

# Information Sheet

## Remote Programmable Flowmeter-Pulsers

*Variable flow rates require a flow proportional dosing system. LMI's Remote Flowmeter-Pulser provides a precise flow proportional dosing system that is simple to install and easy to maintain.*

*RFP-07 (pictured)*



### Accessibility

LMI's Remote Flowmeter-Pulsers allow you to install the Flowmeter in your pipeline and to wall mount the Remote Programmable Divider up to 100 ft (30 m) away, where it provides easy user access.

### Simple System Requirements

For automatic flow proportioning, all that is required is the LMI Remote Programmable Flowmeter-Pulser and an LMI dosing pump sized to fit the additive flow rate. No timers, relays or control valves are required.

### Rugged Construction

The Flowmeter body is constructed of cast bronze. The register is mounted directly to the Flowmeter and is hermetically sealed. The register is completely separated from the waterway and driven by a ceramic magnet.

### A Size for All Applications

- Line sizes from 3/4" to 4"
- Flow rates from .44 to 650 GPM
- Line pressures to 200 psi (13.8 Bar)
- Water temperatures from 32°F to 130°F (0°C to 55°C)
- Complies with or exceeds all AWWA Class 1 turbine meter performance and material standards.



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## Simple Operation

As liquid flows through the Flowmeter, a magnetic pickup external to the flow stream senses each rotation of the high speed rotor. These pulses are transmitted to the Remote Programmable Divider. The divider accumulates the number of pulses and triggers the LMI dosing pump to stroke once for the set number of pulses.

The Remote Programmable Divider permits you to set the ratio of pulses to pump strokes at any ratio between 1:1 and 9999:1. Combined with the 10 to 1 adjustability of the LMI dosing pump's stroke length and alterations to the solution concentration, the additive injection ratios exceed five hundred million to one. Consult the RFP Instruction Manual for further details on setting the divider.

## Simple, Rugged Design

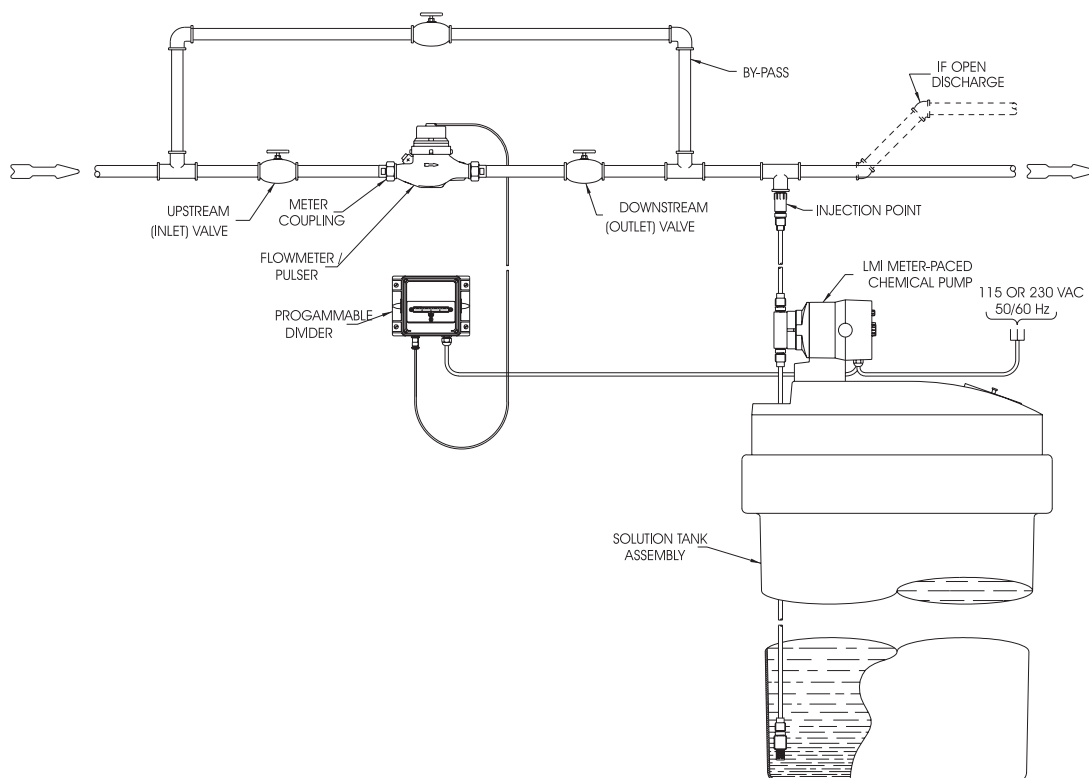
The RFP Flowmeter is a magnetic drive turbine meter that provides long life over a wide range of flow rates. The only moving part in the wetted space is the multi-jet impeller. This isolation eliminates any possibility of contamination. The register is dustproof as well as water proof, and is easy to read.

The register is hermetically sealed, preventing moisture and condensation.

The register is held in place by a polypropylene clamp band which allows you to turn the register to the most convenient reading position.

The measuring chamber is constructed of a Noryl plastic inlet hub and polypropylene rotor. Models RFP-07 (or 31235), RFP-08 (or 49484), RFP-10 (or 31236), RFP-15 (or 31237), and RFP-16 (or 49485) have a polypropylene strainer while all other models have a stainless steel strainer.

## Typical Installation



## 1. Select Your Flowmeter

- Determine the required pipe size or mounting flange.
- Determine the maximum and minimum flowrate of the flowmeter.
- Select your flowmeter model from the chart below:

| Flowmeter Only P/N | or | Flowmeter Model with PD-4 | Pipe Size | Flow-GPM* |     | Flow-LPM* |      | Primary Pulses per U.S. Gallon | Primary Pulse per Liter |
|--------------------|----|---------------------------|-----------|-----------|-----|-----------|------|--------------------------------|-------------------------|
|                    |    |                           |           | MIN       | MAX | MIN       | MAX  |                                |                         |
| 31235              |    | RFP-07*                   | 3/4"      | 0.44      | 20  | 1.7       | 76   | 62.7                           | 16.6                    |
| 49484              |    | RFP-08*                   | 3/4"      | 0.44      | 20  | 1.7       | 76   | 79.08                          | 20.9                    |
| 31236              |    | RFP-10                    | 1"        | 0.8       | 50  | 3.0       | 189  | 34                             | 9                       |
| 31237              |    | RFP-15*                   | 1-1/2"    | 1.4       | 85  | 5.3       | 322  | 13.3                           | 3.5                     |
| 49485              |    | RFP-16*                   | 1-1/2"    | 1.4       | 85  | 5.3       | 322  | 14.5                           | 3.8                     |
| 31371              |    | RFP-20                    | 2"        | 1.75      | 130 | 6.6       | 492  | 13.3                           | 3.5                     |
| 31373              |    | RFP-30                    | 3"        | 5         | 350 | 18.9      | 1325 | 7.7                            | 2                       |
| 31398              |    | RFP-40                    | 4"        | 5         | 650 | 18.9      | 2460 | 4.8                            | 1.3                     |

\*NOTE: RFP-08 (or 49484) is a replacement for RFP-07 (or 31235) — Note change in Pulse rates.

RFP-16 (or 49485) is a replacement for RFP-15 (or 31237) — Note change in Pulse rates.

## 2. Select Your Metering Pump

- Be sure the metering pump selected is an LMI Series AA7, B7, or C7 type pump. These pumps are equipped with an external input jack for use with RFP flowmeters. Roytronic® Series A7 type pump requires optional 4 Pin to 5 Pin adapter P/N 48488. Note: For use with AA9, B9, C9 and Roytronic Excel Series AD8, AD9 pumps consult the factory or your local distributor.
- When using the RFP flowmeter, the speed control function is bypassed and taken over by the divider unit. The speed of the pump is controlled automatically based on the flow of the water through the flowmeter. On the Series AA7, external mode is accomplished by turning the speed knob fully counter-clockwise. On Series B7 and C7 pumps, a switch is provided to place the pump in the external mode. Roytronic® Series A7 uses a power/mode button to change to external mode.
- Be sure the pump's pressure rating exceeds the system pressure by a minimum of 20%. For example, if system pressure equals 100 psi (6.9 Bar), the pump rating should be 120 psi (8.3 Bar) or greater.

- Use this calculation to determine pump output in gallons per hour (GPH\*).

$$\frac{\text{Max. flowrate of water through flowmeter (in GPM*)} \times \text{Desired concentration (in PPM*)}}{\text{Percent concentration of pumping solution (expressed as a whole number)}} = \boxed{\phantom{000}} \times .006 = \boxed{\phantom{000}} \text{ (Required pump output in GPH*)} \quad \text{(A)}$$

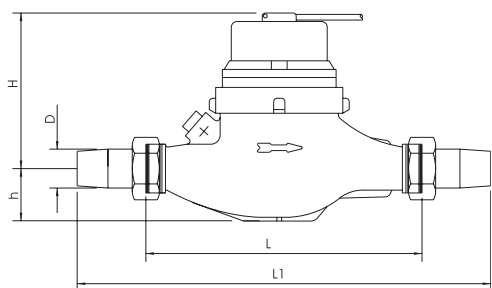
$$\text{Example A: } \frac{100 \text{ (GPM*)} \times 10 \text{ (PPM*)}}{5.25 \text{ (\% solution expressed as a whole number)}} = \boxed{190.48} \times .006 = \boxed{1.14} \text{ (Required pump output in GPH*)} \quad \text{(A)}$$

Example Results: Select a B71 pump with 1.6 GPH\* max. output at 150 psi.

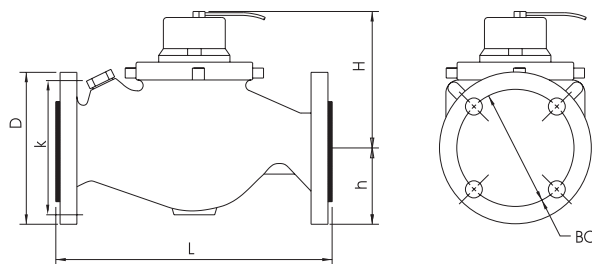
## Flowmeter Specifications

|                     |           |  |        |                 |        |   |        |
|---------------------|-----------|--|--------|-----------------|--------|---|--------|
| Flowmeter only P/Ns |           | 31235,<br>49484  | 31236  | 31237,<br>49485 | 31371  | 31373   | 31398  |
| Model – RFP         |           | RFP-07/08  | RFP-10 | RFP-15/16       | RFP-20 | RFP-30  | RFP-40 |
| Meter Type          |           | Multi-Jet Impeller, Magnetic Drive   |        |                 |        | Magnetic Drive Turbine  |        |
| Body Material       |           | Bronze   |        |                 |        |   |        |
| Register Type       |           | Straight Reading U.S. Gallons<br>Protected by High Impact Resistant plastic.<br>Hermetically sealed. |        |                 |        | Straight Reading U.S. Gallons<br>Center sweep hand Protected by<br>High Impact Resistant plastic.<br>Hermetically sealed. |        |
| Totalizer Digits    |           | 7  |        |                 |        | 8   |        |
| Service Temp        | °F (°C)   | 32 - 120 (0 - 50)  |        |                 |        | 32 - 130 (0 - 55)   |        |
| MAX Op. Pressure    | psi (Bar) | 200 (13.8)   |        |                 |        | 150 (10.3)  |        |

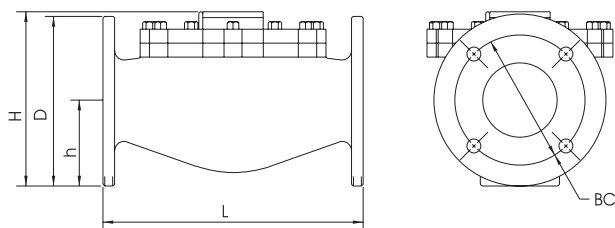
| Model No.    |      | RFP-07/08 | RFP-10 | RFP-15/16 | RFP-20 | RFP-30 | RFP-40 |
|--------------|------|-----------|--------|-----------|--------|--------|--------|
| Nominal Size | inch | 3/4       | 1      | 1-1/2     | 2      | 3      | 4      |
|              | mm   | 20        | 25     | 40        | 50     | 75     | 100    |
| L            | inch | 7.5       | 10.25  | 11.81     | 10.62  | 12     | 14     |
|              | mm   | 190       | 260    | 300       | 270    | 305    | 356    |
| L1           | inch | 11.34     | 14.87  | 17.25     | —      | —      | —      |
|              | mm   | 288       | 378    | 438       | —      | —      | —      |
| H            | inch | 5.35      | 5.79   | 6.34      | 8.6    | 8.44   | 9.37   |
|              | mm   | 136       | 147    | 161       | 218    | 214    | 240    |
| h            | inch | 1.61      | 1.75   | 1.81      | 3.27   | 3.87   | 4.62   |
|              | mm   | 41        | 44     | 46        | 83     | 99     | 117    |
| D            | inch | 1         | 1.25   | 2         | 6.5    | 7.5    | 9      |
|              | mm   | —         | —      | —         | 165    | 190    | 228    |
| BC           | inch | —         | —      | —         | 4.75   | 6      | 7.5    |
|              | mm   | —         | —      | —         | 121    | 152    | 190    |
| Bolt Size    | inch | —         | —      | —         | 5/8    | 3/4    | 3/4    |
|              | mm   | —         | —      | —         | 16     | 19     | 19     |
| No. of Bolts |      | —         | —      | —         | 4      | 4      | 8      |
| Net Weight   | lbs  | 4.6       | 6.8    | 13.0      | 25.8   | 42     | 68     |
|              | kg   | 2.1       | 3.1    | 5.9       | 11.7   | 19.1   | 30.8   |



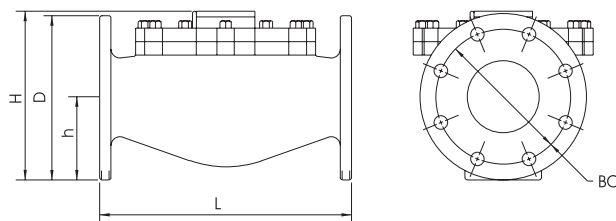
**31235/49484, 31236, 31237/49485  
RFP-07/08, RFP-10, RFP-15/16**



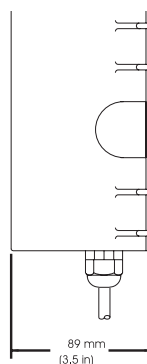
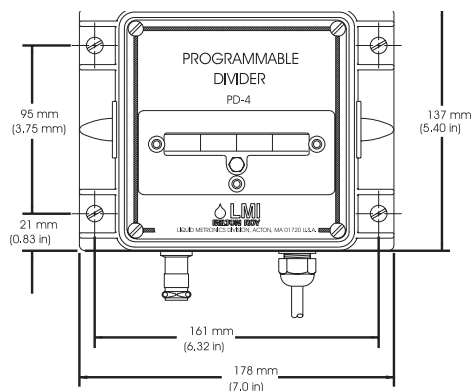
**31371  
RFP-20**



**31373  
RFP-30**



**31398  
RFP-40**



**REMOTE PROGRAMMABLE DIVIDER - ALL MODELS**