



Consumer and  
Corporate Affairs

Consommation et  
corporations

Standards

Normes

**NOTICE OF APPROVAL  
AVIS D'APPROBATION**

S.WA-919

Ottawa, October 31, 1978

LIQUID CONTROLS - AUTOMATIC TEMPERATURE COMPENSATORS

MANUFACTURER: Liquid Controls Corporation  
North Chicago, Illinois  
Canadian Representative:  
R.N.G. Equipment Limited  
3311 St. Joseph Blvd. East  
Montreal, Quebec

DEVICES APPROVED: Automatic temperature compensators for use on approved Liquid Controls meters, installed at either truck loading racks or on vehicle tanks, models as listed below:

Temperature Volume Compensators

<u>Model Numbers</u>		<u>Gravity Setting</u>
<u>Former No.</u>	<u>Current No.</u>	
42300-1	D-5015	Variable
42300-2	D-5025	Fixed

Product Bellows

<u>Model No.</u>	<u>Range Deg. F</u>		<u>Tube Length Inches</u>	<u>Model No.</u>	<u>Range Deg. F</u>		<u>Tube Length Inches</u>
	<u>Min.</u>	<u>Max.</u>			<u>Min.</u>	<u>Max.</u>	
42700	-30	120	24	42720	50	200	24
42701	-30	120	48	42721	50	200	48
42706	-30	120	36	42730	150	300	24
42710	0	150	24	42731	150	300	48
42711	0	150	48	42741	250	400	48

Model 42706 is of stainless steel; all others are of brass.

Ambient Bellows - Operating Range: -30°F to +120°F.

Compensator Setting Ranges

Coefficient of expansion: 0.0000 to 0.0018/deg. F

API Gravity: 0 to 150 deg.

Specific Gravity: 0.500 to 1.000

APPLICATION: For use on approved models of Liquid Controls meters with which it is compatible in the metering of hot bunker oils, asphalts and liquefied petroleum gases. Refer to S.WA-963, S.WA-863 and S.WA-739 for meters for LPG.

DESCRIPTION: This device is fully described in the publication of Liquid Controls Corporation entitled "Automatic Temperature Compensator," copies of which are available at District Offices of Weights and Measures.

The Liquid Controls ATC is designed so that the drive between the meter and the net counter is by direct gearing, the amount of compensation required being added to this drive by means of a differential mechanism which is controlled by the movement of the product bellows. For example, with the product at the base temperature the differential mechanism is adjusted so that the NET register indicates the same as the GROSS register, and at other temperatures the compensator readjusts the differential mechanism from this setting so that the NET register indicates compensated gallons. When calibration of the GROSS register is required because of meter wear, etc., the master calibrator ahead of the registers is used.


TESTING AND LIMITS OF ERROR: Automatic temperature compensators shall be bench- and field-tested following procedures authorized by the Standards Branch. Limits of error are prescribed in Section 270 of the Regulations.

SPECIAL CONDITIONS: The following shall apply:

1. The Special Conditions listed in S.WA-844;
2. The Ministerial Specification for meters equipped with automatic temperature compensators.

REFERENCES: G6953-R96-2.  
Letters of Approval, May 8, 1973, Nov. 28, 1974.

CONDITIONS OF APPROVAL: Approval is granted under the Weights and Measures Act, S.C. 1970-71-72, Chapter 36, and the Weights and Measures Regulations P.C. 1974-1461 of June 27, 1974 for use in Canada under the general conditions of the said Regulations, and under any special conditions listed above.



John Armstrong  
Chief, Weights and Measures  
Legal Metrology Branch