

TRADE AND COMMERCE
CANADA

SD-GA.62

STANDARDS DIVISION

OTTAWA, December 29, 1954.

TYPE APPROVALBARTON TYPE 199 METER BODY AND TYPES 202 AND 208 FLOW METERS

The apparatus specified and illustrated herein has been duly approved by the Standards Division under the provisions of the Gas Inspection Act, Chapter 129, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Barton Type 199 Meter Body and Barton Types 202 and 208 Flow Meters, manufactured by the Barton Instrument Corporation, 1429 So. Eastern Avenue, Los Angeles 22, California, and distributed in Canada by Baker Instruments Limited, 185 Davenport Road, Toronto 5, Ontario.

Application: Measurement of gas in conjunction with standard orifice plates.

Rating of Apparatus:

Differential Ranges* 0-15, 0-20, 0-25, 0-50, 0-100,
0-150, 0-200 inches water gauge
Working Pressure Brass 300 p.s.i. Forged Stainless 2500 p.s.i.
(depends on chamber material) Forged Steel 1000 and 2500 p.s.i.
Forged Alloy 4500 p.s.i.
Static Pressure Ranges 0-50 p.s.i. to 0-5000 p.s.i.

*Note: The standard ranges are listed; however, intermediate ranges between the limits of 0-15 and 0-300 inches water gauge are approved.

Description: The Model 199 Meter Body is a bellows type differential element which the manufacturer considers to be rupture proof. The unit consists, essentially, of a central support plate to which are attached a pair of opposed, mechanically-linked, liquid-filled metallic bellows, pressure housings surrounding the bellows, and a torque-tube drive for transmitting movement of the bellows to the indicating or recording mechanism.

The outer or closed ends of the bellows are joined by a dual valve stem which passes through a hole in the central support plate. The bellows thus form twin chambers joined by an annular passage around the valve stem. These chambers are filled and permanently sealed with clean, non-corrosive, low-freezing-point liquid. Therefore, when a differential pressure is applied to the unit, the bellows assembly moves as a unit in the direction of the lower pressure. In doing so, the bellows on the higher pressure side decreases its volume while the bellows on the opposite side expands and the liquid within the bellows assembly must pass from one bellows chamber to the other through the annular passage between the valve stem and the central plate. Movement of the bellows is transmitted to the recording mechanism by means of the torque-tube assembly.

Dampening action is effected by the flow of the liquid from one side of the central support plate to the other. The dampening is externally adjustable.

When an excessive differential pressure is applied, liquid transfer will continue until one of the valves mounted on the stem connecting the two bellows closes against its valve seat located on the central plate. With this arrangement full line pressure may be imposed across the bellows unit in either direction without damage, regardless of the differential range of the instrument.

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