

TRADE AND COMMERCE  
CANADA

SD-GA.34

## STANDARDS DIVISION

OTTAWA, April 28, 1953.

## TYPE APPROVAL

BAILEY TYPE "CU" FLOW MECHANISM

The apparatus specified and illustrated herein has been duly approved by the Standards Division under the provisions of the Gas Inspection Act, Chapter 82, R.S.1927, as amended, and may be admitted to verification in Canada.

Apparatus Approved: Type "CU" Flow Mechanism, manufactured by the Bailey Meter Company Limited, Montreal, P.Q.

Application: Measurement of fluids in conjunction with standard orifice plates and approved pressure gauges.

## Rating of Apparatus:

Differential Ranges .. 53.97" water gauge; 107.94" water gauge; 215.88" water gauge  
Working Pressure ..... 800 p.s.i.

Description: The type "CU" flow mechanism is essentially a float-operated differential element and the manufacturer incorporates this mechanism in a variety of flow meters. For the purpose of gas measurement it may be associated with any approved static pressure element, integrator or other auxiliary device. Number suffixes on the type designation distinguish the various styles of meter employing this mechanism, but it is not considered that styles other than the "CU-35" and "CU-36" will be used for billing. The type "CU-35" is a rectangular case recording meter, and the type "CU-36" is similar but includes an integrator. The figure on the back of this circular shows the construction of the mechanism. A float rides on the surface of the mercury in the low-pressure leg and, by means of a forked lever, spindle, pressure-tight bearings and recording pen, transmits its motion to the chart where it is recorded in terms of flow. The high-pressure leg is a mercury reservoir or chamber which is connected to the float chamber through a U-shaped connection. Changes in differential pressure change the level of the float and consequently the record on the chart. The type "CU" fluid meters are calibrated to give maximum chart readings under a differential pressure of either 53.97, 107.94 or 215.88 inches of water when measuring gas flow. The correct water column reading for any point on the chart may be calculated by:

$$\left( \frac{\text{chart reading}}{\text{maximum chart reading}} \right)^2 \times \text{rated maximum differential.}$$

For convenience, the cardinal points are tabulated below:

Per Cent Chart		Differential Pressure (inches of water)		
10	.....	.54	1.08	2.16
20	.....	2.16	4.32	8.64
30	.....	4.86	9.71	19.43
40	.....	8.64	17.27	34.54
50	.....	13.49	26.98	53.97
60	.....	19.43	38.86	77.72
70	.....	26.45	52.89	105.78
80	.....	34.54	69.08	138.16
90	.....	43.72	87.43	174.86
100	.....	53.97	107.94	215.88.

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