

TS-282

Rev. D

P.D. Oscillating Piston Flowmeters:

31.75mm (1¼") RL125

38.10mm (1½") RL150

## L.P. GAS FLOWMETERS

1¼" TYPE 4D

1½" TYPE 4D

### SPECIFICATIONS

#### DESCRIPTION

The Actaris 1-1/2" and 1-1/4" Type 4D meters, with double case design, have been specifically designed for the custody transfer of Liquefied Propane & Butane Gas (LPG). These meters utilize the oscillating piston principle positive displacement measuring chamber technology. The standard meter includes a base meter with a register, differential control valve, combination vapor eliminator/strainer, inlet check valve, pressure relief valve, vapor check valve, and tubing kit. Options include: automatic temperature compensator (ATC) and ticket printing register.

#### DESIGN FEATURES

##### RELIABILITY

Rugged outer body components, coupled with a double case design, reduce differential pressures on the measuring chamber which insures long life and sustained accuracy.

##### FLEXIBILITY

Compact design readily adapts to right or left hand flow, and front or rear inlet positions. Both temperature compensated and uncompensated units are available.

##### EASE OF MAINTENANCE

Double case design affords fast replacement of the factory calibrated measuring chamber, reducing equipment down time. The piston is treated with a special Nituff® Teflon®<sup>1</sup> impregnation process which protects it from impurities and adds lubricity for smooth performance at low flow and higher operating pressures.

##### POSITIVE AND ACCURATE REGISTRATION

Time proven Neptune calibration gears and the change gear shifter provide positive adjustments to 0.02% for calibration accuracy. As the gear ratios are fixed, calibration cannot drift.

##### UNITS OF MEASURE

Actaris Model 800 Series Registers offer a full range of options in US Gallons, Litres and Imperial Gallons with 5 digit reset and printed ticket totals, and an 8 digit non-resettable totalizer.

<sup>1</sup> Or Similar Material



1¼" 4D Flowmeter w/833 Register

#### OPERATING SPECIFICATIONS

Model/Size	1-1/4" 4D		1-1/2" 4D	
Flow Rate	LPM		<b>(USG)</b>	
Q Max	114	<b>(30)</b>	227	<b>(60)</b>
Q Min	19	<b>(5)</b>	45	<b>(12)</b>
Pressure	Bars		(PSI)	
P Max	24.13	<b>(350)</b>	24.13	<b>(350)</b>
P Min	Note 1			
Temperature	°C		(°F)	
T Max	60	<b>(140)</b>	60	<b>(140)</b>
T Min	Note 2			
A.T.C. Effective Range	Compensates to basepoint of 15°C or (60°F)			
Max	52	<b>(+125)</b>	52	<b>(+125)</b>
Min	-23	<b>(-10)</b>	-23	<b>(-10)</b>
Connections: Inlet check valve and differential valve have 1-1/2" internal N.P.T. (pipe threads) for connection to external piping.				
Note 1:	Minimum of 1.034 Bars (15 PSI) is required to open differential control valve, plus pressure loss (P) in system and through dispensing hose and nozzle.			
Note 2:	Operation below -23°C (-10°F) is not recommended for mechanical A.T.C.			

**MATERIALS OF CONSTRUCTION**

PRESSURE CONTAINMENT COMPONENTS

Main case and cover,  
differential control valve,  
and vapor eliminator:..... NODULAR IRON  
(ASTM: A395)

Gaskets and seals:..... BUNA-N  
NEOPRENE

INTERNAL COMPONENTS

Measuring chamber case  
and gear train ..... BRONZE

Oscillating piston: ..... ALUMINUM, with NITUFF  
OR SIMILAR COATING

Gear train and other shafts.... 300 SERIES STAINLESS  
STEEL

Vapor eliminator float:..... 304 STAINLESS STEEL

**ACCESSORIES**

**Mechanical Registers**

Printing Registers Metric: Model 843-L15 (10 LITRE)

Printing Registers English: Model 833-0 (1 GALLON)

Ticket print unit with 5 digit reset and printed ticket total  
delivery (face up ticket, prints out zero start and final de-  
livery total) and 8 digit non-resettable totalizer.

Non-printing option

Metric: Model 841-L28 (10 LITRE)

English: Model 831-11 (1 GALLON)

**APPROVALS**

Meets or exceeds accuracy of flow and adherence to  
Custody Transfer of LPG per NIST.

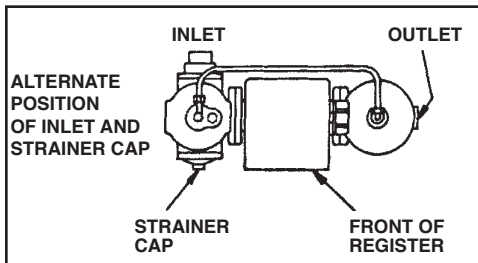
Certificate No. 89-140.

Non-Electrical Safety Standards for LPG Flowmeters:  
Underwriters Laboratory (UL)

Listing No. 436194002 (kll/0053576/80) (dtd 07/11/89)

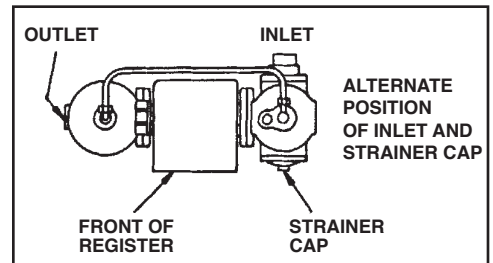
**AUTOMATIC TEMPERATURE COMPENSATOR**

The vast majority of LPG meters are produced with this  
option. The ATC mechanically modifies the rotational speed  
of the gear train output shaft to adjust (compensate) for  
ambient temperature variances, "correcting" the volume  
of product delivered to a standard of 15°C (60°F), regard-  
less of ambient or product temperature. If installed, most  
regulatory agencies require the ATC to be locked into the  
"engaged" mode and sealed to prevent fraud.



**ASSEMBLY OPTIONS**  
Normal assembly is right hand  
flow: Inlet at left rear, flow to right  
outlet at Differential Control Valve.

right  
hand  
assembly



left  
hand  
assembly

**WEIGHTS OF UNITS**

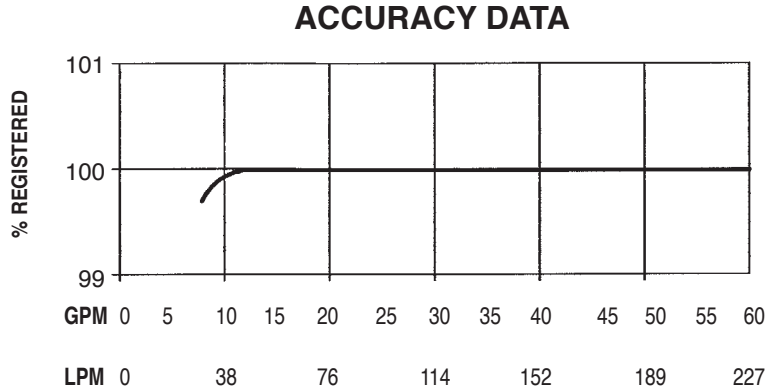
Kg (Lbs)

METER SIZE	REGISTER OPTION			
	841 OR 831		843 OR 833	
	non-ATC	ATC	non-ATC	ATC
1¼" 4D	49 (107)	57 (126)	50 (111)	59 (130)
1½" 4D	52 (114)	59 (129)	52 (114)	60 (133)

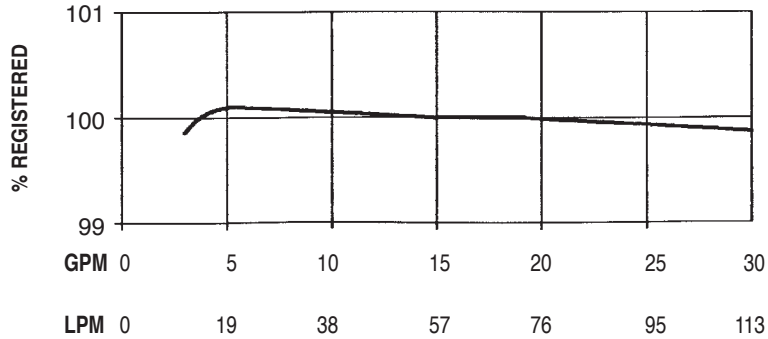
# ACCURACY

All Actaris 1-1/4" and 1-1/2" Type 4D LPG Flowmeters are tested for accuracy and calibrated to meet or exceed the parameters set forth in USA Department of Commerce, National Institute of Standards and Technology (NIST), Handbook 44.

**1-1/2" Type 4D Flowmeter with Differential Valve**

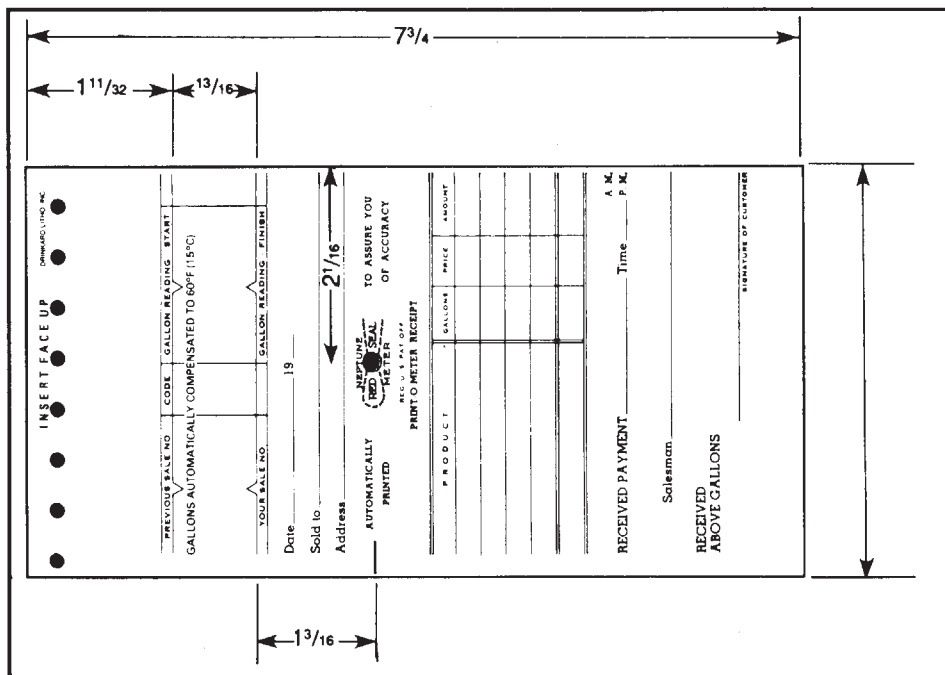


**1-1/4" Type 4D Flowmeter with Differential Valve**



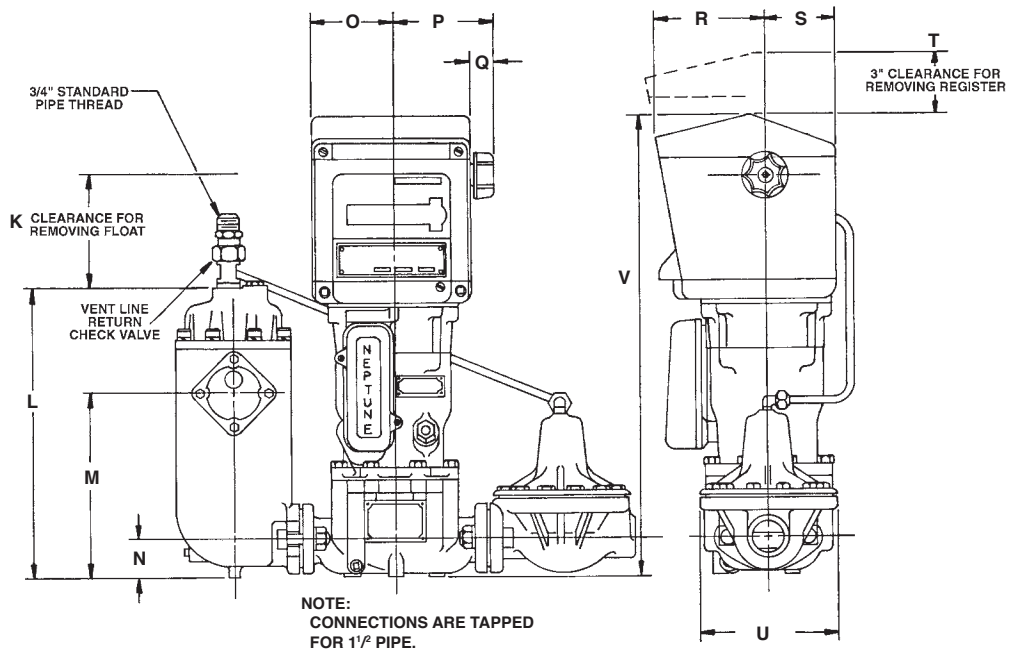
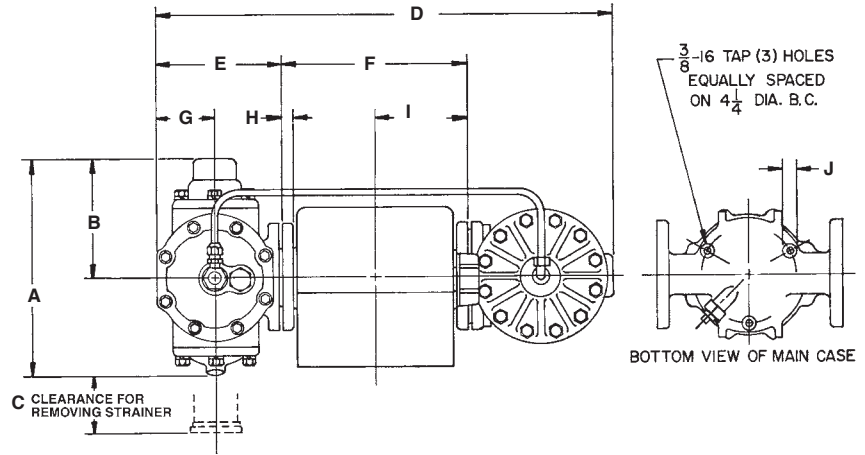
## RATE OF FLOW

### PRINTER TICKET DIMENSIONS



## DIMENSIONAL DATA

DIMENSIONS		
	in.	mm.
A	10.38	263.53
B	5.88	149.23
C	7.50	190.50
D	22.63	574.68
E	6.13	155.58
F	9.38	238.13
G	2.88	73.03
H	0.63	15.88
I	4.69	119.06
J	0.75	19.05
K	5.00	127.00
L	17.81	452.44
M	9.25	234.95
N	1.94	49.21
O	4.00	101.60
P	5.31	134.94
Q	1.31	33.34
R	5.25	133.35
S	4.25	107.95
T	3.00	76.20
U	6.75	171.45



DIMENSION V	in.	mm.
1-1/4" uncompensated	15.13	384.18
1-1/4" compensated	22.44	569.91
1-1/2" uncompensated	15.81	401.64
1-1/2" compensated	23.13	587.38

Specify Genuine Neptune Replacement Parts

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Specifications subject to change without prior notification.

