



## LAKSHMI ENGINEERING WORKS

**Mfg & Supp of:** Soil, Cement and Concrete Testing Equipment, Survey, Drawing, Hydrological, Metrological, Geological, Scientific Instruments **(All type of Water Current Meters)**

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Dear Sir,

**Subject: PORTFOLIO OF M/s LAKSHMI ENGINEERING WORKS**

We take pleasure to introduce ourselves as registered manufacturers & supplier of all kinds of Hydrological & Metrological Instruments as well as River Gauging Instruments.

We are supplying these items to all Government and Semi Government Departments with their entire satisfaction. We are also doing the repair works of these instruments at our workshop. Our all instruments covered a guarantee for one year from the date of supply.

You are therefore requested kindly enlist our firm name on your mailing register & enquire us of our quality instruments, so that we may quote the most competitive prices.

Thanking You

Yours Faithfully

**PRAVEEN KUMAR**

# Pygmy Water Current Meter

## Introduction

The pygmy water current meter is used for measuring the flow velocity of water in rivers open drainage system and small canals.

## Design

The meter body design is of cylindrical shape and made up off brass. Signals are generated virtually without any power by an impulse device actuated by magnet which is mounted on the sleeve of the propeller. The encapsulation of the impulse device is completely watertight and pressure tight thus allowing reliable measurements to be obtained even in waters chemically aggressive, heavily soiled or mixed with sand and bed load.

## Servicing

The current meter is a precision instrument and should be handled with due care in order to ensure high metering accuracy. Rinse the current meter after every application in clear water and dry it carefully store it in given box.

## Specifications

The water current meter used for determining velocities of flowing water in open channel and streams has been manufactured to meet the requirement of IS:3910.

The water current meter consist of a cup type bucked wheel assembly having six cups mounted on a vertical shaft. This shaft is held vertical in a yoke frame on two pivot points. This yoke frame while holding the moving the moving assembly protect its cups from damage from the floating bodies in flowing water also. The vertical shaft rest on a pivot point at the lower end which is adjustable. the upper end is held in position at a pivot point inside the magnetic contact chamber, which is made water right by a cap. The magnetic contact chamber is equipped with two contact switches the terminal of which are located outside on the body of the contact chamber. Only one switch is used at a time, the other is a spare and stand by and can be used immediately if one goes out of order. The other end of the contact terminals (earth) is the yoke frame itself and so a

common earth terminal has been provided on the yoke frame. The bucketed wheel rotates in between two pivots in the yoke frame. Each one revolution of the buckets wheel makes a contacts of the magnetic switch in the magnetic chamber which can be recorder on a counter. The yoke frame consist of a tail fin with a balancing weight, which moves in a slot and be adjusted at any place within the slot. The balancing weight is so adjusted so as to keep the current meter horizontal when suspended in water. The tail fin keeps the yoke frame with the bucket wheel to the upstream direction as the tail fin goes to downstream direction with the flow of water. The meter is suspended in water with the help of a suspension flat in deep water and by a suspension rod (wadding rod) in shallow water.

The current meter consists of the following accessories :-

1. water current meter with one space pivot.
2. suspension flat about 30 cm long.
3. suspension rod (wadding rod) 120 cm long.
4. wire rope 10 meter long with connecting slip.
5. connection wire with clip 10 meter long.
6. fish weight of 10 kg
7. screw drivers 2 nos.
8. spanner wrench 1 no.
9. duster 1 no.
10. oil can with machine oil 1 no,
11. digital electronic counter 1 no.

### **Packing**

The water current meter with item nos. 1,2,5 and 7 to 11 are packed in a polished wooden box, while fish weight, wire rope and suspension rod with necessary nuts and bolts are packed in another box.

### **Assembling of current meter for use**

The current meter when used in deep water is suspended with the help of suspension flat (item no. 2). The suspension flat has got 3 holes, the central part of the yoke frame

has got a slot for the suspension flat which is passed through the slot and fitted to the central hole with the help of a screw pin keeping the magnetic terminal upward. The fish weight is fitted to the lower hole of the flat by a bolt and the wire rope clip is fitted to the upper hole.

The conductor cable is also fitted to the terminal of current meter. The cable is a two core conductor having fitted with terminal connectors at one end and pin connection at the other end. Connect one wire terminal and to the earth terminal on the yoke body, connect another wire terminal to any one contact point on the magnetic chamber. The other end of the conductor cable is fitted with the pins connected of the two terminals CM in electronic counter. The detailed instructions for the operation of the electronic counter are within the counter box itself.

After fitting the current meter and releasing the bucket wheel on loosing, the lock nut the function of the current meter and counter is checked by giving a blow air to the bucket wheel. If everything is functioning properly the counter will record revolutions immediately, if there is and delay, a faulty reading, or play or resistance in the shaft the bucket wheel will not keep on moving till not stopped, the lower pivot may need adjustment which may be checked and removed.

Now the current meter is lowered in water to the desired depth with the help of wire rope keeping the conductor cable a bit loose than wire rope. When all is set the electronic counter is reset and started to counter revolution. Determining the number of revolutions per minute with the help of rating table and velocity of flowing water is determined. The rating table is pre calibrated chart for each and every current meter from a standard source and is entirely difference for each and every current meter.

The meter after use is taken out of water and wiped dry with the help of duster, both the pivot points are oiled and then stored. The power switch of the electronic counter should also kept off when storing after use.

