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April 24, 2002

Ms. Tricia Merchant
Florida Public Service Commission
Division of Economic Regulation
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

02 APR 26 11:09:26
ECONOMIC REGULATION
COMMUNICATIONS SECTION

Re: Placid Lakes Utilities, Inc. Limited Proceeding
Docket No. 011621-WU

Dear Ms. Merchant:

The flow meter installed by Placid Lakes Utilities, Inc. ("Placid Lakes") in 1997 has stopped working. Pam Brewer of Placid Lakes contacted Lee Munroe of the PSC staff and requested that the cost of a new flow meter be included in the current limited proceeding. Allowing these costs to be recovered by Placid Lakes in this limited proceeding will save Placid Lakes' customers the cost of another proceeding and will provide equipment required by DEP regulations in a timely fashion. We have previously sent to Lee Munroe a memorandum regarding the meter, a copy of the invoice reflecting Placid Lakes' expenses incurred in 1997 for the old flow meter and a written estimate for the new meter. I am providing copies of that correspondence for your review.

Please consider this letter a formal request to include the replacement cost of a new flow meter in the current limited proceeding in Docket No. 011621-WU. I thank you in advance for your anticipated cooperation herein. If you have any questions, please do not hesitate to contact me.

AUS _____
CAF _____
CMP _____
COM _____
CTR _____
ECR _____
GCL _____
OPC _____
MMS _____
SEC _____

Sincerely,

Martin P. McDonnell

Martin P. McDonnell

cc: Ms. Pam Brewer, with enclosure

DOCUMENT NUMBER-DATE

04838 MAY-38

FPSC-COMMISSION CLERK

PLACID LAKES UTILITIES, INC

Pam Brewer

Date: April 18, 2002
To: Lee Munroe
CC:
Subject: Flow Meter

The flow meter installed in 1997 has stopped working. I am enclosing a copy of the check written for the original flow meter. The estimate is for a flow meter that can register low flows. DEP requires a working and accurate flow meter and graph chart.

PLANT EXPANSION ACCOUNT

2000 JEFFERSON AVE.
LAKE PLACID, FL 33852

1053

April 4 1997

03-421/031
2

PAY TO THE ORDER OF J.H. Ham Engineering, Inc.

\$ **4,624.02*

4624 02 CTS

DOLLARS



829-002
421 Central Avenue
Lake Placid, Florida 33852

Jerry Brewer

NON-NEGOTIABLE

⑆001053⑆ ⑆063104215⑆

⑆660022490⑆

PLACID LAKES UTILITIES INC
PLANT EXPANSION ACCOUNT
LAKE PLACID, FL 33852

DETACH AND RETAIN THIS STATEMENT
THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW
IF NOT CORRECT, PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED

DATE	DESCRIPTION	AMOUNT
04/04/97	Invoice 13430/CWO 18164 CWO 18163	\$ 3,064.10 1,559.92 \$4,624.02

111-112
111-151

NON-NEGOTIABLE

INSTRUMENTATION SPECIALISTS
SALES-SERVICE-SYSTEM ENGINEERING

MEMBER:
AMERICAN WATER WORKS ASSOC.
INSTRUMENT SOCIETY OF AMERICA
MEASUREMENTS & DATA SOCIETY
U.S.N.I

A.W.K. INDUSTRIES, INC.

P.O. BOX 607267 • ORLANDO, FLORIDA 32860 • PHONE (407) 293-1329 • FAX (407) 294-8244

11 April 2002

Placid Lakes Utilities
Lake Placid, Fla.

Attn: Scott Hutchins

Subject: Outbound Flow Meter Modifications.

We propose the following.

- 1- McCrometer MX Magenetic flow meter. 14" size.
- 1- 14" Stainless Steel Grounding Ring.
- 1- Signal Converter for remote mounting on wall in pump room.
- 1- Honeywell 4300 round chart recorder, 1 pen.
- 1- Power one, Loop power supply.
- 1- SLAC surge suppressor.
- 1- Lot fittings for installing the Mag. meter in the existing line.

THE ABOVE TOTALLY INSTALLED, CHECKED OUT AND PLACED IN SERVICE.

For Sum of \$11,926.00

Sales Tax NOT included

834.82 TX
12,760.82

Submitted:

Alvin W. Klutts

Alvin W. Klutts

MX UltraMag™

CONFIGURATION SHEET

MODEL MX UltraMag

ELECTROMAGNETIC FLOWMETER

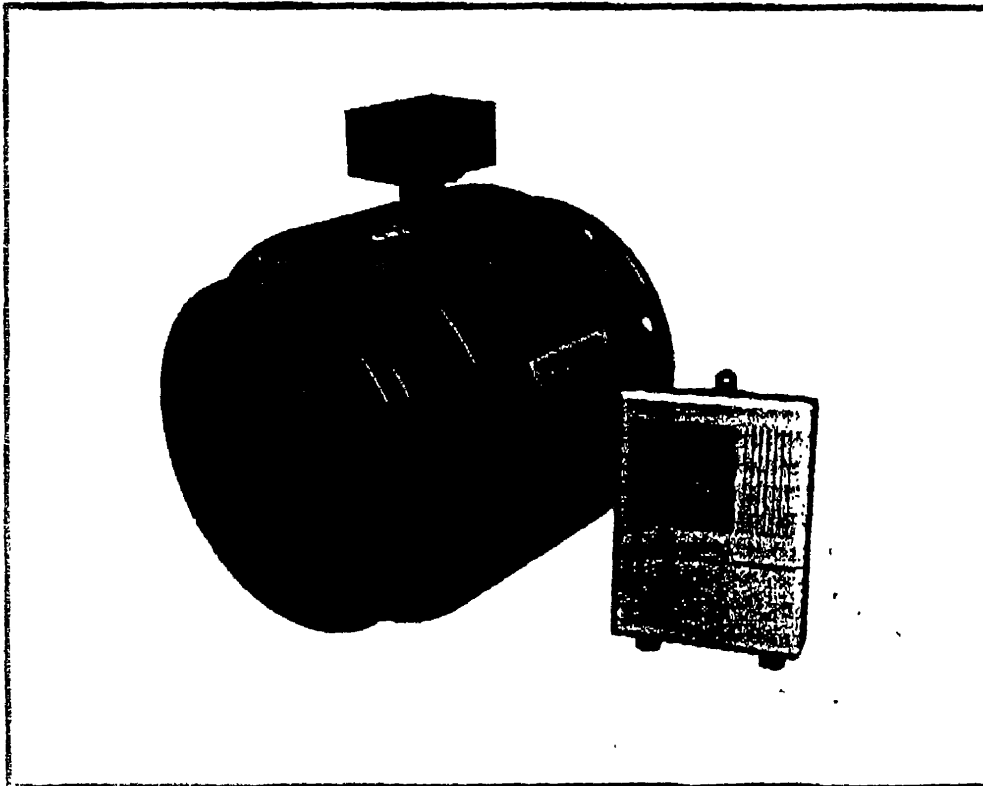
Remote Mounted

DESCRIPTION

The **MX UltraMag** model is manufactured to the highest standard available for magmeters. They incorporate microprocessor technology to offer a broad rangeability from very low flows to high pressure flows. The flanged end tube design permits use in a wide range of applications. They are equipped with a remote mounted signal converter that indicates both rate of flow and total flow as well as providing analog and pulse outputs. It has been designed to meet the needs of the municipal and agricultural water markets. The meter body is completely submersible. The meter can be installed vertically, horizontally or inclined on suction or discharge lines.

The **MX UltraMag** electromagnetic flowmeter is an obstructionless, volumetric flow measuring device that is capable of measuring the flowrate of almost all conducting liquids and slurries with a high degree of accuracy. Compact, high-density field coils generate a magnetic field across the flowtube. The moving flow generates a voltage which is then amplified and converted to give a direct flowrate reading with 4 to 20 mA and frequency outputs. Proper operation can only be achieved with a full pipe of liquid and blending or chemical injection should be done early enough so that the flow media is thoroughly mixed prior to entering the measurement area.

The signal converter is remotely mounted up to 300 feet from the meter and is factory programmed for every meter at desired requirements. The parameters are lockout protected, but can be changed via the front panel keypad or with the use of a personal computer or electronic organizer with a 9 pin RS232 serial interface port. Also available, as an option, is HART™ protocol compatibility. The converter is encased in a NEMA 4x case. The display is backlit with three lines and is located behind a polycarbonate window.



MX UltraMag™

CONFIGURATION SHEET

MODEL MX UltraMag

ELECTROMAGNETIC FLOWMETER

SPECIFICATIONS

CONFIGURATION:

Signal Converter is mounted directly or remotely from sensor on all sizes.

Separation (remote signal converter)

The maximum cable length is the lower of 300 feet or 15 x the conductivity ($\mu\text{S}/\text{cm}$).

ACCURACY (UNDER REFERENCE CONDITIONS):

Display, Serial Comms, Frequency Output:

$\pm 0.2\%$ of reading or $\pm 0.003 \text{ ft/sec}$ (0.001 m/s), whichever is greater, up to a maximum velocity of $>49 \text{ ft/sec}$ (15 m/s).

Analog Output:

As frequency output plus $\pm 0.008 \text{ mA}$.

Pressure Effects:

Less than 0.15% over the operating range of the instrument.

Temperature Effects:

Transmitter: Display, frequency output, Serial comma
 $\leq \pm 0.08\%$ of reading per 10°C .
 Analog output – as frequency plus
 $\leq \pm 0.08\%$ of reading per 10°C .

Repeatability & Reproducibility:

$\pm 0.05\%$ or $\pm 0.0008 \text{ ft/s}$ ($\pm 0.25 \text{ mm/s}$), whichever is greater.

Power Supply Variation:

Negligible effect – within published specification.

Conductivity:

Liquids and slurries having a conductivity of not less than $3 \mu\text{mho}/\text{cm}$.

Mounting:

Directly into pipeline at any attitude.

Electrodes should not be on a vertical plane.

Recommended Mating Pipe Conditions:

Upstream: 5 diameters of straight pipe from the center of the meter to any normal obstruction is sufficient to obtain specified accuracy.

Partially opened valves, 90 or 45 degree elbows, and pump discharges located upstream of the installation require 10 diameters.

All blending and chemical injection should be done early enough so the flow media is thoroughly mixed prior to entering the measurement area.

Downstream: 2 diameters of straight pipe from the center of the meter.

Power Consumption:

Less than 20VA

Warm-up Time:

Immediate

Calibration:

3 point, 8 point or witnessed

Sensor Cable Connection:

0.5 inch NPT-single opening. A single cable is provided that provides for the coil drive and electrode signals.

Sizes (Nominal Bore):

2-48 inch (50 mm-1200 mm). Consult factory for other sizes.

METERING TUBE: Lined stainless steel (304 SST)

Liner: **MX UltraMag**. NSF approved, fusion bonded epoxy

Electrodes: Non-removable (316 SST)

Grounding Ring: Recommended (316 SST)

Flanged Meters:

Sizes 2-inch to 48-inch (50 mm to 1200 mm) with maximum working pressure 150 or 300 psi. (300 psi not available larger than 20-inch).

Process Connections:

Flanged meter-carbon steel flanges to mate with ANSI flanges

Temperature:

Sensors, with integral transmitters,
 Ambient: -10 to $+80^\circ\text{C}$ (14 to 140°F)

Environmental Protection:

Flanged sensors, with remote converter
 NEMA 6P/IP68 with potted terminal box and cable

Configuration Methods:

All configurations are user defined and password protected. The configuration is stored in non-volatile memory with a 10-year retention. The converter is fully programmed before shipping. Reprogramming can be easily done on site using the following methods:

Keypad – can be used to access and change all menu parameters using four membrane keys and 3-line display.

RS232 – standard 9-pin data connection for local handheld terminal or computer (null modem/Lap Link cable required). Software such as ProComm Plus, Windows, PC Tools, or our communications option is required.

RS423/RS422 – option for remote serial communication.

HART™ Communications.

Displays:

Keypad: 3-line, 16 character, backlit display with large 1/2" numerals for flowrate and two lines for engineering units, totalizers, alarm status, velocity and percent of range.

Internal Totalizer:

Resettable 9-digit for forward, reverse and net totals. Can be programmed to reset via external input.

Time Constant:

Fully programmable from 1 to greater than 100 seconds.

MX UltraMag™

CONFIGURATION SHEET

MODEL MX UltraMag

ELECTROMAGNETIC FLOWMETER

SPECIFICATIONS (Continued)

Test Mode and Output Circuit Loop Verification:

After converter has been programmed, operation of the test mode will drive all outputs to programmed value to provide total system test.

Power Supply:

Universal switch mode.

AC: 85 to 265V 45 to 400 Hz at 20VA maximum *OR*

DC: 11 to 40V at 20VA maximum

High Input Impedance:

10¹¹ OHM performance allows non-conductive coatings on the electrodes to be ignored. Eliminates the need for removable electrodes or electrode cleaners.

OUTPUTS:

Standard

1. Analog:

Fully programmable for zero, full scale, up to 21mA and flow direction.

Fully isolated. Output capability ≤ 16 .

(800 ohm, 4-20mA)

Secondary range enabled by external input or programmed alarm condition as a percent of full scale.

2. Pulse/Frequency

One frequency/pulse output for forward and one for reverse flow.

Forward and reverse flows 0 to 800 Hz squarewave or fixed pulse width up to 2.5 sec. Fully programmable for pulse rate, pulse factor, low flow cutoff, pulse width, etc. Minimum frequency/resolution <0.1 pulse/day.

Frequency limit settable 1Hz-800Hz in 1Hz steps. Isolated protected transistor switch capable of sinking <250mA. Voltage <35V.

3. **Dual Alarms (2 separate outputs):** Isolated protected transistor switch capable of sinking <250mA. Voltage <35V. **NOTE:** Not isolated from frequency output. Fully programmable for high/low rates, percentage of range, empty-pipe zero, fault conditions, forward/reverse polarity (Normally open/close), analog over-range, pulse over-range, pulse cutoff, etc.

4. **RS232C:** 9-pin data connector for local handheld configurator or any computer with serial communications.

Optional

1. Dual Analog:

Additional analog outputs for re-ranging (provides two separate inputs to a recorder/controller). Only one output is active at a time. Nonactive output is 4mA.

2. **Serial Communication RS423/RS422:** Compatible data link (via terminal block).

3. **HART™ Communications.**

INPUT:

An external input such as contact closure, open collector voltage or logic signal can be used to:

1. reset totalizer
2. change range (span)
3. hold the output constant
4. drive the output to zero (i.e., empty pipe or partial filled pipe conditions)

NOTE: Not isolated from pulse and alarm outputs.

Isolation:

Galvanic separation to 50V dc between analog, pulse/ alarm, and earth/ground.

Temperature:

Operating: -10 to +80°C (14 to 140°F)

Storage: -15 to +75°C (5 to 167°F)

Enclosure:

Case is NEMA 4X/IP65 rated with separate termination and electronic compartments. It is constructed of glass filled polypropylene, and has a polycarbonate window.

Electrical Connections:

0.5 inch NPT with gasket seal.

Approvals:

CSA, General Purpose.

Meets:

Electrical safety: BS4743 Class 1. (IEC 348).

Vibration specification: BS2011: Part 2.1Fc: 1993.

EMC Specification:

1. Conforms to BS6667 Part 3 "Radiated susceptibility to 10V/m."
2. Conforms to BS6527 "Terminal voltage and radiated emissions."
3. Conforms to BS800 "Interference Power."

HART™ Communications:

The **MX UltraMag** converter HART™ option allows communications via the HART™ field communications protocol using a communications device connected to points located anywhere in the 4-20mA current output circuit wiring. **MX UltraMag** also supports a multi-drop system and permits up to 15 **MX UltraMag** converters on a single pair of wires without losing the 4-20mA signals on the individual meter. The unit can be configured with universal HART™ Communications such as the Rosemount 275 or 288 (version 6 or higher). HART™ burst mode is also supported, enabling regular transmission of selected data.

MX UltraMag™

CONFIGURATION SHEET

MODEL MX UltraMag

ELECTROMAGNETIC FLOWMETER

SPECIFICATIONS (Continued)

Self-Diagnostic:

Signal converter confirms correct operation of hardware with fault diagnosis, e.g. coil drive problems.

Empty Pipe Detection:

Programmable for conductivity trip point. Liquid level sensing results in drive to zero (i.e., empty pipe zero when electrodes are uncovered). For Process Mode only. Also can drive output to zero via external input in process or slurry mode.

Interchangeability:

Signal converters are fully interchangeable with all sizes of MX UltraMag sensors and can be configured on site. System specification not affected by converter change.

Test Equipment:

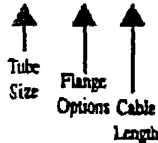
Flow signal simulators for testing and checking the electronic calibration of the MX UltraMag converter are available.

FLOW RATE CAPACITIES

Nominal Size	Gallons per Minute		Cubic Feet per Second	
	.2 ft/sec. Minimum	34 ft/sec. Maximum	.2 ft/sec. Minimum	34 ft/sec. Maximum
2"	2	352	0.004	0.784
3"	5	831	0.011	1.851
4"	8	1,440	0.018	3.208
6"	19	3,259	0.042	7.261
8"	33	5,636	0.074	12.557
10"	52	8,864	0.116	19.749
12"	74	12,572	0.165	28.010
14"	90	15,223	0.201	33.917
16"	118	20,058	0.263	44.689
18"	150	25,560	0.334	56.948
20"	185	31,532	0.412	70.253
24"	268	45,574	0.597	101.539
30"	420	71,337	0.936	158.939
36"	609	103,573	1.357	230.781
42"	834	141,803	1.858	315.937
48"	1,094	186,025	2.437	414.464

MODEL NUMBER CONFIGURATION - MX

For Example: **MX02-ZA50**



A - ANSI 150, Raised Face Flange

W - 150 pound service

Z - 300 pound service, Raised Face Flange (Sizes 2-20" only)

ANSI: American National Standards Institute

AWWA: American Water Works Association

NEMA: National Electronic Manufacturers Association

Teflon® is a registered trademark of the E.I. DuPont Corporation.



DIMENSIONS

Nominal Size	Dimensions (inches)			Shipping Weight (Approximate)
	A	B	C	
2"	11.0	11.3	7.9	75 pounds
3"	13.4	12.8	9.4	95 pounds
4"	13.4	13.8	10.4	121 pounds
6"	14.6	15.9	12.5	158 pounds
8"	16.1	19.2	15.7	230 pounds
10"	18.5	21.3	17.8	264 pounds
12"	19.7	22.8	19.4	328 pounds
14"	21.7	24.1	20.3	442 pounds
16"	23.6	26.1	21.1	458 pounds
18"	23.6	27.9	21.1	550 pounds
20"	25.6	30.1	24.8	660 pounds
24"	30.7	34.3	29.4	815 pounds
30"	35.8	40.8	35.9	1,330 pounds
36"	46.1	48.0	42.7	1,450 pounds
42"	46.1	54.0	47.3	1,600 pounds
48"	47.2	61.2	55.6	2,240 pounds

