Department of consumer and corporate affairs / Ministère de la consommation et des corporations

STANDARDS BRANCH - DIRECTION DES NORMES

NOTICE OF APPROVAL G-82

OTTAWA July 15, 1971.

CANADIAN METER COMPANY, SERIES CVM, ROTARY TEMPERATURE COMPENSATED, POSITIVE DISPLACEMENT GAS METER

Apparatus

Model designation	3.5CVM-TC	5.3CVM-TC	11CVM-TC
Rated capacity, cu. ft. per hour	3,500	5,300	11,000
Swept volume per rev. of meter, cu. ft.	0.042	0.068	0.167
Maximum static pressure*, psig	125	125	125
Meter connections, flange	2"	3"	3"

Temperature compensation range	-20°F to +140°F
Base temperature (compensated volume)	60°F

*NOTE: These meters are not equipped with an instrument drive for auxiliary pressure correcting devices and they are intended, and APPROVED FOR USE ON LOW PRESSURE ONLY of approximately seven ounces per square inch or less.

Description

Except for the provision of temperature compensation, these meters are of the same design as non-compensated CVM meters, approved under circular G-65, and reference should be made thereto for the description and operational details of the basic metering unit.

The temperature compensated CVM meter, illustrated in this circular, has an end bell which carries a liquid filled temperature sensing probe, an integrating mechanism for temperature compensation and two counter registers which indicate the volumes passed in cubic feet at line conditions and compensated to 60°F base. The uncorrected register is driven directly from the meter through a magnetic coupling and suitable reduction gearing. Provision is incorporated to change the direction of rotation when the gas flow direction is changed. The registration of the temperature compensated register is

CANADIAN METER COMPANY SERIES CVM ROTARY TEMPERATURE COMPENSATED POSITIVE DISPLACEMENT GAS METER

dependent on the position of the integrating ring on the conical integrator output shaft.

In operation the input shaft to the integrator is geared to and driven by the meter. This shaft drives the ring, which in turn, drives a cone on which it rests. The large end of the cone is fitted with a gear which drives the compensated counter register. The position of the ring on the cone is guided by a yoke which is controlled by a link attached to the output arm of the temperature measuring system. As the temperature varies, the position of the ring in relation to the frustum of the cone changes.

The ratio of the diameters of the integrator's component parts is so arranged that when the ring is positioned by the yoke at 60°F the output shaft makes one full revolution for each full turn of the input shaft. For other temperatures the rate of revolution of the output shaft changes to effect the required temperature compensation. A circular scale located within the register and integrator assembly shows the temperature of the flowing gas.

Both registers are of eight digit capacity, however, the lowest two digits are covered by the faceplate of the register assembly so that the volume registration is displayed in 100 cu. ft. increments for both registers.

The CVM meter may be used for measurement of gas which flows in either direction through the meter, however the manufacturer regards the flow from left to right, when facing the register side of the meter, as the standard flow.

This rotary meter may be installed in either horizontal or vertical line and the piping should be arranged to prevent strains on the meter when direct support is not provided.

The measuring cartridge assembly of the CVM-TC meters may be interchanged between different housings of the same capacity meters, however, it must be emphasized that each cartridge shall be marked with a serial number and the same serial number must also appear on the nameplate attached to the meter housing. This serial number is to be considered as the serial number of the meter.

It shall be the responsibility of the utility to ensure that the end bell carrying the integrator assembly is properly sealed to meter housing.

The plastic cover enclosing the integrator assembly shall be sealed by the government inspector.

The nameplate attached to the meter housing shall include the following information: Maker's name, Model designation and serial number of the meter, Rated capacity of the meter and Maximum pressure rating.

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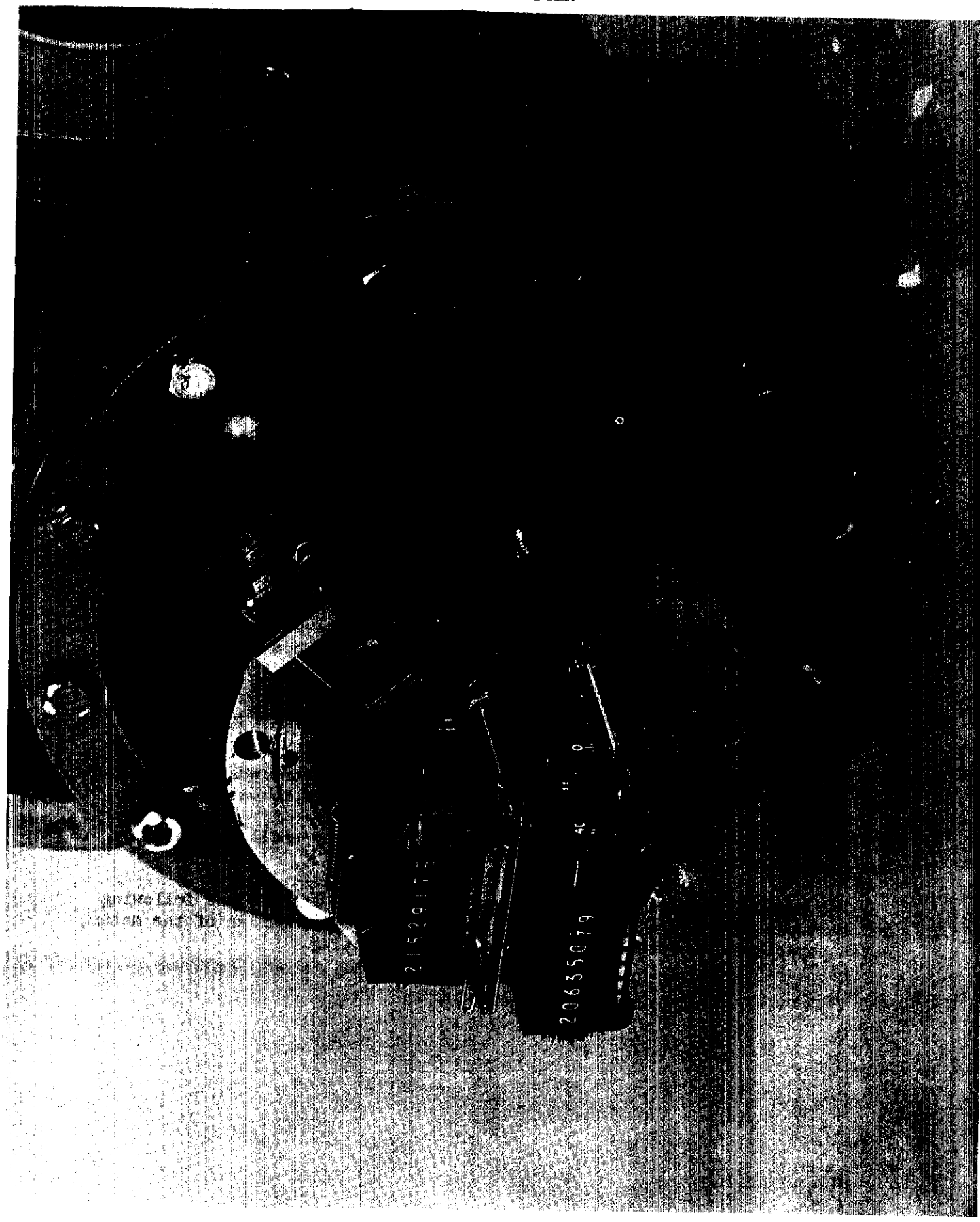

For field test procedure refer to Technical Gas Circular G-71/3.

Approval granted to:

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Milton, Ontario
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