Heat Transfer Systems

November 15, 2013

Project:	Mary Lin Elementary Renovation/Addition
Contractor:	Addison Smith Mechanical Contractors, Inc.
Engineer:	AHA Consulting Engineers
Products:	EVAPCO Cooling Tower Sondex Plate and Frame Heat Exchanger PEP Centrifugal Separator HTS Tower Accessories
Specification:	23 6500 Cooling Towers 23 5700 Heat Exchangers for HVAC
Supplier:	Heat Transfer Systems 333 North Main Street Alpharetta, GA 30009 (770) 475-7740

Georgia Office
333 North Main Street
Alpharetta, Georgia 30009
770-475-7740

Florida Office
P. O. Box 15339
Fernandina Beach, Florida 32035
904-310-9280

TOLL FREE 877-475-7740
eFAX 877.649.0035
www.coolingtower.net

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EVAPCO, INC.
P.O. Box 1300
Westminster, Maryland 21158, USA

Telephone (410) 756-2600
FAX (410) 756-6450

DATE November 11, 2013

SUBMITTAL APPROVAL REQUIRED For EQUIPMENT RELEASE

Customer: Addison Smith Mechanical Contractors, Inc.

Project: Mary Lin Elementary

EVAPCO Serial Number: 13-655764

Model Number: (1) LPT-566 Cooling Tower

	INITIALS	DATE	REQUESTED SHIP DATE
Approved for Release as Submitted			
Approved for Release with Changes as Noted			
Not Approved as Noted			

EVAPCO, INC.
P.O. Box 1300
Westminster, Maryland 21158, USA

Telephone (410) 756-2600
FAX (410) 756-6450

November 11, 2013

Addison Smith Mechanical Contractors, Inc.
110 Kingsbridge Road
P.O. Box 887
Carrollton, GA 30117

RE: Purchase Order No. 31554
EVAPCO Order No. 13-655764
(1) LPT-566 Cooling Tower
Project: Mary Lin Elementary

Dear Sir:

Please find the enclosed certified submittal data for the above referenced order.

We look forward to receiving submittal approval and release for production in the near future. If you have not already done so please forward a copy of your purchase order along with your approved submittals.

If we may be of any further assistance please contact your local EVAPCO representative, Heat Transfer Systems, Inc. (HVAC), as soon as possible.

We thank you for your interest in EVAPCO and look forward to being of service to you.

Sincerely,

EVAPCO, INC.

Robert B. Becker
Robert B. Becker
Senior Marketing Engineer

ENCLOSURE(S)
cc: Heat Transfer Systems, Inc. (HVAC) - Dan Kelly

November 12, 2013

EVAPCO® SUBMITTAL PACKAGE

PROJECT MARY LIN ELEMENTARY UNIT (1) LPT-566 COOLING TOWER

CUSTOMER ADDISON SMITH MECHANICAL P.O. 31554

EVAPCO SERIAL NO. 13-655764 ENGINEER AHA CONSULTING ENGINEERS

SUBMITTAL DATA ENCLOSED

DESCRIPTION	DOCUMENT NUMBER
PERFORMANCE AND MECHANICAL SPECIFICATIONS	LRT5ST-ST
UNIT CERTIFIED DRAWING	TV05062F-DRD-012
STEEL SUPPORT CONFIGURATION	SLAL0506DA
VERTICAL LADDER	LDTV0506ERA-07
VIBRATION SWITCH (SINGLE SPEED)	V1AU0000-EE
CERTIFICATE OF COMPLIANCE	IBCFDCOC001.pdf
GUARANTEE OF THERMAL PERFORMANCE	AOS2636

EVAPCO…TAKING QUALITY AND SERVICE TO A HIGHER LEVEL!

Date 11/11/2013

PERFORMANCE AND MECHANICAL SPECIFICATIONS

EVAPCO® COOLING TOWERS

PROJECT	Mary Lin Elementary		
CUSTOMER	Addison Smith Mechanical Contractors, Inc.		
ENGINEER	AHA Consulting Engineers		
UNIT:	(1) LPT-566 Cooling Tower		
CUSTOMER P.O.	31554	**EVAPCO SERIAL NO.**	13-655764
CAPACITY	234 GPM	95 °F IN / 85 °F OUT	78 °F E.W.B.
FAN MOTOR:	(1) 7.5 HP	**ELEC. SPEC.**	460/3/60
INLET PRESSURE:	2.4 PSIG	**DRIVES SIZED FOR 0" ESP.**	

UNIT TYPE	Factory-assembled, counterflow blow-through.
PAN FAN SECTION	Cold water basin constructed of Type 304 Stainless steel. All galvanized steel is coated with a minimum of 2.35 ounces of zinc per square foot of area (G-235 designation). Pan-Fan section includes centrifugal fans and drives mounted and aligned at the factory. All fan components are located in the dry entering air stream. During fabrication, all panel edges are coated with a 95% pure zinc-rich compound.
IBC COMPLIANCE	The unit structure has been designed, analyzed, and constructed in accordance with the latest edition of International Building Code (IBC) Regulations for seismic up to 1g and wind loads up to 60psf.
MAKE UP FLOAT VALVE ASSEMBLY*	Brass float valve with adjustable, unsinkable, foam-filled plastic float.
PAN STRAINER*	All type 304 stainless steel with large area removable perforated screens.
FAN DISCHARGE COWLS	G-235 hot-dip galvanized steel cowls provided on each fan discharge extending within the pan to increase fan efficiency and prevent water from entering fans.
ACCESS	One (1) G-235 hot-dip galvanized steel circular access door held in place by wingnuts.
FAN WHEELS	Fan is forwardly curved centrifugal type of hot-dip galvanized steel factory installed into the pan/fan section. They are statically and dynamically balanced for vibration free operation. Fan housings have compound curve inlet rings for efficient air entry.
FAN SHAFT BEARINGS	Solid shaft of ground and polished steel. Exposed surface coated with rust preventative. Fan shaft is supported by heavy-duty, self-aligning bearings with cast iron housings and lubrication fittings for maintenance.

FAN MOTOR	**Totally enclosed, ball bearing type electric motor(s) suitable for moist air service. Motor(s) are Premium Efficient, Class F insulated, 1.15 service factor design. Inverter rated per NEMA MG1 Part 31.4.4.2 and suitable for variable torque applications and constant torque speed range with properly sized and adjusted variable frequency drives.**
FAN DRIVE	**V-belt type with taper lock sheaves. Selected for 150% motor nameplate horsepower.**
FAN END INLET SCREEN	**Hot-dip galvanized steel screens, 1" wire mesh.**
FILL	**Polyvinyl chloride (PVC) of cross-fluted design. PVC sheets are bonded together for strength and durability. Fill is self-extinguishing for fire resistance, has a flame spread of 5 under A.S.T.M. designation E-84-81a, and is resistant to rot, decay and biological attack.**
WATER DISTRIBUTION SYSTEM	**Precision molded ABS spray nozzles with large 1" x 3/8" orifice and internal sludge ring to eliminate clogging. Spray header and branches are Schedule-40 Polyvinyl Chloride for corrosion resistance with steel connection to attach external piping. Spray header branches are removable and are equipped with threaded end caps.**
FAN SIDE INLET SCREEN	**PVC coated radial screens.**
HEAT TRANSFER CASING CONSTRUCTION	**G-235 hot-dip galvanized steel panel construction, separable from pan section.**
ELIMINATORS	**The eliminators are constructed entirely of Polyvinyl Chloride (PVC) in easily handled sections. Design incorporates three changes in air direction and limits the water carryover to a maximum of 0.001% of the circulating water rate.**
PASSIVATION	**All evaporative cooling equipment utilizing galvanized construction requires initial passivation to maximize the service life of the equipment. The sites water treatment vendor should be contacted several weeks prior to adding any water to the system to provide a passivation plan along with associated passivation plan costs.**

***OMITTED ON UNITS FOR REMOTE SUMP OPERATION**

SPECIAL REMARKS:

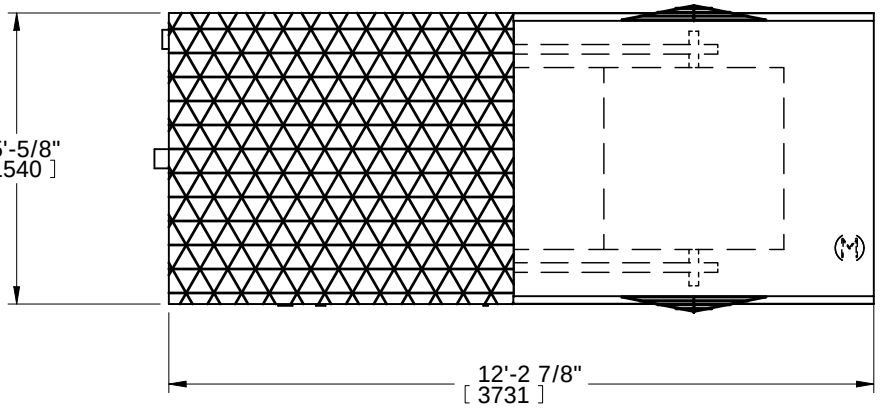
- **3 ft extension(s) provided with ladder(s).**
- **Unit provided with vibration cutout switch(es), mounted (wiring and sensitivity adjustment by others).**
- **Unit(s) provided with ladder(s).**
- **IBC Compliant up to 1g.**
- **(1) 3 in Hole(s) for BH (by others).**
- **(1) 3 in Hole(s) for LWCO (by others).**

EVAPCO, INC.

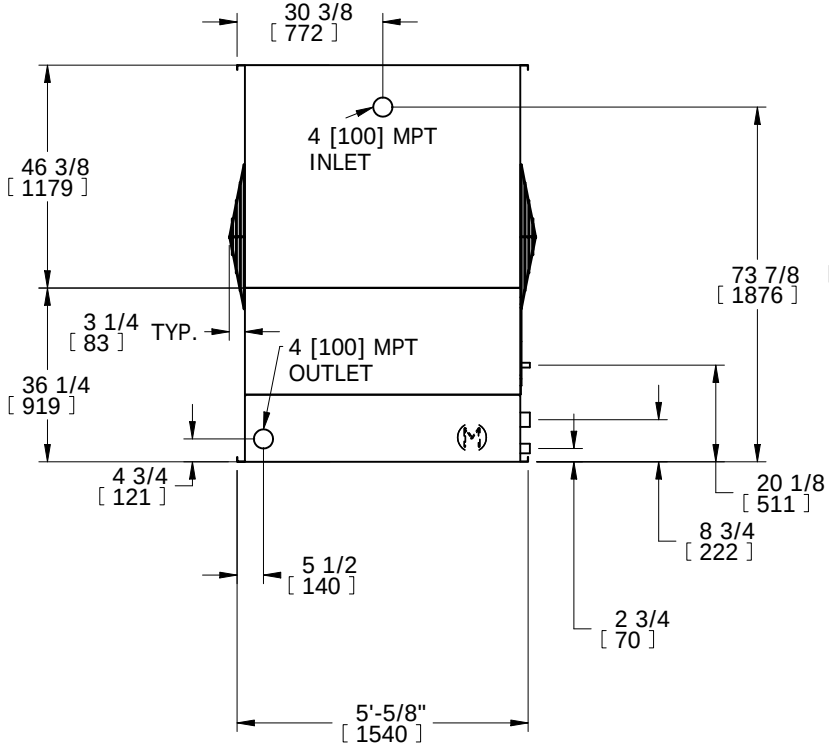
UNIT	MODEL #	SCALE	DWG. #	REV.	DATE	SERIAL #
COOLING TOWER	LPT-566	NTS	TV05062F-DRD-012	-	11/11/13	13-655764

NOTES:
1. (M)- FAN MOTOR LOCATION
2. MPT DENOTES MALE PIPE THREAD
   FPT DENOTES FEMALE PIPE THREAD
   BFW DENOTES BEVELED FOR WELDING
   GVD DENOTES GROOVED FOR VICTAULIC
3. + UNIT WEIGHT DOES NOT INCLUDE ACCESSORIES (SEE SEPARATE DRAWINGS FOR ACCESSORIES)
4. 3/4" DIA. MOUNTING HOLES. REFER TO RECOMMENDED STEEL SUPPORT DRAWING
5. MAKE-UP WATER PRESSURE-20 psi MIN, 50 psi MAX

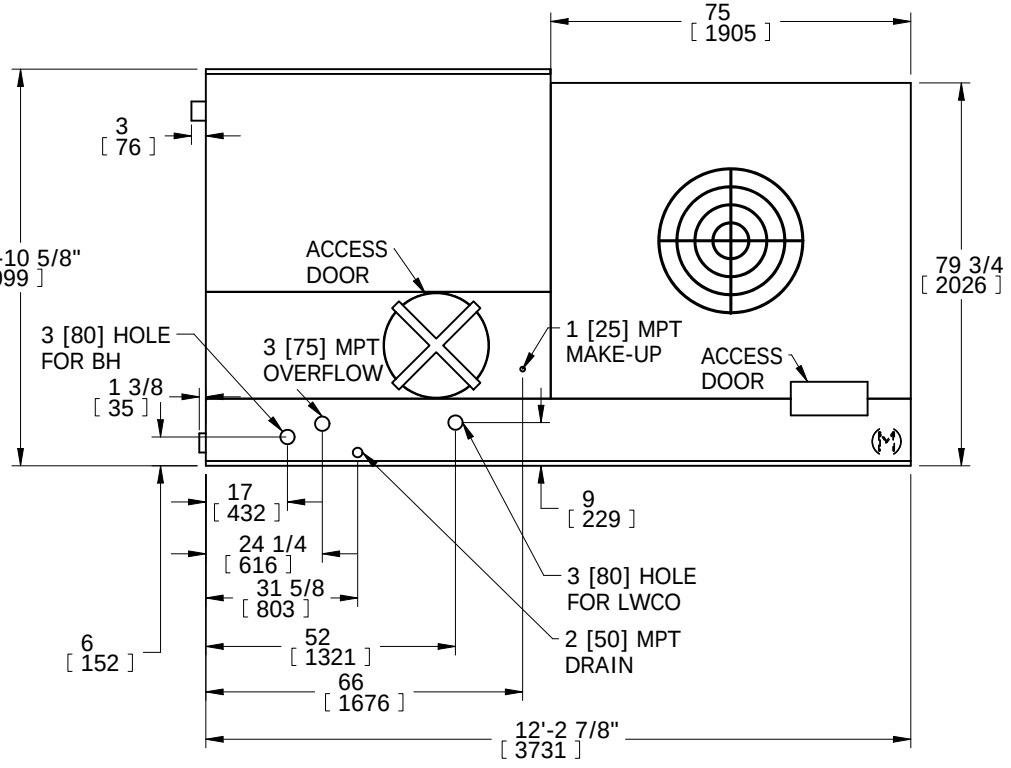
FACE 2
PLAN VIEW



FACE 1



FACE 2

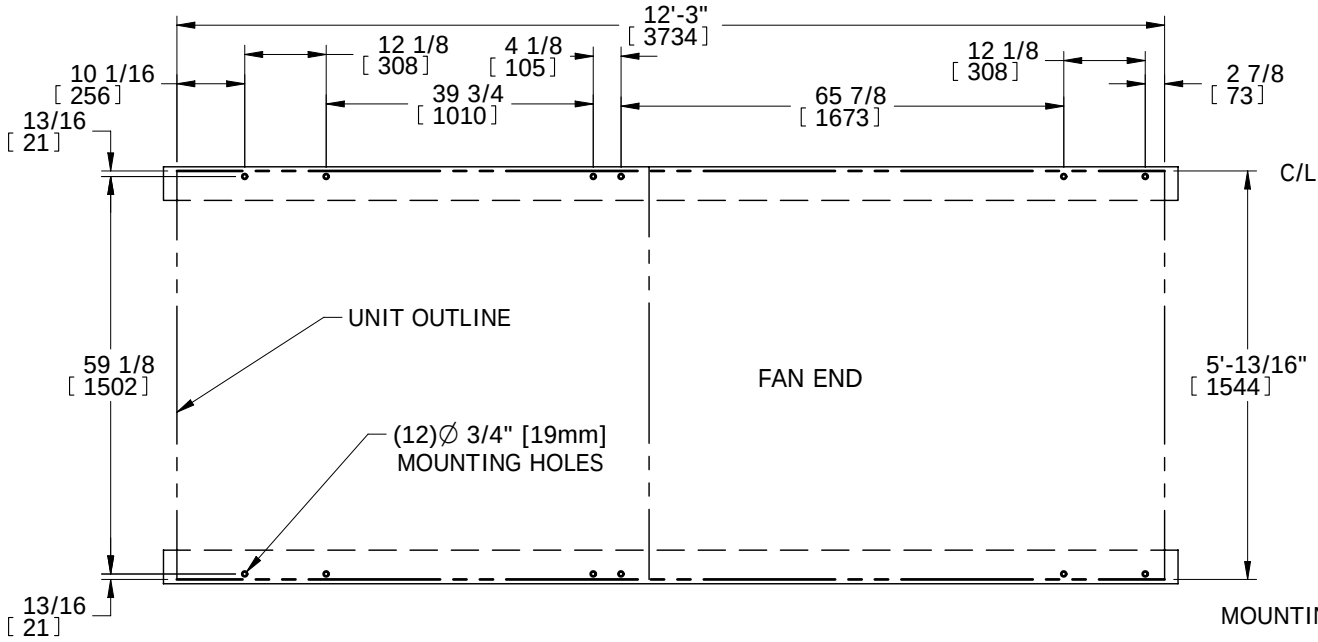


FACE 1

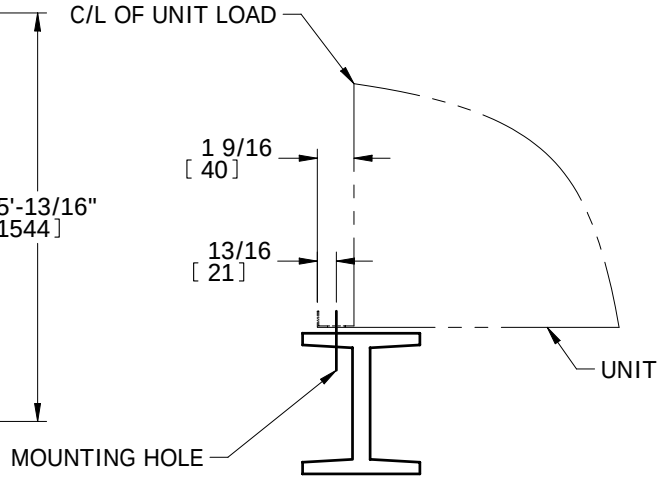
SHIPPING WEIGHT	2400 lbs+ [1089] kg+	OPERATING WEIGHT	4120 lbs+ [1869] kg+	HEAVIEST SECTION WEIGHT	2400 lbs+ [1089] kg+	NO. OF SHIPPING SECTIONS	1

EVAPCO, INC.

TITLE	UNIT:	DWG. #
STEEL SUPPORT CONFIGURATION	5X6 FORCED DRAFT LR/LP UNITS	SLAL0506-DA



PLAN VIEW



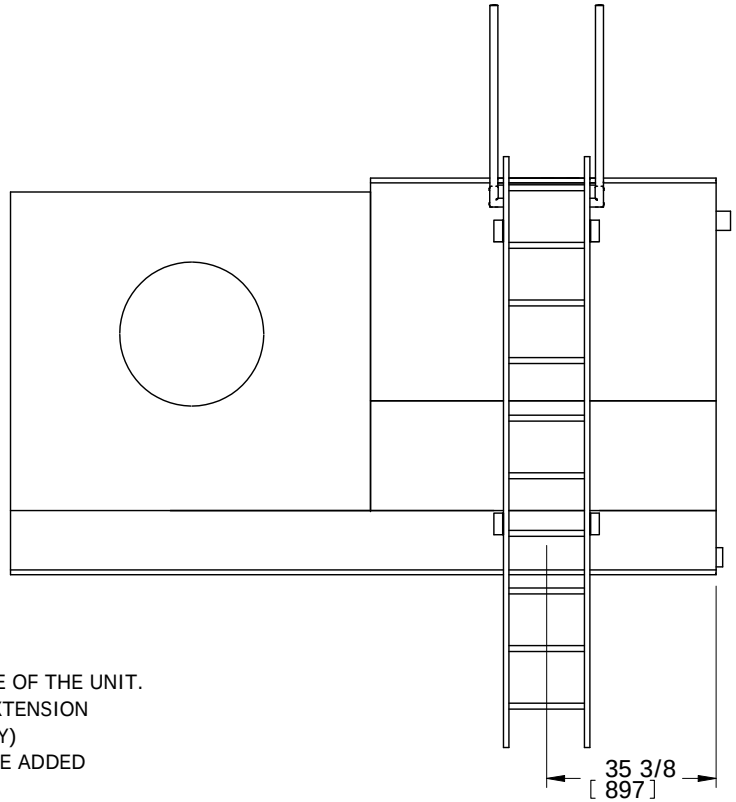
TYPICAL END VIEW

NOTES:

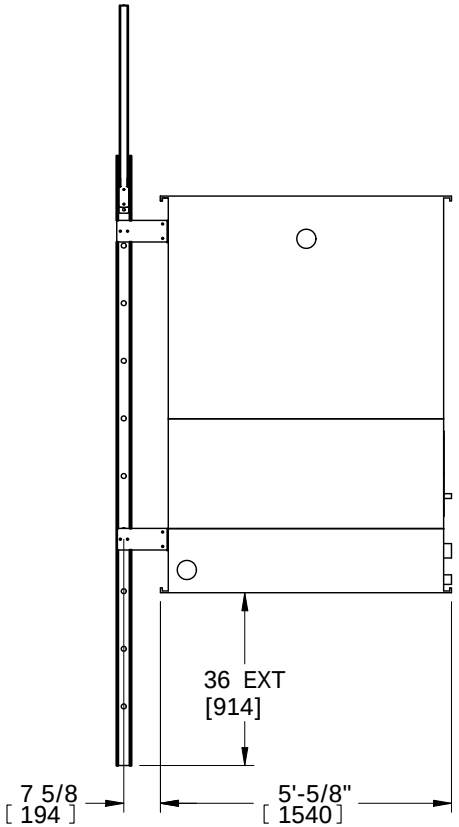
1. BEAMS SHOULD BE SIZED IN ACCORDANCE WITH ACCEPTED STRUCTURAL PRACTICES. MAXIMUM DEFLECTION OF BEAM UNDER UNIT TO BE 1/360 OF UNIT LENGTH NOT TO EXCEED 1/2" [13mm].
2. DEFLECTION MAY BE CALCULATED BY USING 55% OF THE OPERATING WEIGHT AS A UNIFORM LOAD ON EACH BEAM. SEE CERTIFIED PRINT FOR OPERATING WEIGHT.
3. SUPPORT BEAMS AND ANCHOR HARDWARE ARE TO BE FURNISHED BY OTHERS. ANCHOR HARDWARE TO BE ASTM - A325 5/8" [16mm] BOLT OR EQUIVALENT.
4. BEAMS MUST BE LOCATED UNDER THE FULL LENGTH OF THE PAN SECTION.
5. SUPPORTING BEAM SURFACE MUST BE LEVEL. DO NOT LEVEL THE UNIT BY PLACING SHIMS BETWEEN THE UNIT MOUNTING FLANGE AND THE SUPPORTING BEAM.
6. ANCHORING ARRANGEMENT SHOWN HAS A MAXIMUM WIND RATING OF 145 PSF [6.96 KPa] ON CASED VERTICAL SURFACES.
7. THE FACTORY RECOMMENDED STEEL SUPPORT CONFIGURATION IS SHOWN. CONSULT THE FACTORY FOR ALTERNATE SUPPORT CONFIGURATIONS.
8. UNIT SHOULD BE POSITIONED ON STEEL SUCH THAT THE ANCHORING HARDWARE FULLY PENETRATES THE BEAM'S FLANGE AND CLEARS THE BEAM'S WEB.

EVAPCO, INC.

TITLE	UNIT:	DWG NO:
VERTICAL LADDER INSTALLATION PACKAGE	5X6 LR/LP FORCED DRAFT UNITS	LDTV0506ERA-07



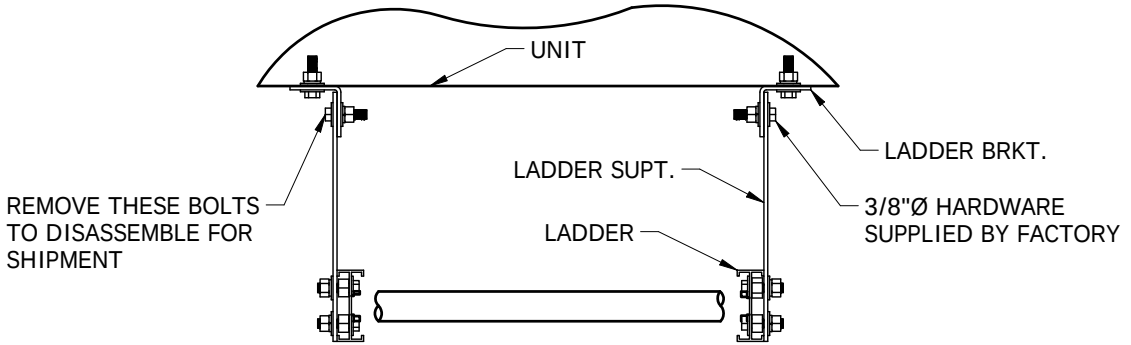
OPP FACE 1



FACE 2

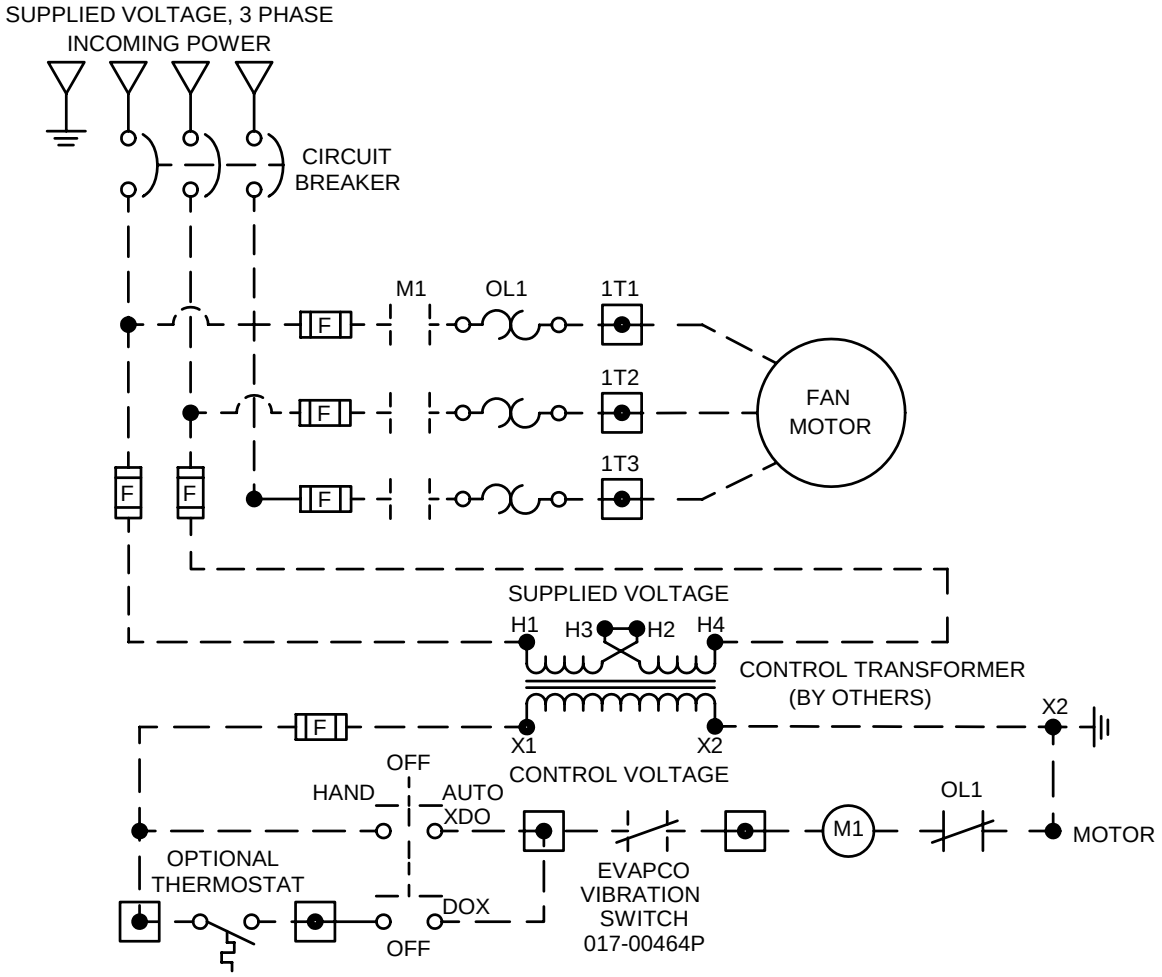
* THE BOTTOM OF THE LADDER IS AT THE BASE OF THE UNIT.
IF THE UNIT IS ELEVATED THEN A LADDER EXTENSION SHOULD BE CONSIDERED. (CONSULT FACTORY)
LADDER EXTENSIONS OF UP TO 3 FEET CAN BE ADDED WITHOUT ANY ADDITIONAL SUPPORT.
FOR A LADDER EXTENSION LONGER THAN 3 FEET ADDITIONAL SUPPORT MUST BE PROVIDED BY OTHERS.

NOTES:
1. THE VERTICAL LADDER IS AN INDUSTRIAL GRADE.
2. THE LADDER SHIPS LOOSE FOR FEILD INSTALLATION BY OTHERS.
3. SEE MOUNTING ARRANGEMENT DETAILS AS SHOWN.
4. THE LADDER AND DESIGNS FALL UNDER OSHA REQUIREMENTS.



EVAPCO, INC.

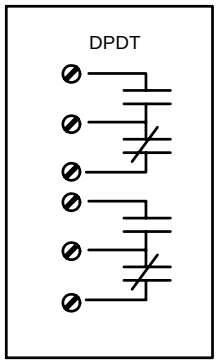
TITLE	DESCRIPTION:	DWG. #
VIBRATION SWITCH	SINGLE SPEED	V1AU0000-EE



SWITCH CONTACT RATING:

15 AMPS, 125, OR 480 Vac; 1/8 HP, 125 Vac; 1/4 HP, 250 Vac; 1/2 AMP, 125 Vdc; 1/4 AMP, 250 Vdc.

WIRING DIAGRAM:



NOTES:

1. DASHED LINES INDICATE WIRING(BY OTHERS)

ADJUSTMENT

ADJUST THE SWITCH SO THAT DURING FULL SPEED START-UP AND UNDER NORMAL CONDITIONS, THE CONTACTS DO NOT TRIP. FIRST, WITH THE MOTOR OFF, TURN THE ADJUSTMENT SCREW COUNTER-CLOCKWISE (MORE SENSITIVE DIRECTION) UNTIL THE SWITCH TRIPS. NEXT, TURN THE ADJUSTMENT SCREW CLOCKWISE 1/8 TURN (LESS SENSITIVE DIRECTION). RESET THE SWITCH BY DEPRESSING THE PUSH-BUTTON RESET LOCATED ON TOP OF THE SWITCH. START THE MOTOR ON FULL SPEED. IF THE MOTOR TRIPS THE SWITCH, THEN TURN THE ADJUSTMENT SCREW CLOCKWISE AN ADDITIONAL 1/8 TURN. RESET THE SWITCH AND START THE MOTOR AGAIN. REPEAT THE ABOVE PROCEDURE UNTIL THE MOTOR CONTINUES TO RUN.

Certificate of Compliance

LSTE, LPT, PMTQ Cooling Towers
PMWQ, LSWE, LRWB Closed Circuit Coolers
eco-PMC, PMC-E, LSC-E and LRC Evaporative Condensers

Are certified to meet or exceed the Seismic and Wind Load Provisions set forth in the applicable building codes for this project.

These products have been manufactured following all applicable quality assurance programs.

Applicable Building Codes:
IBC 2012
ASCE-7
NFPA 5000

Referenced Report:
VMA-43387

Approval Agency:
VMC Seismic Consulting Group

THE VMC GROUP
The Power of Together

EVAPCO...Specialists in Heat Transfer Products and Services.

FD IBC COC 001

Guarantee of Thermal Performance

EVAPCO® unequivocally guarantees the thermal performance of its equipment as shown on the certified drawings, when the equipment is installed in accordance with good engineering practice. If after installation and start-up there is any question regarding thermal performance of the equipment, at the owner's request EVAPCO will send its engineers to the jobsite to conduct a performance test. This test may be observed by the owner and the consulting engineer or by their authorized representatives. If the results of the evaluation show the equipment to be deficient, EVAPCO will make the necessary repairs or alterations to correct the deficiency at no cost to the owner. If the equipment is found to be performing in accordance with its certified drawing, the owner is expected to reimburse the company for its costs associated with this performance test. This guarantee is subject to all conditions and limitations set forth in the express warranty that applies to the equipment.

EVAPCO...Specialists in Heat Transfer Products and Services.

Heat Transfer Systems

June 7, 2013

Centrifugal Separator

Georgia Office
333 North Main Street
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Amiad USA Ltd.
120-J Talbert Road
Mooresville, NC 28117

Tel: 704.662.3133
Fax: 704.662.3155

E-mail: info@amiadusa.com
Web: www.amiadusa.com

Project: Mary Lin Elementary

Equipment: ICS2-TCP-50GPM

Amiad Rep: Heat Transfer Systems

Serial Number: 40798

11/9/2013

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120-J Talbert Road
Mooresville, NC 28117

Tel: 704.662.3133
Fax: 704.662.3155

E-mail: info@amiadusa.com
Web: www.amiadusa.com

Amiad so40798
Mary Lin Elementary

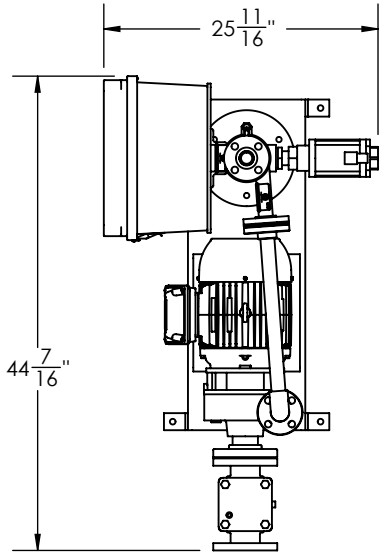
ICS2-TCP-50GPM Filter

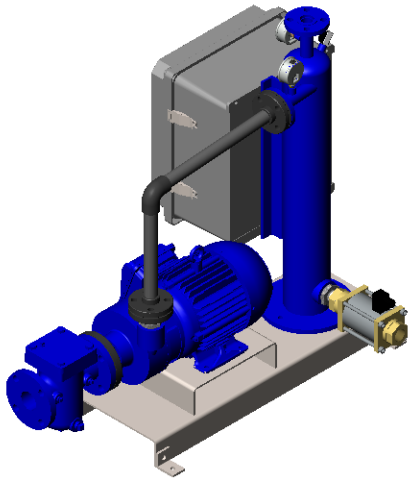
ICS InterSeptor Series Centrifugal Separator

* Carbon steel construction with an exterior epoxy coating
* Designed operating flow of 50 gpm with a 3 to 10 psig pressure drop across the inlet and outlet
* 150 psi maximum operating pressure
* Separator has 1" flanged inlet/outlet connections
* Schedule 80 PVC face piping
* 2.5" diameter liquid filled inlet/outlet pressure gauges; stainless steel case
* High-Head 3 hp 460/3/60 TEFC close-coupled standard fitted pump-motor with cast iron pre-strainer and 304 stainless steel strainer basket (50 gpm @ 70' TDH – Scot 19GN)
* Fail Safe Auto Purge Kit; includes a coaxial purge valve with adjustable purge interval and duration
* UL Listed, NEMA 4X control panel with Unitronics PLC, lockable disconnect switch, thermal overload protection for pump-motor and step-down transformer for auto-purge control voltage
* Factory wired for single point connection to power source
* Field adjustable purge interval from 0.24 to 24 hours; field adjustable purge duration from 0.6 to 60 seconds
* HOA switch
    "H" - Local setting – continuous purge
    "O" - Off setting - auto-purge will be disabled
    "A" - Auto setting - automatic purge based on PLC setting
* Filter assembly is skid mounted on a 304 stainless steel c-channel base
* The system is factory pre-wired, pre-piped, and tested prior to shipping

AMIAD FILTOMAT ARKAL PEP

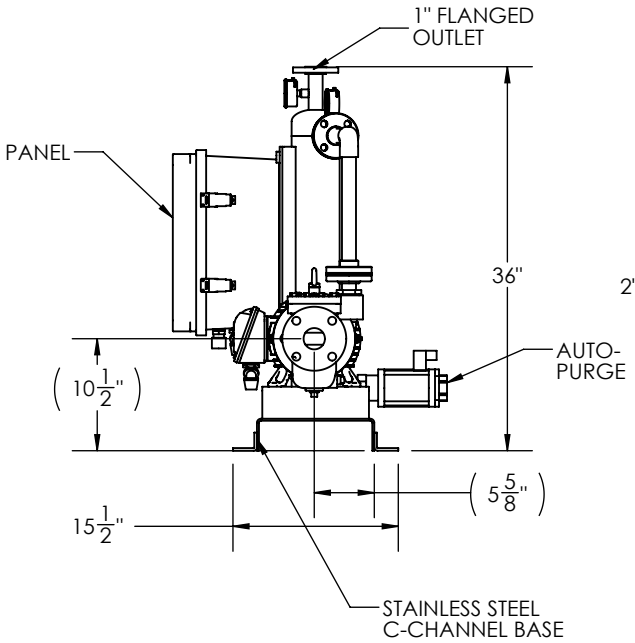
Assembly Drawing / Electrical Drawing

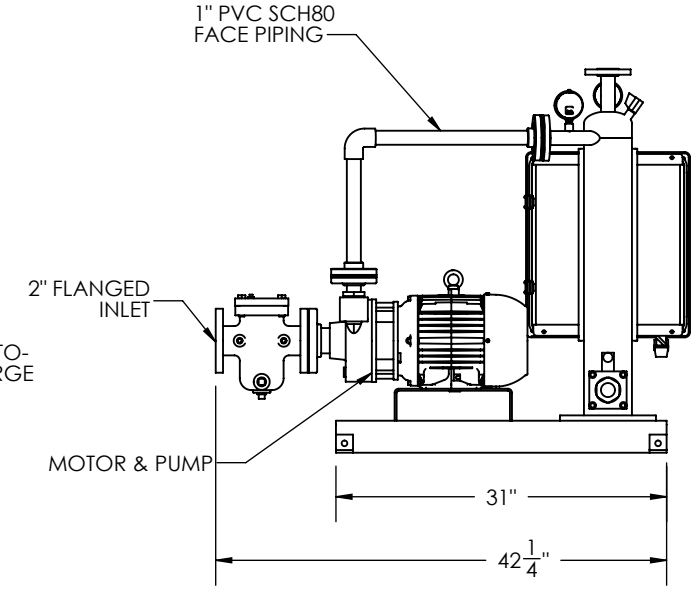




NOTES

1) ALL DIMENSIONS GIVEN IN INCHES UNLESS OTHERWISE SPECIFIED.
2) MAX OPERATING PRESSURE: 150 PSI
3) TANK CONSTRUCTION: CARBON STEEL
4) EXTERIOR: EPOXY COATED
5) APPROXIMATE MASS: 312 LBS



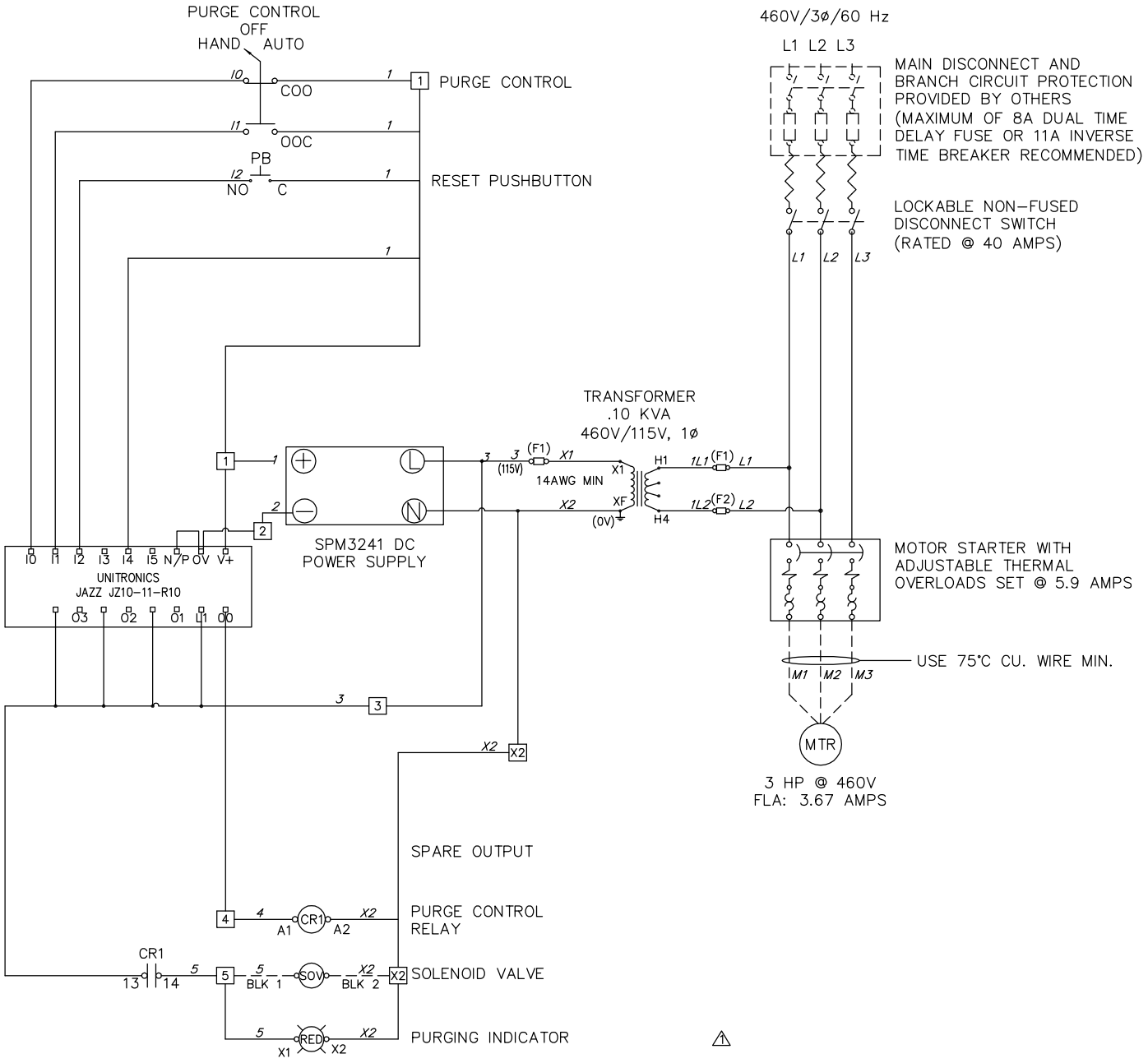


NO.	REVISION NOTES	DATE	BY

amiad® WATER SYSTEMS
120-J TALBERT ROAD
MOORESVILLE, NC 28117
PH: (704) 662-3133
FAX: (704) 662-3155

DRAWING DATE: 8/20/2013	DRAWING TITLE: ICS2 0100 CS TANK WITH FACE PIPING AND PUMP
SCALE: 1:18	DRAWING NUMBER: **200103-000010 ASY-0100LFHH**
SHEET 1 OF 2	
DRAWN BY: BJH	CAT NUMBER: 200103-000010 — REV. NO. 0
CHECKED BY: ___	GENERAL TOLERANCES (EXCEPT AS NOTED): ANGULAR ± 1° FRACTIONAL ± 1/8" Dec: 2 Pl ± 0.05", 3 PL ± 0.010"
APPROVED. BY:___	

Printed: 8/20/2013 @ 3:42 PM



GENERAL INFORMATION

	DESIGN CODE:	UL STANDARD 508A
POWER	VOLTAGE	460 VOLTS
	TOTAL FLA	4.17 AMPS
	# OF PHASES	3 ø
	FREQUENCY	60 HERTZ
	LARGEST MOTOR	3 HP
	SHORT CIRCUIT CURRENT	5 kA RMS SYMMETRICAL, 480 V MAX.
ENCLOSURE	SIZE	16"H x 14"W x 8"D
	UL RATING	TYPE 4X
	MATERIAL	FIBERGLASS
FUSES	PRIMARY (F1, F2)	FERRAZ SHAWMUT CL. CC, ATDR 1/2 OR EQUIVALENT
	SECONDARY (F3)	FERRAZ SHAWMUT TRI-ONIC, TRM 1 OR EQUIVALENT

NOTES

1) GROUND PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250. ———
2) PANEL WIRING: – – – – – – – –
SHOP WIRING: ∿∿∿∿∿∿∿∿
CUSTOMER'S WIRING: ——–——–——
FACTORY INSTALLED JUMPER:
3) USE COPPER WIRE RATED 60°C MINIMUM UNLESS OTHERWISE SPECIFIED. USE COPPER WIRE RATED 75°C AT THE SERVICE ENTRANCE.
4) DISCONNECT SWITCH TORQUE REQUIREMENTS: 35 LB IN. CONTACTOR/OVERLOAD TORQUE REQUIREMENTS: 7–10 LB IN.
5) SIZE THE MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION PER 2011 NATIONAL ELECTRIC CODE ARTICLE 430.
6) WHEN THE SELECTOR SWITCH IS IN:
HAND: THE PURGE CYCLE IS CONTINUOUS.
AUTO: PURGE OCCURS ACCORDING TO THE TIMER SETTINGS.
OFF: THE PURGE FUNCTION IS DISABLED.

WARNING
Risk of Fire or Electric Shock
The opening of the branch circuit protective device may be an indication that a fault current has been interrupted. All current-carrying parts and other components protected by this device should be examined and replaced if damaged. If burnout of a current element of an overload relay occurs, the complete overload relay must be replaced.

amiad WATER SYSTEMS
120-J TALBERT ROAD
MOORESVILLE, NC 28117 USA
(704) 662-3133 FAX (704) 662-3155

NO.	DATE	NOTES	BY
1	09/26/2013	REMOVED BAG CONTACTS	JTE

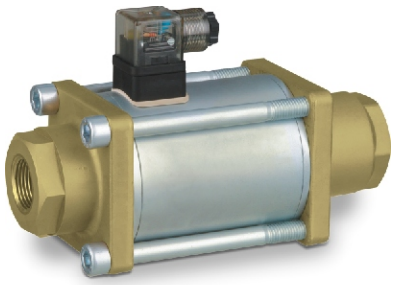
GENERAL REVISIONS

DRAWING DATE: 08/19/2013	DRAWING TITLE: PANEL-3 HP R10 PLC WEG 460-3-60
SCALE: 1" = 1"	DRAWING NUMBER: 200103-000010-ELC
SHT. 1 of 2	REV. NO. 1
DRAWN BY: JTE	CATALOG NUMBER: 200103-000010
CHKD BY: ---	GENERAL TOLERANCES (EXCEPT AS NOTED)
APP. BY: ---	ANGULAR ±1° FRACTIONAL ± 1/8" DEC: 2PL±0.05", 3PL±0.010"

2-Way Coaxial Auto Purge Valve

CXD 2/2-way coaxial valve

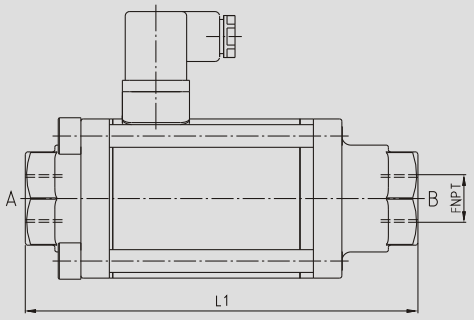
nominal specifications	CXD 2/2-way coaxial valve
2/2-way valve	direct acting / solenoid
pressure range	0-600 psi
connection	FNPT threads
function	NC - normally closed
	NO - normally open
design	pressure balanced, with spring return
body materials parts in contact with media	brass, stainless steel
seal materials seat / dynamic / static	FPM / PTFE / FPM customer to verify seal / seat compatibility with media
media	gaseous-liquid-gelatinous-highly viscous-contaminated
electrical connection	PG 9, plug acc. DIN EN 175301-803 form A, LED

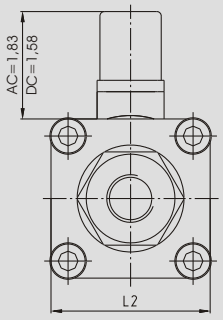


technical data	CXD 10	CXD 15	CXD 20	CXD 25
orifice mm	DN 10	DN 15	DN 20	DN 25
port connection threads	FNPT 3/8	FNPT 1/2	FNPT 3/4	FNPT 1
Cv A ⇨ B	2.5	6.0	8.6	14.0
media temperature	-4 °F to +212 °F	-4 °F to +212 °F	-4 °F to +212 °F	-4 °F to +212 °F
ambient temperature	-4 °F to +140 °F	-4 °F to +140 °F	-4 °F to +140 °F	-4 °F to +140 °F
operating time opening / closing	45 ms / 70 ms	60 ms / 130 ms	105 ms / 150 ms	150 ms / 190 ms
vacuum leak rate	$< 10^{-4}$ mbar·l·s^{-1}	$< 10^{-4}$ mbar·l·s^{-1}	$< 10^{-4}$ mbar·l·s^{-1}	$< 10^{-4}$ mbar·l·s^{-1}
flow direction	A ⇨ B	A ⇨ B	A ⇨ B	A ⇨ B
	B ⇨ A (P 180 psi max.)	B ⇨ A (P 180 psi max.)	B ⇨ A (P 180 psi max.)	B ⇨ A (P 180 psi max.)
nominal voltage	DC 24 V / AC 110 V	DC 24 V / AC 110 V	DC 24 V / AC 110 V	DC 24 V / AC 110 V
current consumption	DC 1.45 A / AC 0.36 A	DC 2.1 A / AC 0.41 A	DC 2.2 A / AC 0.56 A	DC 2.5 A / AC 0.62 A
insulation class	H	H	H	H
enclosure protection	IP 65	IP 65	IP 65	IP 65
energized duty rating	ED 100%	ED 100%	ED 100%	ED 100%
length L1 / L2	5.71 in / 1.97 in	6.81 in / 2.76 in	7.60 in / 3.15 in	8.35 in / 3.54 in
length L3 / L4	- / -	- / -	- / -	- / -
weight	3.75 lb	8.16 lb	11.90 lb	15.65 lb

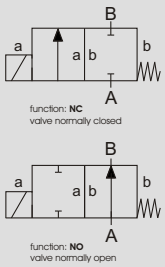
accessories optional	order-codes			
mounting brackets stainless steel	123555	123556	123557	123558
limit switch Reed AC / DC 10-30 V	- / -	- / -	- / -	- / -

drawings

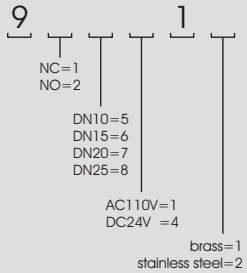




circuit symbols



valve order-code



co-ax valves inc. • 10 Noeland Avenue • USA-Penndel, PA 19047-5259 • Tel 215-757-3725 • Fax 215-757-4060 • Email info@cx-tec.us

Unitronic Jazz PLC

JZ10-11-R10	**6 Digital Inputs, 4 Relay Outputs**
JZ10-11-R16	**6 Digital, 2 Analog/Digital, 2 Analog Inputs, 6 Relay Outputs**

Micro-OPLC Technical Specifications

Power supply

Input voltage	24VDC	
Permissible range	20.4VDC to 28.8VDC with less than 10% ripple	
Current Consumption	See Note 1	
	JZ10-11-R10	JZ10-11-R16
Max. current consumption	120mA@24VDC	136mA@24VDC
Typical power consumption	2.4W	2.6W

Notes:

1. To calculate the actual power consumption, subtract the current for each unused relay output and LCD backlight (if unused) from the maximum current consumption value.

	Per relay output	LCD backlight
Max. current per element	8.3mA@24VDC	35mA@24VDC

Digital Inputs

Number of inputs	JZ10-11-R10	JZ10-11-R16
	6 (one group) – see Note 2	8 (two groups) – see Notes 2 & 3
Input type	pnp (source) or npn (sink)	
Galvanic isolation	None	
Nominal input voltage	24VDC	
Input voltage		
pnp (source)	0-5VDC for Logic '0' 17-28.8VDC for Logic '1'	
npn (sink)	17-28.8VDC for Logic '0' 0-5VDC for Logic '1'	

	I0-I5	I6-I7
Input current	3.7mA@24VDC	1.2mA@24VDC
Response time	10mSec typical	20mSec typical

Input cable length	Up to 100 meters, unshielded
High speed inputs	Specifications below apply when wired as H.S.C. See Note 4.
Resolution	16-bit
Frequency	5kHz maximum
Minimum pulse width	80µs

Notes:

2. Both JZ10-11-R10 and JZ10-11-R16 comprise I0-I5; these inputs are arranged in a single group. Via wiring, the entire group may be set to either pnp or npn.
3. Only JZ10-11-R16 comprises I6 & I7. These may be wired as either digital or analog inputs, as shown in the JZ10-11-R16 Micro PLC Installation guide. I6 & I7 may be wired as npn, pnp, or 0-10V analog inputs. 1 input may be wired as pnp, while the other is wired as analog. If 1 input is wired as npn, the other may **not** be wired as analog.
4. I0 and I1 can each function as either a high-speed counter or as a normal digital input. When used as a normal digital input, normal input specifications apply.

Digital Outputs

	JZ10-11-R10	JZ10-11-R16
Number of outputs	4 relay	6 relay
Output type	SPST-NO (Form A)	
Isolation	By relay	
Type of relay	Panasonic JQ1AP-24V or compatible	
Output current	5A maximum (resistive load)	
Rated voltage	250VAC / 30VDC	
Minimum load	1mA@5VDC	
Life expectancy	50k operations at maximum load	
Response time	10mS (typical)	
Contact protection	External precautions required (see Increasing Contact Life Span in the product's Installation Guide)	

Analog Inputs

JZ10-11-R16 only

Number of inputs: 4, according to wiring as described above in Note 3

	AN0 and AN1	AN2 and AN3
Input range	0-20mA, 4-20mA	0-10VDC
Input impedance	154Ω	20KΩ
Maximum input rating	30mA	28.8V

Galvanic isolation	None
Conversion method	Succesive approximation
Resolution (except 4-20mA)	10-bit (0 to 1023)
Resolution (at 4-20mA)	204 to 1023 (820 units)
Conversion time	20mSec, Synchronized to cycle time
Precision	± 3%
Status indication	Yes – if an analog input deviates above the permissible range, its value will be 1024.
Input cable length	Up to 10 meters, shielded twisted pair

Display

Type	STN LCD
Illumination backlight	LED, yellow-green, software controlled (LCD backlight; enables the display to be viewed in the dark)
Display size	2 lines, 16 characters long
Character size	5x8 matrix, 2.95x5.55mm

Keyboard

Number of keys	16 keys, including 10 user-labeled keys
Key type	Metal dome, sealed membrane switch
Slides	Slides are installed under the operating panel faceplate. They label the keys and provide a logo picture. The unit is supplied with a set of slides already installed. A blank set is available by separate order.

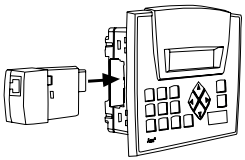
Program	See Note 5
Ladder code memory	24K (virtual)
Execution time	46µSec for bit operations (typical)
Memory bits (coils)	256
Memory integers (registers), 16 bit	256
Timers	64
HMI displays	60 user-designed displays available
HMI variables	64 HMI variables are available to conditionally display text and data. List variables add up to 1.5K's worth of HMI capacity.

Notes:

5. The controller does **not** offer a communication port. In order to download applications, the controller must be installed with an add-on programming port module. Such a module is included in the JZ-PRG programming kit, which is available by separate purchase.

Jazz Jack

Insertion point	Enables optional add-on modules. See Note 6



Notes:

6. Add-on modules are available by separate order.

Communication	Via add-on port module. See Note 7
GSM-support	SMS messages to/from 6 phone GSM numbers, up to 1K of user-designed messages. Supports Remote Access.
MODBUS	Supports MODBUS protocol, Master-Slave
Baud rate	According to add-on port module

Notes:

7. In order to enable communications, an add-on module containing a COM port must be plugged into the Jazz jack. The module included in the JZ-PRG programming kit may be used to communicate with external devices, if the device provides active RS232 voltage signals for purposes of power supply. For more details, see the JZ-PRG Installation Guide.

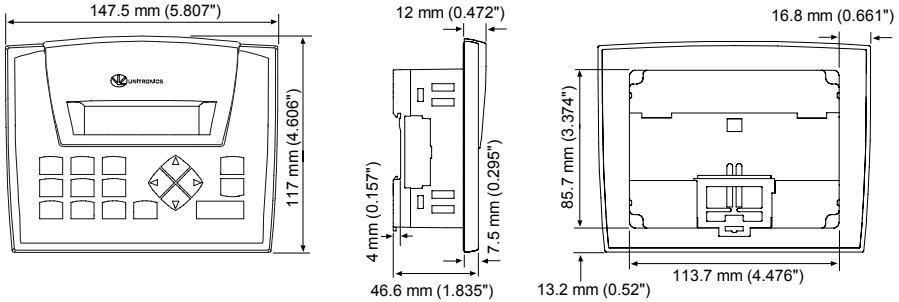
Miscellaneous

Clock (RTC)	Real-time clock functions (date and time).
Battery back-up	10 years typical at 25°C, battery back-up for RTC and system data, including variable data

Environmental

Operating temperature	0° to 50°C (32° to 122°F)
Storage temperature	-20° to 60° C (-4° to 140°F)
Relative humidity (RH)	10% to 95% (non-condensing)
Mounting method	Panel mounted (IP65/NEMA4X) DIN-rail mounted (IP20/NEMA1)

Dimensions

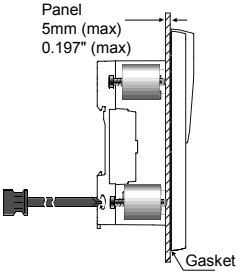


Weight	JZ10-11-R10	JZ10-11-R16
	325g (11.46 oz)	337g (11.88 oz)

Mounting

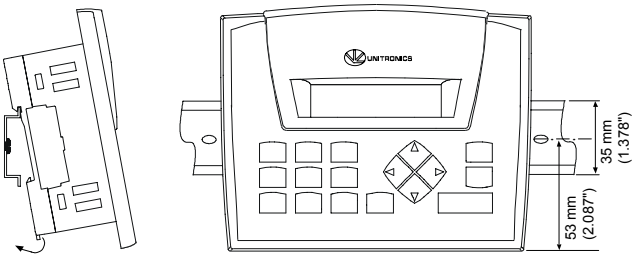
Panel mounting

Insert into cut-out:
117 x 89mm (WxH)
4.606"x 3.504"



DIN-rail mounting

Snap unit onto the DIN rail



5414-0060-4

Filter Pump

SCOT
ARDOX

MOTORPUMP™ — 3500 RPM
60 HERTZ, 2 X 1.5 X 5.63 NPT

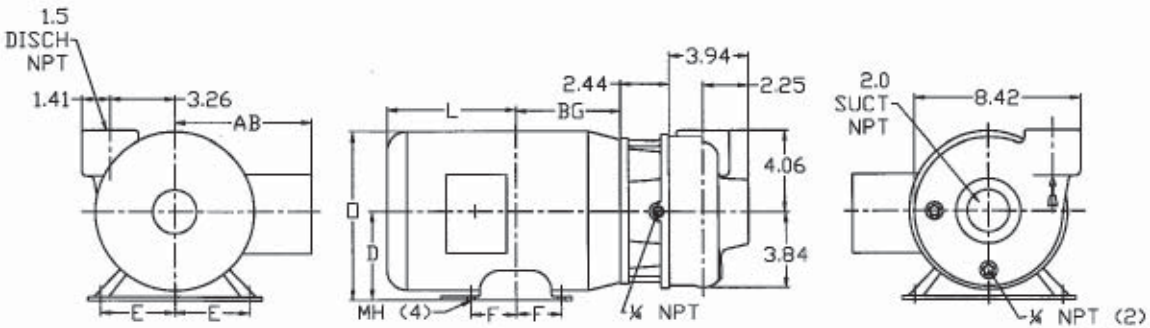
19GN
JM

MOTOR DIMENSIONS

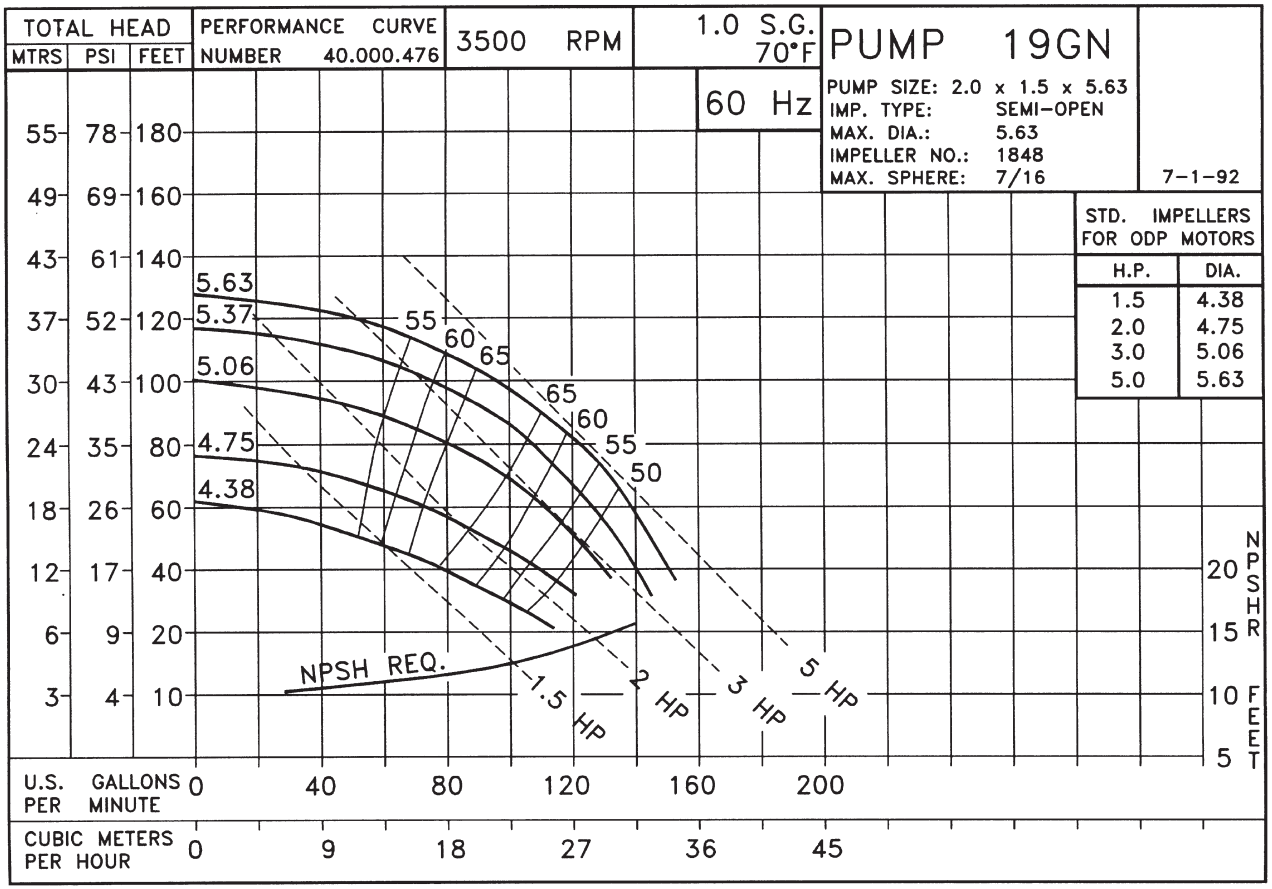
NEMA JM FRAME 3 PHASE 3500 RPM

HP	Type	Frame	D	E	F	O	AB	BG	L	MH
1.5	*ODP*	**JM143**	3.50	2.75	2.00	6.77	6.58	4.09	5.55	0.34
2	*ODP*	**JM145**	3.50	2.75	2.50	6.77	6.58	4.59	5.05	0.34
3	*ODP*	**JM145**	3.50	2.75	2.50	6.77	6.58	4.59	5.81	0.34
5	*ODP*	**JM182**	4.50	3.75	2.25	8.31	6.58	4.84	5.27	0.41
1.5	*TEFC*	**JM143**	3.50	2.75	2.00	7.00	5.87	4.57	5.85	0.34
2	*TEFC*	**JM145**	3.50	2.75	2.50	7.00	5.87	5.06	6.34	0.34
3	*TEFC*	**JM182**	4.50	3.75	2.25	8.85	7.09	5.01	7.14	0.41
5/7.5	*TEFC*	**JM184**	4.50	3.75	2.75	8.85	7.09	5.51	7.64	0.41

D019GNJM182 DRAWING DEPICTS 182JM 5.0HP ODP MOTOR



ALL DIMENSIONS IN INCHES.
DRAWING REPRESENTS APPROXIMATE PUMP DIMENSIONS. AUTOCAD DRAWING TO SCALE AVAILABLE FROM FACTORY.

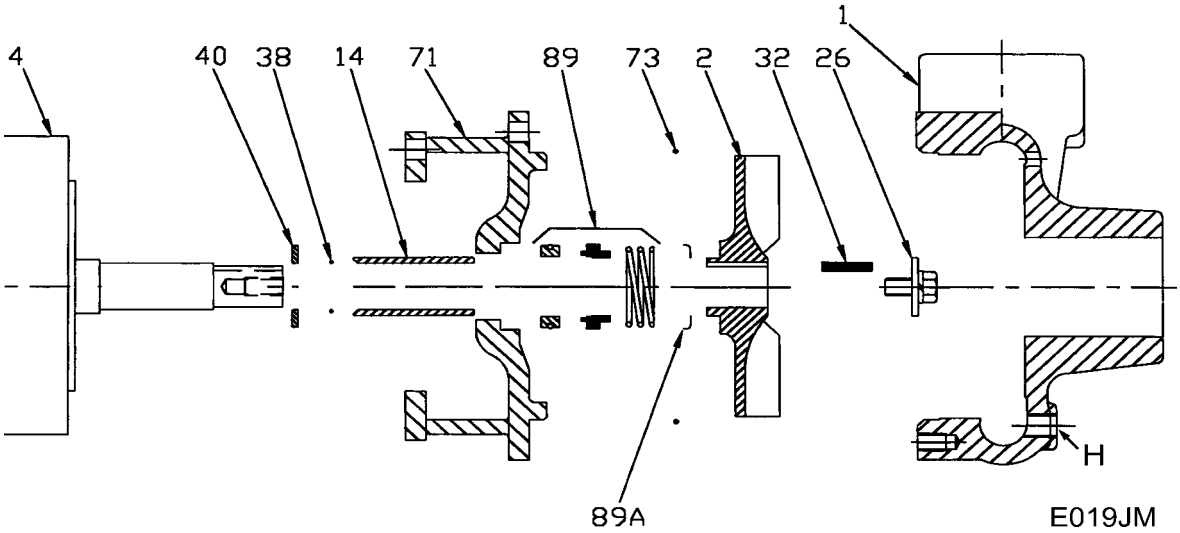


019G03DP D019GNJM182
019N3500

19GN
JM

019GN3500JM
81.001.508 G5

Pump 19GN • Iron • JM Frame • 3500 RPM



CONSTRUCTION OPTIONS			
KEY	**PART NAME**	**STANDARD FITTED**	**ALL IRON**
1	Case	Iron	Iron
2	Impeller	Iron	Iron
14	Shaft Sleeve	Bronze	Stainless
26	Imp. Retaining Ass'y	Stainless	Stainless
32	Key	Stainless	Stainless
38	Shaft O-Ring	BUNA	BUNA
40	Flinger	Stainless	Stainless
71	Adapter	Iron	Iron
73	Gasket, Case	BUNA	BUNA
89	Mechanical Seal, Type 21 BN-CM	Standard	Standard
89A	Seal Spring Retainer	Stainless	Stainless
H	Plug, Drain	Brass	Plated Steel

PEP/Arkal Warranty

PEP Filters, Inc.
Limited Product Warranty

Arkal Filtration Systems / PEP Filters referred to hereinafter as "PEP" warrants to the original end-use purchaser that products manufactured by PEP are free from defects due to material or workmanship within 12 months after start-up or 18 months after shipment date from PEP's factory, whichever occurs sooner.

If PEP determines that a product manufactured by PEP has failed under normal use and service due to a defect in material or workmanship within the warranty period for such product, PEP will repair or replace the defective part or product at no charge to the original end-use purchaser. The determination to repair or replace shall be made by PEP in its sole discretion. The repaired or replacement product shall be shipped to the original end-user purchaser freight collect unless the original end-use purchaser makes other arrangements for shipment. The original end-use purchaser shall bear all risk of loss or damage during shipment. Repair or replacement does not extend the original warranty period for a product, and any warranty repair or replacement is warranted only for the balance of the original warranty period.

Exclusions:

- Any product that is not sold by PEP as new
- Any accessory or other product that is not specifically manufactured by PEP (In the case of such products, any warranty is limited to a pass through to the original end-use purchaser of any warranty received from the manufacturer to extent such pass through is permitted by the manufacturer)
- Any product that fails other than during normal use and service or that fails outside the warranty period for such product
- Normal wear and tear
- Any product that PEP determines (a) was tampered with, disassembled, repaired, modified or altered without the prior written authorization of PEP (b) damaged during or after shipment (c) used to pump material that the product was not designed to pump or otherwise used for a purpose or under conditions that differ from those for which it was designed (d) not properly maintained or operated or otherwise misused (e) subjected to abnormal use or service or (f) incorrect line voltages or fuses
- Pump seals – Initial poor water quality upon start-up may shorten the life of the original pump seal. Seal failure after initial start-up is not considered a defect in materials or workmanship. Pump seals are warranted against leakage at time of initial start-up only, provided there are no visual signs of seal damage caused by the pump running dry.
- Any party other than the original end-use purchaser
- Field repair, removal, reinstallation, labor, freight or other similar items
- Fire, flood, or other "acts of God" or other contingencies beyond the control of PEP

To be eligible for warranty repair or replacement, the original end-use purchaser must notify PEP Filters customer service (800.243.4583) of the product failure in writing within the warranty period for such product and, if requested by PEP, the product must be promptly returned within 21 days for inspection, freight prepaid, to either PEP's factory at 322 Rolling Hills Road, Mooresville, NC 28117 or to a PEP authorized service partner. The original end-use purchaser must also promptly provide PEP or its authorized service partner with all such information as either of them may request concerning the maintenance, operation, use and failure of any product that is claimed to have failed due to a defect in material or workmanship. Return of a product to PEP's factory requires a Returned Material Authorization (RMA) from PEP, which will include crating and shipping instructions. The RMA No. must be included with the returned product. The original end-use purchaser shall bear all risk of loss or damage during shipment.

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Doc No. PF.S.LPW-Rev0609

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www.pepfilters.com

Heat Transfer Systems

June 7, 2013

Plate & Frame Heat Exchanger

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770-475-7740

Florida Office
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Fernandina Beach, Florida 32035
904-310-9280

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eFAX 877.649.0035
www.coolingtower.net

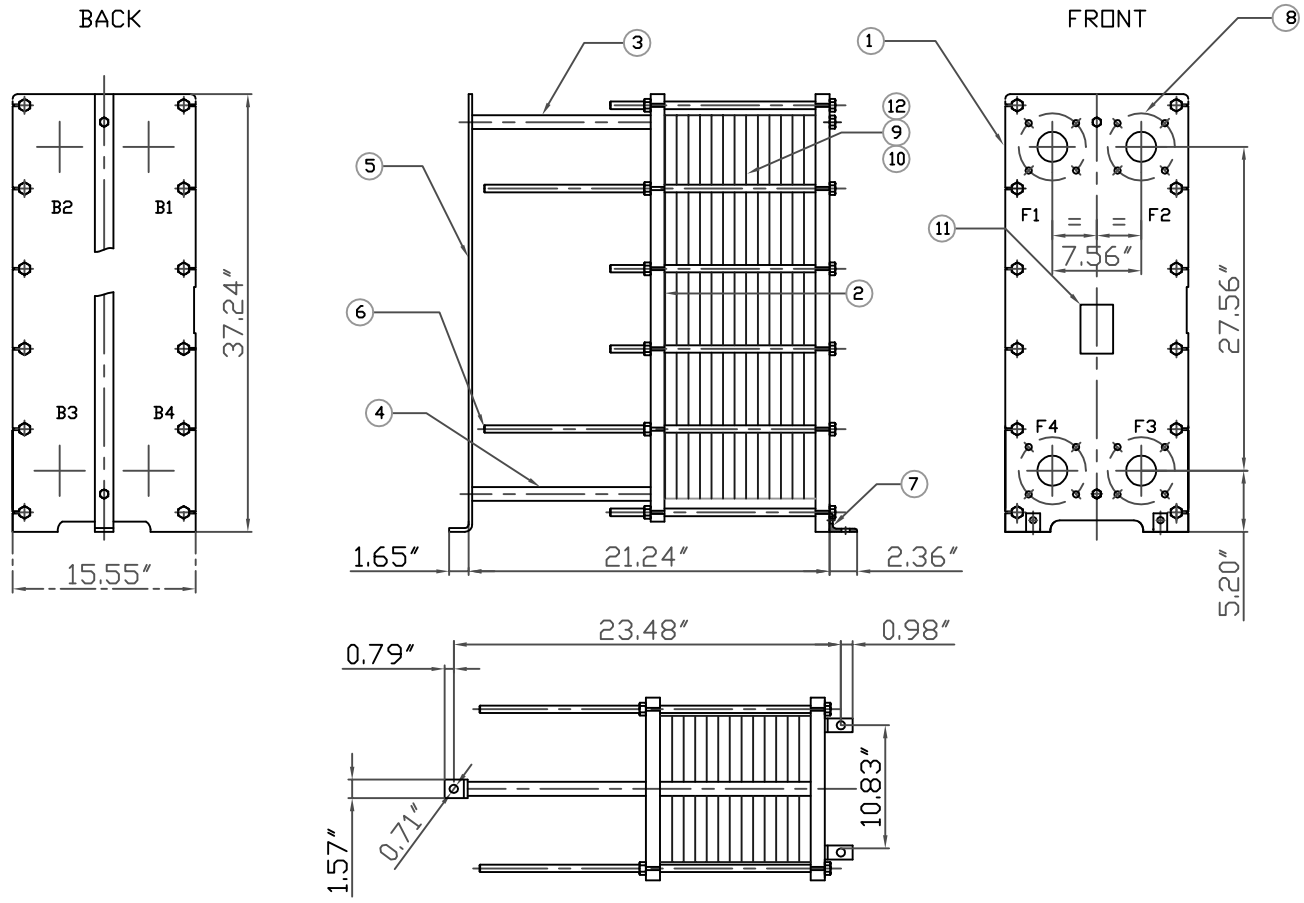
BILL OF MATERIALS

ITEM	DESCRIPTION	MATERIAL	QTY
1	FRONT PLATE	SA516 GR70	1
2	FOLLOWER PLATE	SA516 GR70	1
3	UPPER CARRYING BAR	GAL.STEEL ROUND BAR	1
4	GUIDE BAR	GAL.STEEL ROUND BAR	1
5	SUPPORT COLUMN	A36	1
6	TIGHTENING RODS	SA193-B7	12
7	SUPPORT FEET	A36	2
8	2.5" 150# PORT	UNLINED	4
9	THERMAL PLATE	0.4mm, AISI304	64
10	GASKET	NBR Hang On	65
11	NAMEPLATE	AISI304	1
12	SHROUD (NOT SHOWN)	GALVANIZED STEEL	1
13			

DATA	HOT SIDE	COLD SIDE
MEDIA	WATER	WATER
TEMP IN	100.00°F	84.50°F
TEMP OUT	90.00°F	94.49°F
FLOW RATE	234 GPM	234 GPM
PD	10.06 PSI	10.07 PSI
HEAT EX.	1,162,600 Btu/hr	
DESIGN TEMP.	150F	
DESIGN/TEST P.	150 / 195 PSI	
NET WEIGHT	523 Lbs	

PORT DATA

F1	HOT IN	F3	COLD IN
F2	COLD OUT	F4	HOT OUT
B1	NOT USED	B3	NOT USED
B2	NOT USED	B4	NOT USED
MODEL NO.	S19A-IG10-64-TLTL50		
SERIAL NO.			



LAYER DK TURNED OFF

Dimensions without tolerance: ISO 2768-m

ISO projektion

Drawn: DS | Date: 11/08/13 | Check: | Date:

SONDEX
Jernet 9
DK-6000 Kolding

Description:
S19A-IG10-64-TMTL50
Heat Transfer Systems

Rev. date: | Rev. no.: 0 | Drawing: S19A-IG10-64

CAD Design

Sondex A/S PHE - Design & Datalist

V10A33

Addison Smith Mechanical Contractors
Mary Lin Elementary

PHE-Type S19A-IG10-64-TMTL50-LIQUID		Hot side	Cold side
Flowrate	(g.p.m.)	234.00	234.00
Inlet temperature	(°F)	100.00	85.00
Outlet temperature	(°F)	90.00	95.00
Pressure drop	(PSI)	10.06	10.07
Heat exchanged	(Btu/h)	1162600	
Thermodynamic properties:		Water	Water
Density	(Lb/Ft^3)	62.01	62.07
Specific heat	(Btu/Lb*F)	1.00	1.00
Thermal conductivity	(Btu/h*Ft*F)	0.36	0.36
Mean viscosity	(cP)	0.72	0.77
Wall viscosity	(cP)	0.77	0.72
Inlet branch		F1	F3
Outlet branch		F4	F2

Design of Frame / Plates:			
Plate material		0.0157 inch AISI 304	
Gasket material / Max. temp.		NITRIL HT HANG ON (H) / 284	
Max. design temperature	(°F)	150.00	
Max. Working/test pressure	(PSI)	150.00	195.00
Max. Differential pressure	(PSI)	150.00	
Liquid volume	(Ft^3)	1.33	
Frame length	(Ft)	1.77	Max. No. of Plates 79
Net weight	(Lb)	523	
Frame type		IG	

Connections HOT side : 2.5 INCH Flange Mild steel ANSI B16.5 #150
Connections COLD side: 2.5 INCH Flange Mild steel ANSI B16.5 #150

Accessories:

Category C2L BLUE RAL 5010
EU Pallet (1200x800)
Safety Cover

Heat Transfer Systems

Heater Package

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Alpharetta, Georgia 30009
770-475-7740

Florida Office
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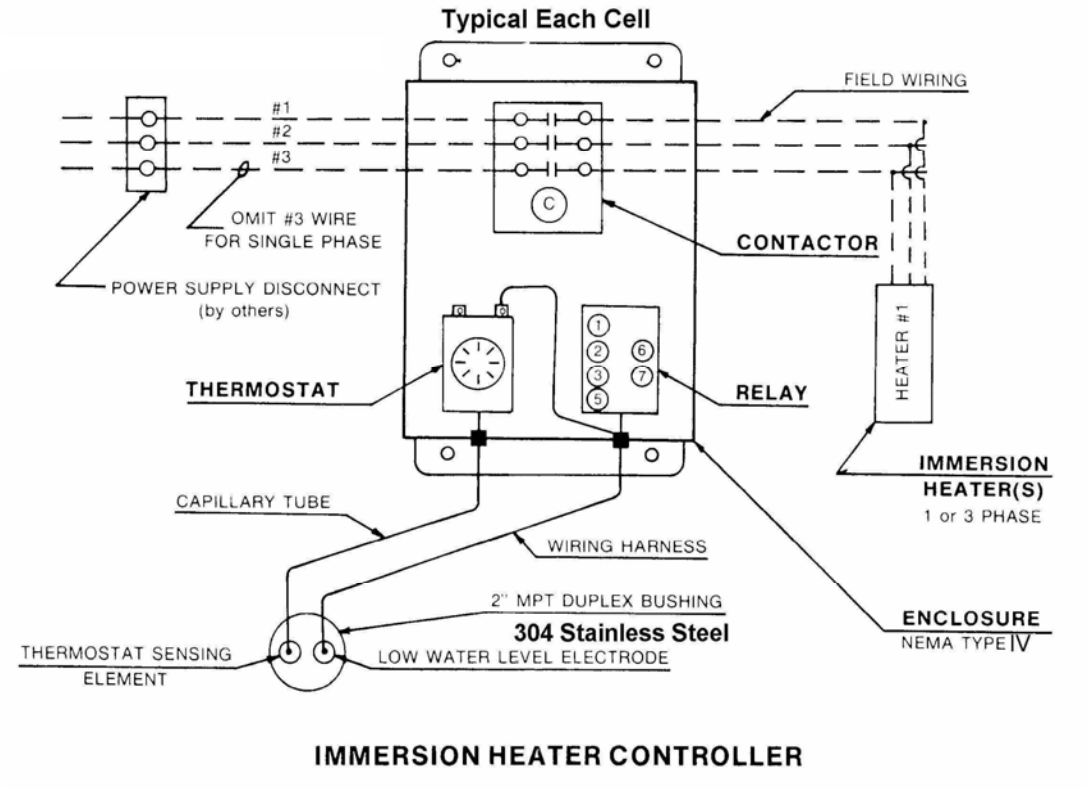
Heat Transfer Systems

333 North Main Street
Alpharetta, GA 30004-1321
(770)475-7740 (770)475-6167
www.coolingtower.net

Project: **Mary Lin Elementary**
Location: **Atlanta, GA**
Mechanical: **Addison Smith Mechanical Contractors**
Engineer: **AHA Consulting Engineers**

Heater Controller Model Number: **HTS 480603** **Quantity: 1**
Contactor Amp Rating: 40
Electric Immersion Heater **Quantity: 1**
Manufacturer: **INDEECO** **KW:** **3 kW Copper Element**
Voltage: **480 V** **Phase:** **3 Ph** **Frequency:** **60 Hz**

Heater(s) sized to maintain +40 basin temperature at 0 degree ambient conditions



IMMERSION HEATER CONTROLLER

Heat Transfer Systems

June 7, 2013

Water Level Controller
&
Solenoid Valve

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Alpharetta, Georgia 30009
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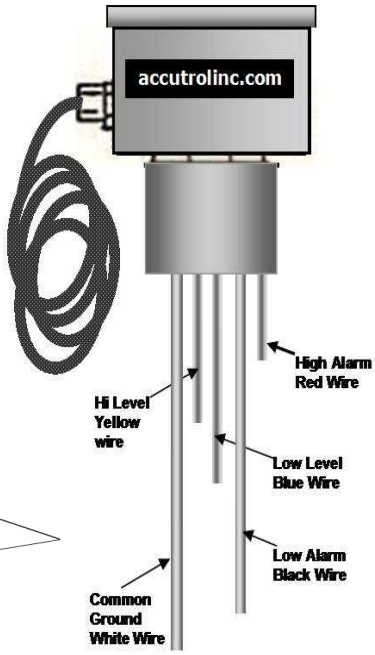
G-System Controls with Stainless Steel Brackets
Water Level Controller, Sensor Head, Remote Panel and Stilling Chamber

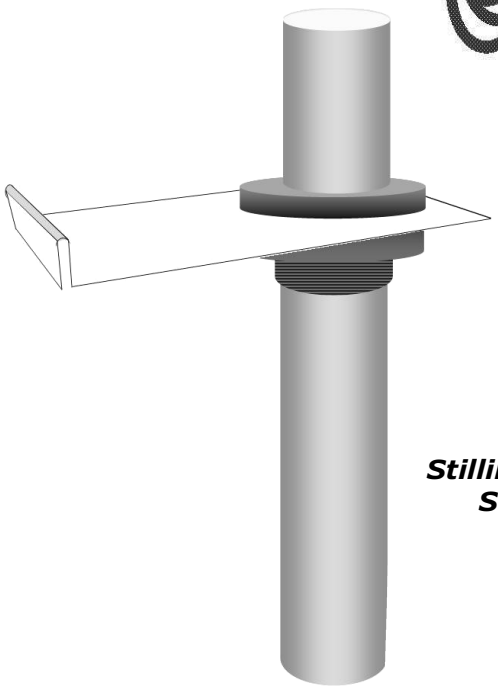
THE BEST SYSTEM FOR FREEZE PROTECTION

Remote panel with Stainless Steel G Bracket

P-Cap connection for Sensor Head to remote panel

Sensor Head with 10′ Cord





Stilling Chamber with Stainless Steel G Bracket

The G systems are self contained to provide a reliable means of basin water level control in your cooling tower, evaporative condenser or closed circuit cooler. The ease of service is accented by the plug in control relay and slip connection for mounting. It is no longer necessary to disconnect wiring to remove the controller for electrode inspection or control relay replacement. A spare plug in control relay can be stocked by the customer for instant replacement in event of relay failure. Minor level adjustments are accomplished by simply loosening the mounting collar set screw and sliding the controller to the proper level.

The stilling chamber is designed to minimize the wave action that is in the basin water, therefore eliminating rapid cycling. Easily mounted to the basin with a clip on stainless steel bracket the chamber installation is extremely cost effective.

Level controllers and stilling chambers are in stock for immediate delivery.

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CONTACT: ***HEAT TRANSFER SYSTEMS ALPHARETTA, GA 30009 PH. 877-475-7740***

ACCU-TROL G-SYSTEM 5 PROBE WATER LEVEL CONTROL WITH HIGH AND LOW ALARM CONTROL-OPERATION

1) RELAY "A" WILL ACTIVATE WHEN LEVEL FALLS BELOW THIRD LONGEST PROBE AND WILL DEACTIVATE WHEN LEVEL RISES TO SECOND LONGEST PROBE. (LEVEL CONTROL).

2) RELAY "B" WILL ACTIVATE WHEN LEVEL FALLS BELOW FOURTH LONGEST PROBE (LOW WATER ALARM). RELAY WILL DEACTIVATE WHEN LEVEL RISES TO PROBE HEIGHT.

3) RELAY "C" WILL ACTIVATE WHEN LEVEL RISES TO HIGHEST PROBE (HIGH WATER ALARM) RELAY WILL DEACTIVATE WHEN LEVEL FALLS BELOW PROBE.

4) PROBES SHOULD BE CHECKED AND CLEANED ANNUALLY OR MORE OFTEN IF REQUIRED.

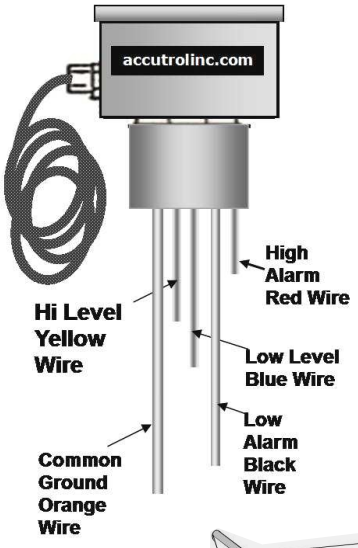
5) SET SCREW IN COLLAR WILL ALLOW FOR MINOR LEVEL ADJUSTMENT.

6) ELECTRICAL CONDUIT CONNECTIONS MUST BE WATER TIGHT TO PREVENT INTRODUCTION OF WATER INTO CONTROL ENCLOSURE.

7) ***RELAY DIAL SETTING MUST BE SET ON #10 AT ALL TIMES.***

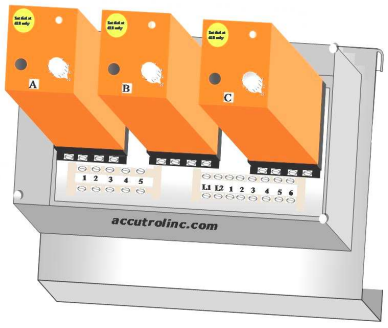
WE STRONGLY RECOMMEND THAT A SLOW OPENING AND CLOSING WATER VALVE BE USED IN CONNECTION WITH THIS ELECTRONIC LEVEL CONTROLLER TO MINIMIZE WATER HAMMER IN THE PIPE SYSTEM. WE CAN PROVIDE A VALVE AT A NOMINAL CHARGE.

Sensor Head

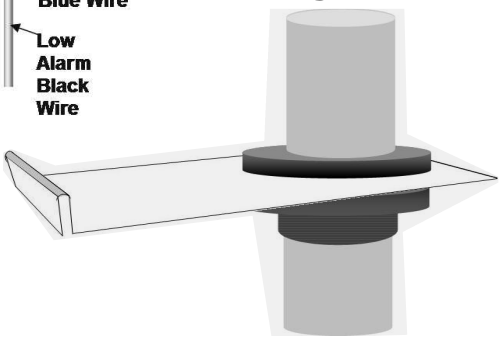


"P" Cap connection for sensor head to remote panel

Remote Panel



Stilling Chamber



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Level Control System with G-Bracket

The "G" style water level controller bracket is designed for quick and efficient installation of the Accu-Trol two piece water level controller. The system consists of an electrode sensor head and a relay panel The two are connected with a multi conductor water tight cable.

Installation is accomplished as follows:

1) Remove the air inlet louver from the tower in the area the system is to be mounted. The basin should be unobstructed of items such as heater elements, anti vortex hoods, piping, etc. and be full depth (deepest part of basin).

2. Slide sensor head bracket over lip for louver and secure with stainless steel set screw in bracket. Determine water levels that are to be monitored and adjust sensor electrodes as required. They may be cut if needed but should retain staggered lengths as shipped (shortest remains shortest, etc.).

3. Route cable attached to sensor head to exterior of tower. We suggest drilling a 3/4" hole and using the supplied cord connector, or running the cord through the abandoned make up valve nipple utilizing the "P" cap. We do not suggest running it through the louvers and should be avoided if possible.

4) Slide the relay panel bracket, with enclosure toward the outside, over the tower louver lip and secure with the (2) stainless steel setscrews. The flange at the bottom of the bracket should rest against the basin exterior wall.

5) Trim the cord (if required) and connect to the sensor terminal strip in the relay panel as shown on the wiring diagram.

6) From a suitable source and per NEC requirements connect 120/1/60 power to control terminal strip L1 & L2.

7) The relay contacts are dry (no power) and should be wired to control the make up valve and alarms (if provided) as job conditions dictate.

8) After field wiring is complete the unit may be checked by raising and lowering the sensor head and watching the relay indicator lights. Lights will illuminate when relay contacts close.

9) Replace relay panel cover and check that all connections are watertight.

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5 PROBE WATER LEVEL CONTROL - START UP

1. Verify input voltage is correct. **(**Voltage is printed on side of relay(s) **)**

2. With power on relay status light will be illuminated if relay is actuated.

3. Operation may be checked by removing sensor head from stilling chamber and utilizing a pail of water. While watching the status lights lower and raise the electrodes in the water. With the sensor head out of the water the level and low water light should be lit. Slowly lower the electrodes into the water. As the water reaches the two longest rods the low water relay light should go out. Further lowering of the sensor head and contact with the water of the next two rods will cause the level control relay light to go out. Continue to lower the controller until the upper (shortest) rod is in contact with the water, which will then light the high level relay indicator light. Slowly remove the sensor head from the liquid and the relays should operate in reverse sequence.

4. The relay contacts are “Dry” contacts (no voltage) and are rated at 10 AMPS. Verify that the loads do not exceed this rating.

5. Verify that the conduit connections are liquid tight.

6. Reinstall sensor head in stilling chamber and set level to suit job conditions.

7. Check controller operation:

Relay	***Indicator Light***	
High Level	***ON***	***Tower over full***
Level Control	***ON***	***Tower fill valve open***
	OFF	***Tower level satisfied***
Low Level	***ON***	***Tower water low***

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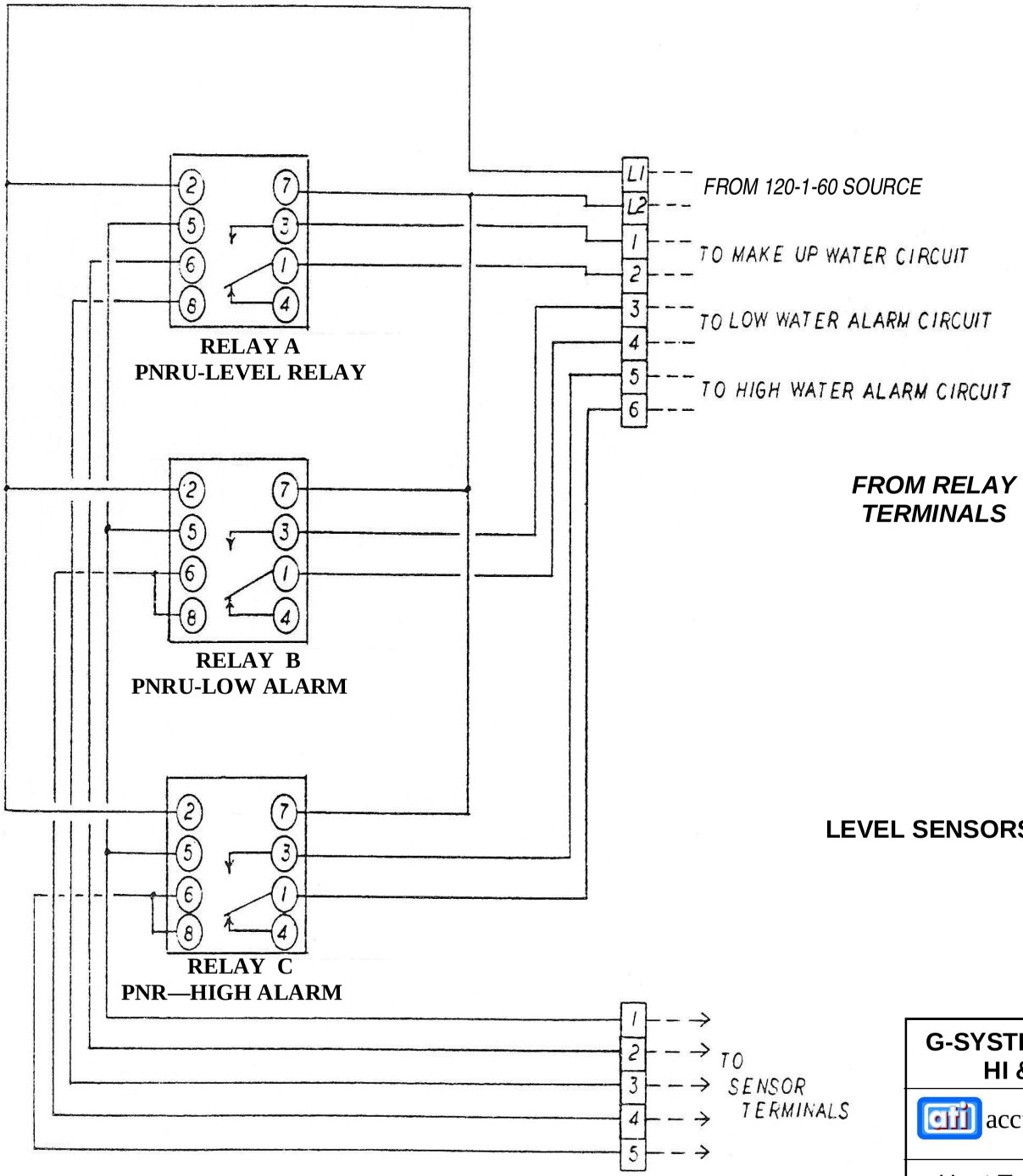
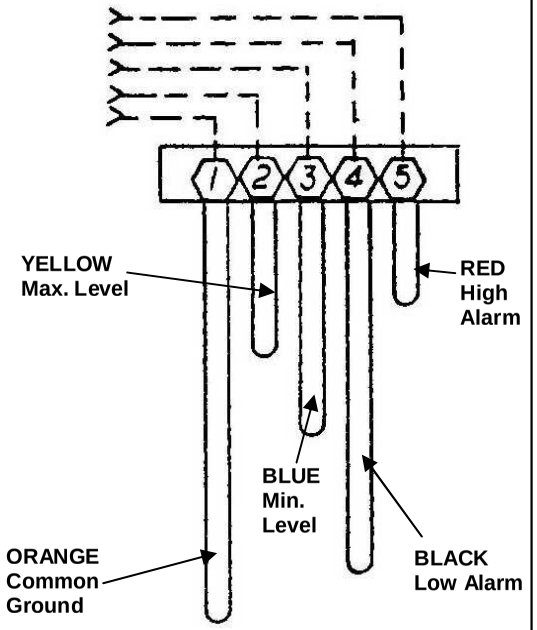


FROM RELAY TERMINALS

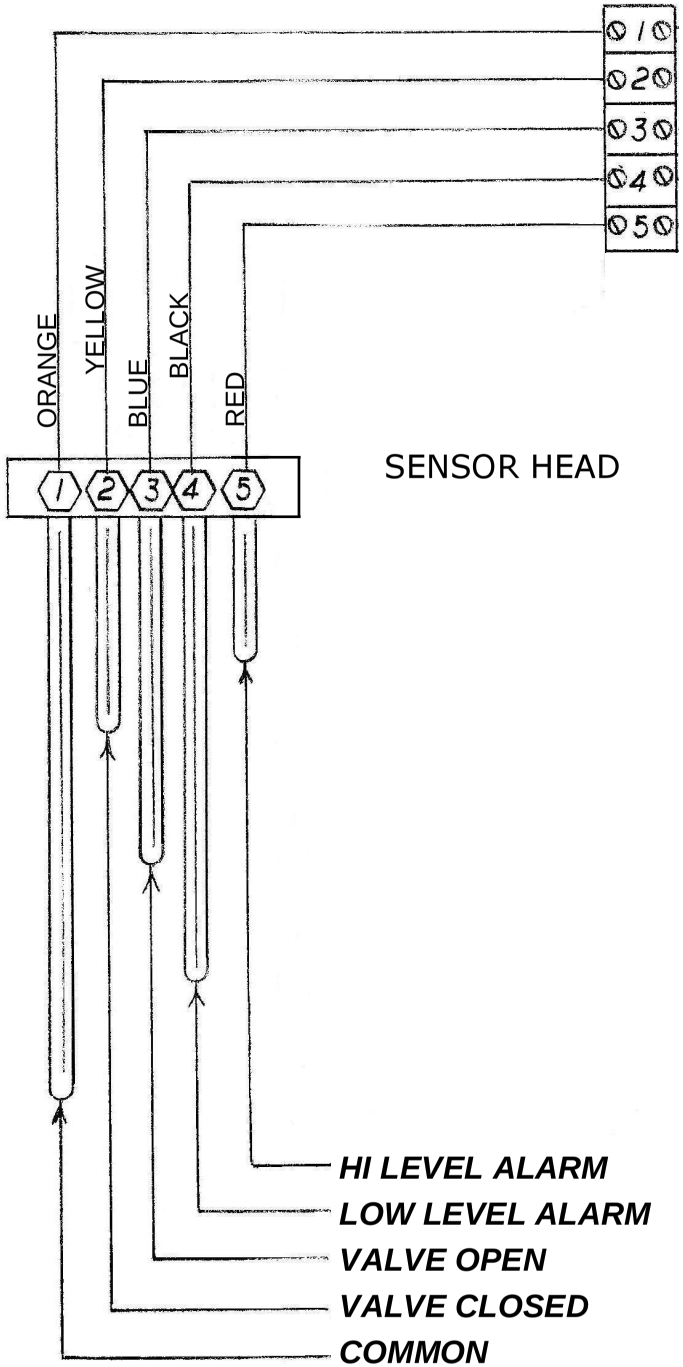
LEVEL SENSORS



G-SYSTEM 5 PROBE LEVEL CONTROL WITH HI & LO ALARM — REMOTE PANEL

ati accutrolinc.com Drawing #HTS-G-5 REM PNL

Heat Transfer Systems, Alpharetta, GA 30009
Ph. 877-475-7740



G-SYSTEM 5 PROBE LEVEL CONTROL WITH HI & LO ALARM SENSOR HEAD

HEAT TRANSFER SYSTEMS
ALPHARETTA, GA 30009
PH. 877-475-7740

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Drawing #HTS-G-5 SEN HD

G SYSTEM 5 PROBE LEVEL CONTROL AND STILLING CHAMBER
THE BEST SYSTEM FOR FREEZE PROTECTION

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The stilling chamber is designed to minimize the wave action that is in the basin water, therefore eliminating rapid cycling. Easily mounted to the basin with a clip on stainless steel bracket the chamber installation is extremely cost effective.

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SPECIFICATIONS - LEVEL CONTROL

Enclosure:
NEMA 4X
Constructed of Glass-Filled Polycarbonate.
Flammability rating of U194V-1.
Fully Gasketed Cover.
1/2" Electrical Conduit Connection.

Relay:
Inductive Plug In Type.
Voltage Primary 120.
Mechanical Life: 30,000,000 Cycles.
Voltage Secondary 24V.
Sensitivity Variable Between: 4.7K OHM & 100K OHM.
LED Operation Indicator.

Electrodes:
(5) 1/4" Stainless Steel

Mounting:
Clip on SS Bracket

SPECIFICATIONS - Stilling Chamber

Construction: 2" PVC Body.

Mounting: Clip on Stainless Steel Bracket

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CONTACT: HEAT TRANSFER SYSTEMS ALPHARETTA, GA 30009 PH. 877-475-7740

Solenoid Valve 975

¾”, 1”, 1-1/4”, 1-1/2”, 2”, 2-1/2” and 3”

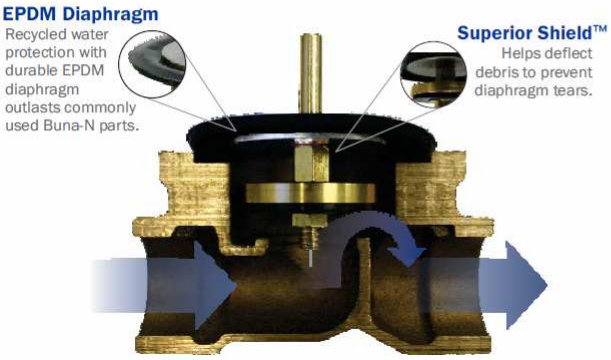
DESIGN FEATURES:

- Low seat design with two-piece internal assembly decreases pressure loss and improves flow when compared to valves with high seat design, and helps protect diaphragm from harmful debris
- Self-cleaning metering rod system ensures that only “clean” water enters the upper diaphragm chamber offering consistent, trouble-free performance
- All EPDM rubber parts outlast commonly used Buna-N parts when exposed to reclaimed water
- Made of high-quality Red Brass
- Consistent design ensures backward compatibility when replacing parts in older valves

Model 975 110V
also available
Model 950 24V
Electric Diaphragm Valve

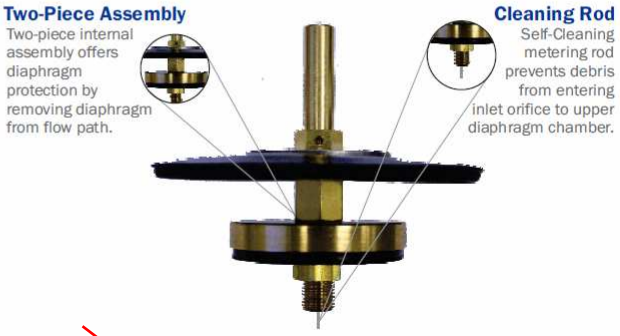
Diaphragm Reliability

Advanced two-piece internal assembly offers diaphragm protection by shielding diaphragm from flow path.



Debris Tolerance

Advanced porting design with self-cleaning metering rod system ensures that only “clean” water enters the diaphragm chamber, protecting the diaphragm for longer life.



Solenoid Specifications

Standard 24 VAC
In-rush current: 0.45 A (10.8 VA)
Holding current: 0.30 A (7.2 VA)

Optional 110 VAC
In-rush current: 95 mA (10.5 VA)
Holding current: 0.65 mA (7.2 VA)

Operating Ranges

Flow: 5 - 360 gpm
Pressure: 20 - 200 psi

Pressure Loss in PSI

GPM	3/4”	1”	1-1/4”	1-1/2”	2”	2-1/2”	3”
5	0.45	0.16					
10	1.75	0.75					
15	4	1.5	0.48				
20	7	2.6	0.85	0.45			
30		5.7	1.9	1			
40		10	3.5	1.7	0.53		
50			5.3	2.65	0.82		
60			7.6	3.8	1.2		
70			10.1	5.1	1.6		
80				6.6	2.05		
90				8.3	2.6		
100				10.9	3.2	2.38	2.38
120					4.6	2.45	2.45
140					6.3	2.5	2.5
160					8	2.9	2.9
200					13.9	4	4
240						6	6
260						8.2	8.2
320						10.7	10.7
360						13.2	13.2