLATION. If Purchaser desires to cancel or change any portion of this Contract, he 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 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.
- 9 . 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.
- 10 . 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.
- 11 . 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.
- 12 . 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.
- 13 . TITLE. Title to products transfers up on delivery to Purchaser at the F.O.B. point of delivery which will be clearly set forth in the shipment terms of this Contract. On receipt of title, 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.
- 14 . 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 F.O.B. terms of the Contract. 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.
- 15 . 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.
- 16 . 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 salability of products accepted in opinion of Seller.
- 17 . 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.
- 18 . 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.
- 19 . LAW . This order shall be governed by and shall be construed by the law of the State of New York .
- 20 . 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.
- 21 . 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 thereunder. 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.

NOTES

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The Pulsafeeder logo features a stylized six-pointed star icon to the left of the word "PULSAFEEDER" in a bold, italicized, sans-serif font. The background of the entire page is a light gray with large, overlapping, semi-transparent geometric shapes in shades of blue and gray, creating a modern, industrial aesthetic.

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