Not Applicable to HART or Profibus Options - For HART or Profibus Configurations, see Converter IOM (Lit# 30120-46)

(8)

All electrical cables enter the converter through compression fittings located on the side of the converter. Ensure that all compression glands are properly tightened and all unused fittings are plugged so the case remains sealed.

All connections are made on the terminal board. To access the terminal board, loosen the four screws on the back of the converter to remove the rear





(10)

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CONTACT INFORMATION

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See McCROMETER

Quick Start Guide

Ultra Mag Electromagnetic Flow Meter

	() CON
Item No.	Part Name
1	M-Series Converter
2	Converter Cable (attached to meter)
3	Electromagnetic Meter Assembly with grounding wire a
4	Grounding Rings, Stainless Steel (optional on 4"-12")
5	Gaskets (Optional)
6	Nut, Hex, Brass
7	Earth Ground Wire
Also Inclu	ded:
- Ultra N	lag Installation, Operation and Maintenance Manual
- Convei	rter Installation, Operation and Maintenance Manual
	2 SERIAL NUMBERS

Meter Serial Number

Verify the system serial numbers on both the sensor and converter match to ensure a properly calibrated system.

The Meter Serial Number is located on a plate on the body of the sensor.



The tag on the side of the converter has the Converter Model Number, the Converter Serial Number and the Meter Serial Number.









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(3) SAFETY WARNINGS



WARNING! Installation and maintenance must only be carried out by suitably trained personnel.

WARNING! Hazardous area designation on the equipment label must be suitable for the intended duty and location. All relevant sections in this guide must be read before selecting a location.



WARNING! Safety requirements of this equipment, any associated equipment and the local environment must be taken into consideration.



WARNING! The installation and use of this equipment must be in accordance with relevant national and local standards.



WARNING! Carefully read all safety warning tags attached to the meter.

SENSOR INSTALLATION CONSIDERATIONS

Electrical Noise And Sensor

For flow measurement free of electrical noise interference, the sensor body must have electrical contact with the media and be connected to an earth ground. This is normally achieved via a grounding ring or grounding button.

(4)

Fluid Conductivity

To eliminate rapid changes in fluid conductivity, it is recommended that all blending and chemical injecting be done downstream of the meter to avoid possible measurement error and/or issues. If blending or chemical injecting is performed upstream of the meter, is should be done upstream of the meter early enough so the flow media is thoroughly mixed prior to entering the measurement area.

Meter Mounted Converter Location

Adjoining pipe must be adequately supported, and the area around the sensor should provide sufficient drainage to prevent flooding the converter or conduits.

The location chosen should provide room to read the display and be free from harsh electrical noise from adjacent equipment, cables, R.F.I., or E.M.I. The signal converter should not be subjected to intense, prolonged sunlight and/or vibrations. Unit should also be protected from heat.

Remote Mount

The signal converter may be installed in a desired location provided that free access is available to allow the display to be viewed as required. The unit can be either wall mounted or panel mounted with masonry fixings or nuts and bolts respectively via the fixing holes provided. The maximum distance between the meter and the converter is 500 feet. For applications with extended lengths, consult factory.

Grounding Ring And Gaskets

With the grounding ring installed, gaskets must be used to ensure a positive seal at the flanges, and to ensure fluid is properly grounded to sensor. The grounding ring is optional on the 4" through 12" models as these models utilize grounding buttons. For best performance, grounding rings are recommended for all sizes.

Converter/transmitter Connections

Connections to the sensor must be made with cable supplied by McCrometer specifically for that purpose. Do not substitute the supplied cable with other types of cable, even for short runs. For repairs or added lengths of cable, the entire cable between the sensor and the converter must be replaced. (Consult factory for replacement cable.)



— 12 Gauge Ground Wire

To Earth Ground

Grounding For 2"-3", And 14" And Larger Meters With Building Ground Noise

Gaskets must be used on either side of the grounding ring to provide a proper seal on

Rings & gaskets must align concentrically with the pipe so they do not obstruct or affect

the flanges. One gasket is used on flanges without a grounding ring.

formation For All Installations

flow through the tube.



Grounding For All Meter Sizes With Pipe Or Fluid Column Noise With Conductive Pipe

6 **POSITIONING THE SENSOR** Side View In pipes which may encounter less than a full pipe of fluid, the **Pipe Diameters** For proper accuracies any 90 or 45 degree elbows, valves, partially opened meter must be positioned in a trap to ensure that the sensor is valves, etc. should be placed not closer than one pipe diameters upstream and always completely filled with liquid. zero pipe diameters downstream. **Flow Direction** The flow of the medium should correspond to the direction shown by the arrow on the sensor. **− B → Sensor Orientation** Fluid level The following installation recommendations should be followed: Side View In horizontal pipe runs, the meter should be installed so that the junction box is vertical ensuring the electrodes are positioned to prevent coating by sediments or loss of electrode contact due to air bubbles. Fluid level Side View Flow direction In vertical pipe runs, the flow should be upward. In slurry D application, a vertical position ensures optimal distribution of solids under all flow conditions.



5 SENSOR GROUNDING

Sensor Grounding For All Meter Sizes With Pipe Or Fluid Column Noise With Non-Conductive Pipe

Attach the provided 12 gauge wire, or equivalent, to the sensor ground lug and to the TWO grounding ring lugs. See below.

Gro



Grounding For All Meter Sizes With Pipe Or Fluid Column Noise With Non-Conductive Pipe

Sensor Grounding For All Meter Sizes With Pipe Or Fluid Column Noise With Conductive Pipe (Including PVC And Plastic

Attach the provided 12 gauge wire, or equivalent, to the sensor ground lug and to the TWO grounding ring lugs. See Figure #. Next, using a 12 gauge wire, connect both grounding rings to the mating flanges. See below.

NOTE: If building ground noise is also present, attach the provided 12 gauge wire, or equivalent, to the ground lug and an

DIMENSIONS

Size nal)	Meter Pipe ID	Flow Ranges GPM Standard .2 to 32 FPS	DIMENSIONS (Lay Lengths)						
. ,			A*		В	с		D	E
		Min - Max	UM06	UM08		UM06	UM08		
	2.117	2 - 340	11.00	11.00	6.70	6.00	6.50	7.90	9.26
	3.220	5 - 730	13.40	13.40	6.70	7.50	8.25	9.40	10.01
	3.720	8 - 1,140	13.40	13.40	n/a	9.00	10.00	n/a	8.06
	5.692	19 - 2,660	14.60	14.60	n/a	11.00	12.50	n/a	9.06
	7.692	33 - 4,870	16.10	17.25	n/a	13.50	15.00	n/a	10.06
	9.682	52 - 7,670	18.50	18.50	n/a	16.00	17.50	n/a	10.46
	11.682	74 - 11,180	19.70	19.70	n/a	19.00	20.50	n/a	12.31
	13.440	90 - 16,070	21.70	22.75	12.00	21.00	23.00	20.30	15.46
•	15.440	118 - 20,900	23.60	25.25	14.20	23.50	25.50	21.10	16.21
	17.440	150 - 26,480	23.60	25.25	14.20	25.00	28.00	21.10	17.21
•	19.440	185 - 32,720	25.60	28.25	16.20	27.50	30.50	24.80	18.26
	23.440	270 - 47,180	30.70	35.75	21.70	32.00	36.00	29.60	20.11
	29.190	420 - 73,620	35.80	41.75	26.50	38.75	43.00	35.90	23.26
	35.190	610 - 105,930	46.10	46.10	28.20	46.00	50.00	42.70	26.66
	41.190	830 - 144,370	48.05	**	32.10	52.75	**	48.35	29.99
	47.190	1,080 - 188,430	50.00	**	36.00	59.50	**	54.00	33.31

Meter Body Dimenesions

* Laying lengths for meters with ANSI Class 150 Flanges are equal to UM08 laying lengths

** Consult factory

Note: Grounding Rings are 0.125" thick.