

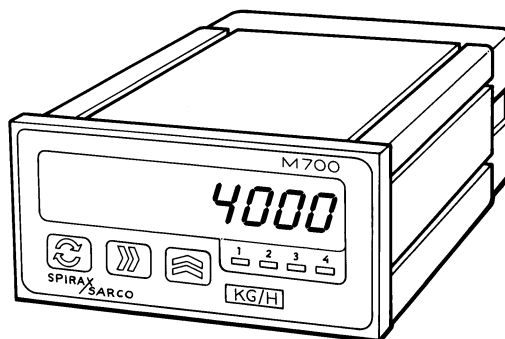
# spirax/sarco®

## M700 Display Unit

### Description

The Spirax Sarco M700 display unit is a panel mounted display unit which accepts a single 4- 20 mA input signal from a DP transmitter used with a Gilflo flowmeter or an orifice plate. The display unit is pre-programmed prior to despatch and may be linear, square root, or configured for enhanced accuracy. The unit is supplied with a manual and may be re-configured to suit changes of application.

Note: As all versions of the M700 display unit are programmed prior to despatch, care must be taken to ensure that they are used with the correct pipeline unit, i.e. as a matched pair. Failure to observe this precaution will result in inaccurate readings.



### Materials

No.	Description	Material
1	Case	Silver anodised aluminium
2	Front panel	ABS
3	Rear panel	ABS

### Versions available

Version	Supply voltage	Input signal	Flow curve	Output signal
1	110/120	4- 20 mA	Linear	None
2	220/ 240	4- 20 mA	Linear	None
3	110/ 120	4- 20 mA	Linear	4- 20 mA (rate)
4	220/ 240	4- 20 mA	Linear	4- 20 mA (rate)
5	110/ 120	4- 20 mA	Linear	100 m sec pulse (total)
6	220/ 240	4- 20 mA	Linear	100 m sec pulse (total)
7	110/ 120	4- 20 mA	Linear	4- 20 mA (rate) and 100 m sec pulse (total)
8	220/ 240	4- 20 mA	Linear	4- 20 mA (rate) and 100 m sec pulse (total)
9	110/ 120	4- 20 mA	Enhanced	None
10	220/ 240	4- 20 mA	Enhanced	None
11	110/ 120	4- 20 mA	Enhanced	4- 20 mA (rate)
12	220/ 240	4- 20 mA	Enhanced	4-20 mA (rate)
13	110/ 120	4- 20 mA	Enhanced	100 m sec pulse (total)
14	220/ 240	4- 20mA	Enhanced	100 m sec pulse (total)
15	110/ 120	4- 20 mA	Enhanced	4- 20 mA (rate) and 100 m sec pulse (total)
16	220/ 240	4- 20 mA	Enhanced	4- 20 mA (rate) and 100 m sec pulse (total)
17	110/ 120	4- 20 mA	Sq root	None
18	220/ 240	4- 20 mA	Sq root	None
19	110/ 120	4- 20 mA	Sq root	4- 20 mA (rate)
20	220/ 240	4- 20 mA	Sq root	4- 20 mA (rate)
21	110/ 120	4- 20 mA	Sq root	100 m sec pulse (total)
22	220/ 240	4- 20 mA	Sq root	100m sec pulse (total)
23	110 / 120	4- 20 mA	Sq root	4- 20 mA (rate) and 100 m sec pulse (total)
24	220/ 240	4- 20 mA	Sq root	4- 20 mA (rate) and 100 m sec pulse (total)

Versions 1 to 8 are pre-programmed with a linear flow curve. Flowrates (in engineering units) are allocated to 4 mA and 20 mA inputs and all intermediate values are derived based on a linear interpolation between these two values. These versions are designed for use with Gilflo / M640 steam mass flow transmitters.

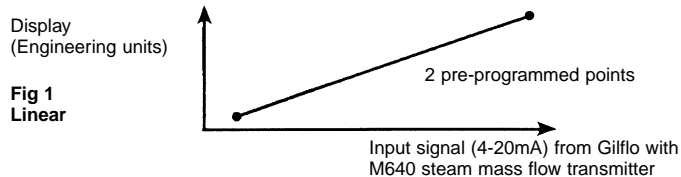


Fig 1  
Linear

Versions 9 to 16 are pre-programmed with the characteristics of a specific Gilflo flowmeter as determined during calibration to provide enhanced accuracy. Flowrates (in engineering units) are allocated to specific input values of signal current so as to eliminate any residual non-linearities in the Gilflo pipeline unit.

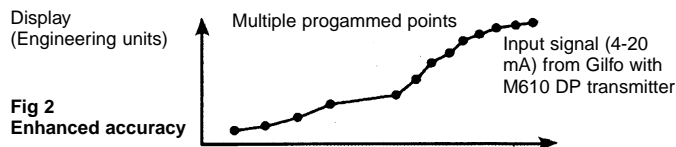


Fig 2  
Enhanced accuracy

Versions 17 to 24 are pre-programmed to perform square law extraction so a standard DP cell can be used. These versions are designed for use with orifice plates

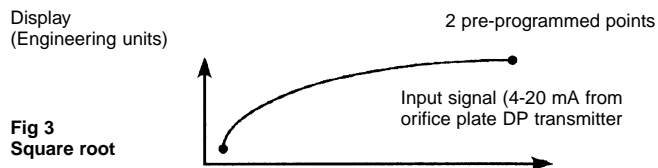
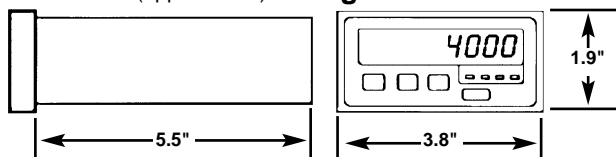


Fig 3  
Square root

## Technical data

<b>Supply voltage</b>	110/120 Vac 50/60 Hz or 220/240 Vac 50/60 Hz
<b>Isolation</b>	Fully isolated to 500 Volts
<b>Enclosure rating</b>	Front panel to NEMA4
<b>Type of mounting</b>	Panel mounting through cut-out with dimensions 3.6 x 1.7 inches
<b>Environmental limits</b>	50-104°F 5-95% RH non-condensing
<b>Display</b>	6 bright seven segment LED displays. During normal (default) condition, the display shows totalised flow in engineering units (6 digits + 6 further as overflow) Using the button on the front panel, the display can be made to indicate instantaneous rate of flow in engineering units. (64,000 maximum)
<b>Units of display</b>	These are customer specified at the time of ordering and a user selection card is included with the M700. The following options are standard: <b>Volumetric flow</b> m <sup>3</sup> / h, m <sup>3</sup> / min, ft <sup>3</sup> / h, ft <sup>3</sup> / min, l/h, l/min. <b>Mass flow</b> kg/h, kg/min, tonnes/h, lb/h, lb/min, tons/h. <b>Note:</b> Several blank spaces are included on the unit selection card for other units e.g. US gals/h
<b>Accuracy</b>	0.1% FSD. (M700 only)
<b>Input</b>	1 x 4 - 20 mA from a suitable differential pressure transmitter or flowmeter. A 20 volt excitation supply is available at the input terminals for powering the current loop. Internal impedance of the M700 current input is 50 ohms.
<b>Outputs</b>	<b>4 - 20 mA</b> isolated analogue retransmission for use with chart recorders, EMS's etc. Relates to instantaneous rate of flow. This retransmitted signal is internally processed to correct for non linearities (where the enhanced accuracy option is used) <b>Pulse output</b> 100 m sec for use with data loggers, EMS's etc. Relates to totalised flow. The value of totalised flow to trigger a pulse is pre-programmed based on customers specified values. (e.g. 1 pulse = 100 kg, 1000 kg etc.) This output is based on the displayed value of totalised flow and so corrects for non linearities (where the enhanced accuracy option is used).

## Dimensions (approximate) Weight 1lb.



## Maintenance

There are no user serviceable parts.

Size of panel cut-out:  
3.6" x 1.7"

## How to order

**Gilflo example:** 1 off Spirax Sarco M700 display unit as follows:

- Supply voltage - 220/ 240 Vac
- Analogue retransmission
- Engineering units kg / h, kg
- Enhanced flow curve
- Pulsed output (1 Pulse = 100 kg)

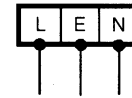
**Orifice plate example:** (for use with a standard DP transmitter which **does not** have a square law output).

1 off Spirax Sarco M700 display unit as follows:

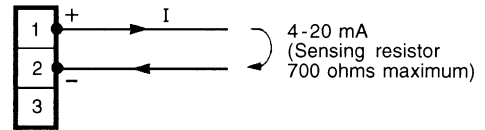
- Supply voltage - 110 / 120Vac
- Engineering units m<sup>3</sup> / min
- Square root flow curve

## Wiring diagrams

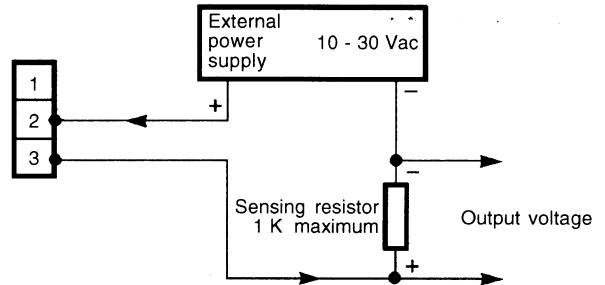
Mains power supply: (110 / 120, 220 / 240 Vac 50 / 60 hz)



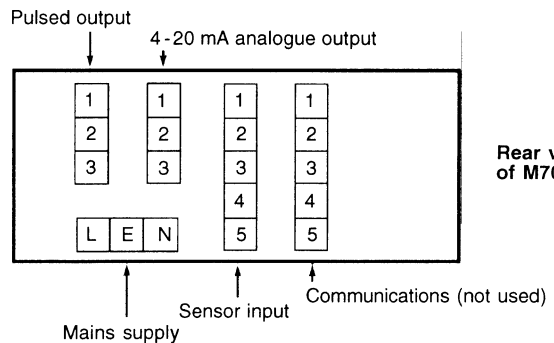
4 - 20 mA analogue output: (rate of flow)



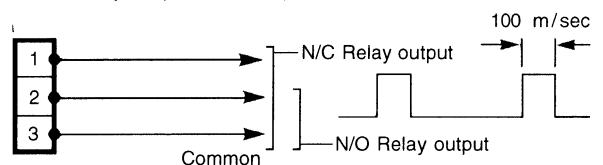
If the sensing resistor is greater than 700 ohms, use the following circuit:



## Connections



Pulsed output: (totalised flow)



Sensor input: (from DP transmitter)

