



LEVEL MEASUREMENT & CONTROL SOLUTIONS

OPEN CHANNEL FLOW METER LOCAL INDICATOR / & TRANSMITTER 191-P

The local indicator of Open Channel Flow Meter, Series 191 has been designed for use with various types of weirs and flumes commonly used in open channel flow measurement. Some of these are ...

- Sharp edge weirs or rectangular weirs.
- Broad crest weirs.
- Standing wave flume.

One of the most extensively used critical flow flumes is the Parshall flume whose head discharge relationship is ...

$$Q = K \times (H)^n$$

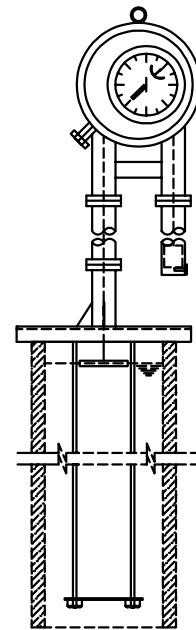
where

- Q = Rate of flow.
- K = Constant.
- H = Head rise in stilling well.
- n = Exponent (0.5 < n < 2.0).

K and n are decided by the geometry of the flume.

This is a certified intrinsically safe associated apparatus -X [Ex-ia] IIA & IIB T6 vide CMRI report no. CMRI/TC/H668 dated 07/05/97. Use of a suitable safety barrier (e.g. MTL787S+, MTL788R+, Baliga Stahl 9001/51-280-110-14, 9001/51-260-091-14, OSNA Z129/Ex, Z-428/Ex or equivalent) is necessary for intrinsic safety.

191-P measures the upstream level of liquid in converging section of flume or upstream of a weir throat by means of a float suspended in a suitably located stilling well connected to the weir / flume. The movement of the float is mechanically coupled to a pointer which reads the head and rate of flow on individually calibrated circular scales. Optional two wire transmitter converts the head rise into a proportional 4-20 mA signal for the remote indicator/ totalizer unit. The flowmeter is best suited for clear liquids such as waste water, treated effluent etc. It can also be used with liquids having suspended solids if measuring structure is designed to be self cleaning type (i.e. the average size of suspended solids and minimum rate of flow are such that no permanent accumulation of these solids takes place on any part of the weir / flume.). In such applications provision of a drain from the stilling well is a must to enable periodic cleaning. (A valve at the inlet to the stilling well from the measuring structure is required in all cases for calibration purposes.)



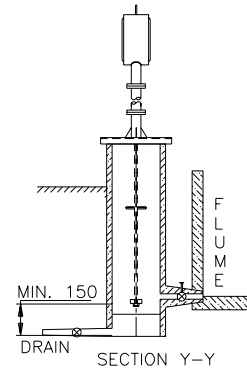
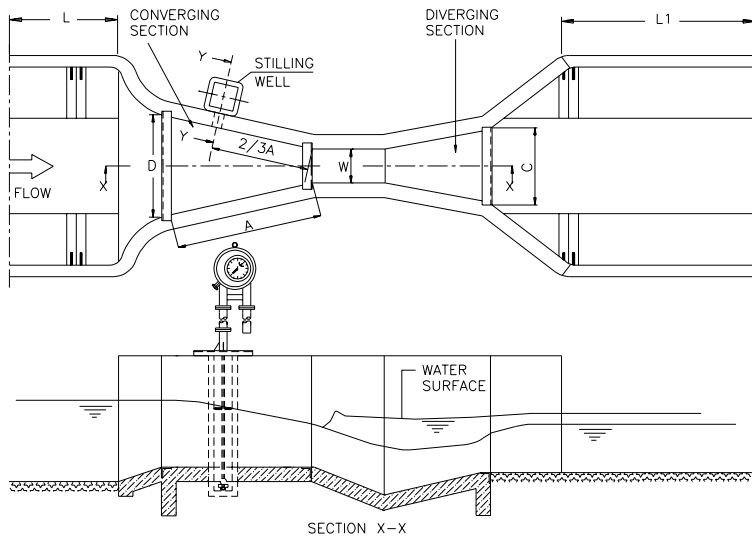
The accuracy of the flow measurement is affected by some external factors such as.....

1. It is largely dependent on the construction accuracy and state of maintenance of the measuring structure.
2. The specified accuracy is achieved only when headrise is greater than 120 mm and the flowrate is at least 10 % of the maximum flowrate.

SPECIFICATIONS

Accuracy	: ± 1 % of FSD.
Float	: SS316, 300 mm £.
Float cable	: SS316 stranded 1.6 mm £.
Float travel	: 1400 mm (Max.). 150 mm (Min.).
Counterweight	: CS Cd passivated.
Local indicator	: Mechanical dial type. Dial (200 £) graduated with three concentric scales, one for head and two for rate of flow. A second pointer indicates selection of correct flow scale.
Transmitter (Optional)	: 4-20 mA proportional to headrise.
Pedestal	: CS polyurethane painted.
Total weight	: 46 Kgs. approx.

INSTALLATION

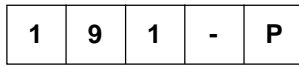


Nomenclature :

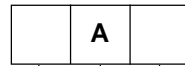
A	=	Length of side wall
C	=	Width of downstream end
D	=	Width of upstream end
W	=	Throat width
L	=	Approach length - upstream
L1	=	Downstream straight run

NOTE : The information provided here is for a Parshall flume. It is based on published data available & is indicative. The hydraulic design of the flow measurement structure is the responsibility of the purchaser.

ORDERING CODE



MODEL NUMBER



FUNCTION

Local indicator L
Local indicator + transmitter T

GUIDE ROD & BOTTOM ANCHOR MATERIAL

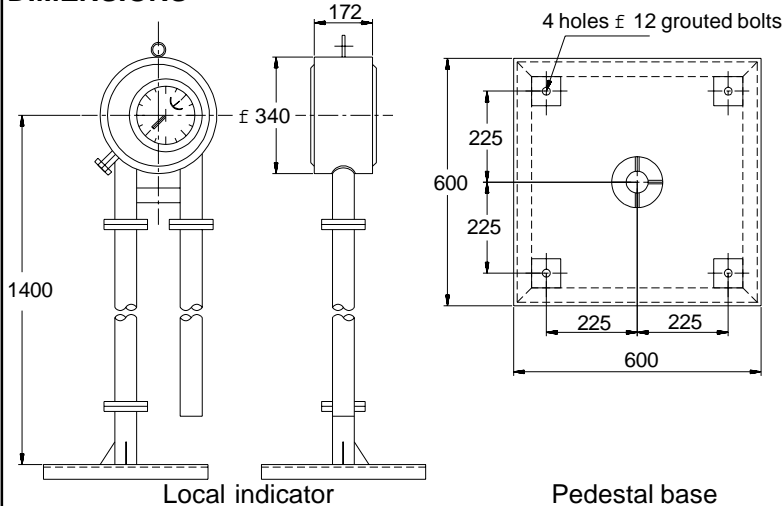
4 SS 304
6 SS 316

GUIDE ROD ASSEMBLY TYPE

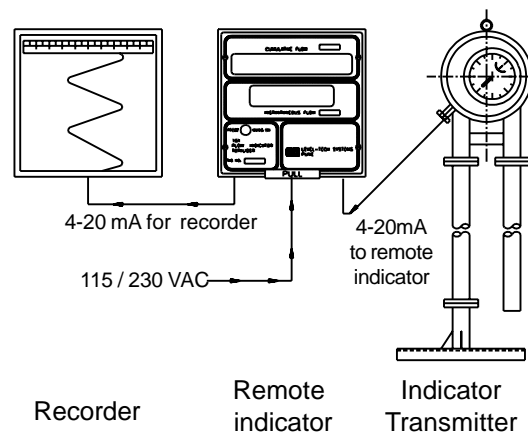
A Adjustable (Upto 2000 mm)

- NOTE :
1. PLEASE SPECIFY HYDRAULIC FLOW FORMULA, WHILE PLACING PURCHASE ORDER.
 2. For achieving intrinsic safety customer should procure one of the recommended safety barriers. These are not supplied by us.
 3. Remote indicator and recorders are supplied as optional accessories.

DIMENSIONS



GENERAL ARRANGEMENT



*** Continuous developments may necessitate changes without notice.

LF-191-0801 R 05 3/99

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