



# FLOW SWITCHES

# CM

- BELLOWS SEALED ● INTERCHANGEABLE PADDLES ●
- COMPACT SIZE ● 15 MM TO 300 MM LINES ●



SWITZER style CM Flow Switches are versatile instruments designed to accept different paddle sizes to handle a wide range of flow. Simple and rugged mechanical parts ensure high reliability and near zero failures.

The deflection of the paddle assembly due to velocity of flowing liquid against the restraining force of the range spring through a bellows sealed lever operates the microswitch at a pre-determined flow rate. Glandless design ensures total isolation between the process medium and the switch mechanism.

The enclosure is protected against ingress of solid particles and from dripping water.

Type CM ... M .... flow switches are recommended for water and the flow rate and switching ranges are tabulated overleaf.

For flow switches for liquids other than water, *please consult factory*. Customers are requested to furnish viscosity and specific gravity at operating temperature in their enquiry for selecting the correct size and range of the flow switch.

For severe applications other flow switch models BM/BGM are available with SS wetted parts in weatherproof enclosures. For hazardous area application, model GR-BM in flameproof enclosure is available. Please ask for Bulletin #40593.

## GENERAL SPECIFICATION

<b>Range</b>	Refer Table	<b>Mounting</b>	Horizontal or Vertical pipe
<b>Repeatability</b>	±2% of maximum flow	<b>Switching</b>	Snap acting SPCO (SPDT) microswitch rated 15A 230V AC (Resistive)
<b>Process Connection</b>	Screwed 1" BSPM	<b>Deadband</b>	5 – 10% of maximum flow (10% at minimum set value and 5% at maximum set value)
<b>Body</b>	Brass	<b>Enclosure</b>	ABS plastic weatherproof to IP:52
<b>Paddle</b>	304 SS	<b>Electrical Connection</b>	Standard 22 mm clear entry via grommet. 3/4" ET or 1/2" NPT cable entry (optional)
<b>Bellows</b>	Phosphor Bronze		
<b>Range Spring</b>	304 SS		
<b>Flange / Tee (Optional)</b>	CS / 304 SS		
<b>Max. Line Pressure</b>	10 BAR		
<b>Max. Process Temp.</b>	100°C		
<b>Pressure Loss</b>	60 – 80 mbar at max. flow		

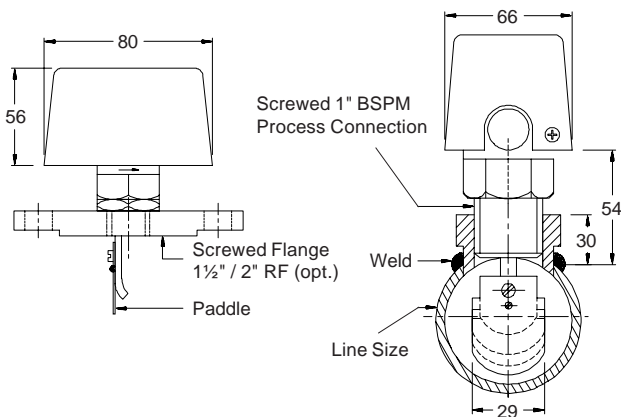
## FLOW RANGES

LINE SIZE NB MM	SWITCHING RANGE LPM + 10% OF FSR				MAX. FLOW (LPM WATER) AT VELOCITY 2 Mtrs / Sec
	ON FALLING FLOW		ON RISING FLOW		
	MIN.	MAX.	MIN.	MAX.	
015 ①	3	9	7	12	21
020 ①	4	11	8	14	38
025 ①	10	30	14	33	60
032	13	50	22	55	100
040	16	60	30	70	150
050	36	90	50	100	250
065	45	120	75	145	400
080	65	175	100	200	600
100	190	460	250	510	1000
	100	280	160	330	
125	380	890	500	1000	1500
	150	420	250	500	
150	600	1360	700	1500	2000
	200	510	350	610	
200	1210	2760	1500	2950	3700
	650	1510	950	1750	
250	1970	3830	2500	4200	6000
	1240	2410	1700	2800	
300	2600	4830	3400	5300	8500
	2000	3080	2700	3600	

**Notes** ① CM ... M .... models (supplied with integral tee) for 1/2" (15 mm NB), 3/4" (20 mm NB) and 1" (25 mm NB) lines. Direct on line mounting with threaded or flanged connections are not available for these sizes.

② In flanged version, the flange is not integral but screwed on to the body with a lock nut. The maximum line pressure for flanged versions should not exceed the limits specified in the specifications irrespective of the flange rating.

## MOUNTING DIMENSIONS



- Provide straight length of piping as below:  
**Upstream** : 10 pipe dia; **Downstream** : 5 pipe dia.
- In vertical pipes the flow should be from bottom to top. Please note set value may differ as much as 20% compared to horizontal pipe installation.

## ORDERING INFORMATION

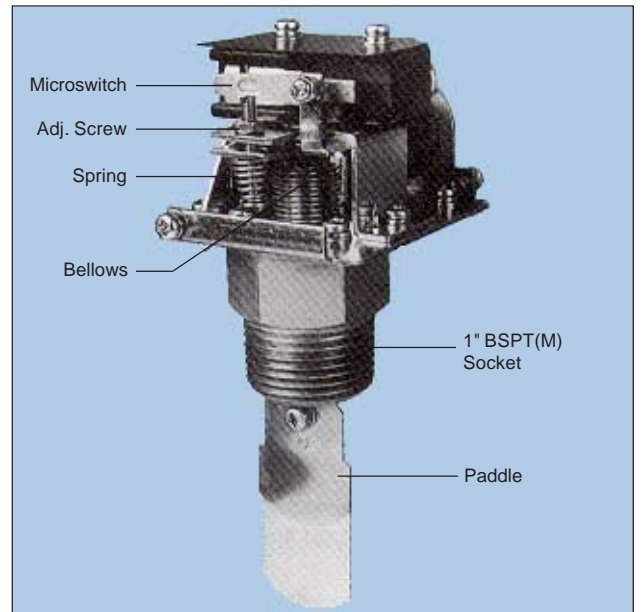
**BASIC CATALOG NO.** \_\_\_\_\_ **CM** **015** **M** **SL** **03**

**LINE SIZE**  
15 mm NB \_\_\_\_\_ **015**  
(For other line sizes, substitute appropriate line size eg., 020 for 20 mm dia line 100 for 4" NB line etc.)

**WETTED PARTS**  
Brass body (opt. with CS Flange / Tee ②),  
Ph. Br. Bellows & 304 SS Paddle \_\_\_\_\_ **M**

**PROCESS CONNECTION**  
Threaded to 1" BSPM \_\_\_\_\_ **TH**  
Flanged to 1 1/2" ANSI 150 RF \_\_\_\_\_ **FA**  
Flanged to 2" ANSI 150 RF \_\_\_\_\_ **FB**  
Flanged to non standard size \_\_\_\_\_ **FX**  
With integral Tee \_\_\_\_\_ **SL**

**SWITCHING**  
15A 230V AC microswitch (SPDT) \_\_\_\_\_ **03**



**Prior notification of changes in specification is impracticable due to continuous development.**

FOR **SWITZER'S** OFFICES IN INDIA

CHECK AT:

<http://www.switzerinstrument.com/offices.htm>