

Flow indicating switch Model UZ

WIKA data sheet FL 70.04

Applications

- Furnace
- Foundry
- Pumps
- Special purpose machines

Special features

- No primary elements
- Indication in desired flow units
- Threaded or flanged connection
- Control switching option
- Only for water flow measurement



Flow indicating switch, model UZ

Description

Style UZ Direct Reading Flow Indicators/Indicating Switches are versatile instruments designed to accept different paddle sizes to handle a wide range of water flow. These are available with either 304 or 316SS wetted parts. Inline versions with screwed or flanged ends are available for line sizes from 15 to 50 mm as standard.

The easy to fix design reduces installation cost and down time and also eliminates complexity involved in conventional flow measuring methods which warrant primary flow elements and secondary flow measuring devices. Simple mechanism ensures high reliability and near zero failures. A spring supported paddle is deflected by the flow which actuates the metering unit that is completely isolated from the flow chamber by

means of a metal bellows seal. The metering gear unit transduces the paddle movement into a pointer travel on a calibrated scale of $260^\circ \pm 10^\circ$ for direct flow indication.

One or two sub-miniature microswitches can be provided inside the case for setting control/alarm function. The switching point can be set between 10% (falling) to 90% (rising) of FSR of the scale range by adjusting a setting screw which can be locked later. The adjustable setting is achieved by varying the position of the microswitch against a cam assembly.

The adjustments are accessible from the front after removing the gauge glass. The switch function is indicated by an optional front mounted bicolour LED (red and green).

Specifications

Basic information	
Type	<ul style="list-style-type: none"> ■ Flow indicator ■ Flow Indicating switch
Case	<ul style="list-style-type: none"> ■ 304 SS for 6" dial ■ Pressed sheet steel for 4" dial
Dial nominal size	<ul style="list-style-type: none"> ■ 6" Standard ■ 4" optional
Dial	Aluminium, white, black lettering
Scale	Non linear
Window material	<ul style="list-style-type: none"> ■ Toughened safety float glass for 6" dial ■ Acrylic for 4" dial
Flow direction	Left to right
Wetted parts	
Body	<ul style="list-style-type: none"> ■ 304 SS ■ 316 SS
Flange (optional)	<ul style="list-style-type: none"> ■ 304 SS ■ 316 SS
Paddle	<ul style="list-style-type: none"> ■ 316 SS
Seal 'O' Ring	<ul style="list-style-type: none"> ■ Nitrile ■ Viton® (optional)
Accuracy	
Accuracy	±3% of FSR maximum flow
Pressure loss	200 mbar at maximum flow
Switch rating	5A 250/125V AC
Maximum process temperature	100°C
Output signal	
Scale ranges	→ See table 1
High Low gap	15% of FSR
Switch setting	Between 10% of FSR (falling) ... 90% of FSR (rising)
Response time	<1 second
Maximum line pressure	<ul style="list-style-type: none"> ■ 16 bar static ■ 6 bar dynamic
Switch rating	5A 250/125V AC
Switch action	Optional through snap acting SPDT microswitch
Switch differential	Within 15% of maximum flow
Electrical connection	<ul style="list-style-type: none"> ■ Standard through DIN 43650 Socket ■ Optional 1/2" NPT(F) per ASME B1.20.1 through external terminal block.
Process connection	
Type	<ul style="list-style-type: none"> ■ Screwed ■ Flanged
Mounting	Inline version suitable for vertical or horizontal pipes For vertical pipe flow direction bottom to top only
Ingress protection	<ul style="list-style-type: none"> ■ IP66 for 6" dial ■ IP65 for 4" dial

* Viton® is a registered trademark of DuPont Dow Elastomers

Ordering matrix

Type

Flow indicator / indicating switch _____ **UZ**

Line size

15 mm NB _____ **015**
 20 mm NB _____ **020**
 25 mm NB _____ **025**
 32 mm NB _____ **032**
 40 mm NB _____ **040**
 50 mm NB _____ **050**
 65 mm NB _____ **065**
 Non standard size (to specify) _____ **□□□**

Body Material

304 SS _____ **4**
 316 SS _____ **2**

Process connection

Screwed (with pipe thread same as nominal pipe size)

BSP(F) per ISO 288/1 _____ **SL**
 NPT(F) per ASME B1.20.1 _____ **SM**

Flanged (refer respective line size in page no.4 of 4)

3/4" ANSI 300 RF _____ **F0**
 1" ANSI 150 RF _____ **F1**
 1" ANSI 300 RF _____ **F2**
 1 1/4" ANSI 150 RF _____ **F3**
 1 1/4" ANSI 300 RF _____ **F4**
 1 1/2" ANSI 150 RF _____ **F5**
 1 1/2" ANSI 300 RF _____ **F6**
 2" ANSI 150 RF _____ **F7**
 2" ANSI 300 RF _____ **F8**
 2 1/2" ANSI 150 RF _____ **F9**
 2 1/2" ANSI 300 RF _____ **FA**

Switching

Not provided _____ **0**
 One switch (high or low) _____ **1**
 Two switches (high and low) (not possible in 4" dial) _____ **2**
 Two switches (for DPDT action) (not possible in 4" dial) _____ **3**

LED indication

None _____ **0**
 One LED for indication of one switch _____ **1L**
 Two LED for indication of two switches _____ **2L**

Dial size

6" standard _____ **A**
 4" optional _____ **B**

Seal 'O' ring

Buna-N _____ **OB**
 Viton _____ **OV**
 EPDM _____ **OE**

Electrical entry

Single entry through DIN connector _____ **O**
 Dual entry through DIN connector (not possible in 4" dial) _____ **NO**
 Single entry through 1/2" NPT(F) per ASME B1.20.1 external terminal box (not possible in 4" dial) _____ **AE**
 Dual entry through 1/2" NPT(F) per ASME B1.20.1 external terminal box (not possible in 4" dial) _____ **NE**
 7 pin connector through external housing _____ **CE**

Range table

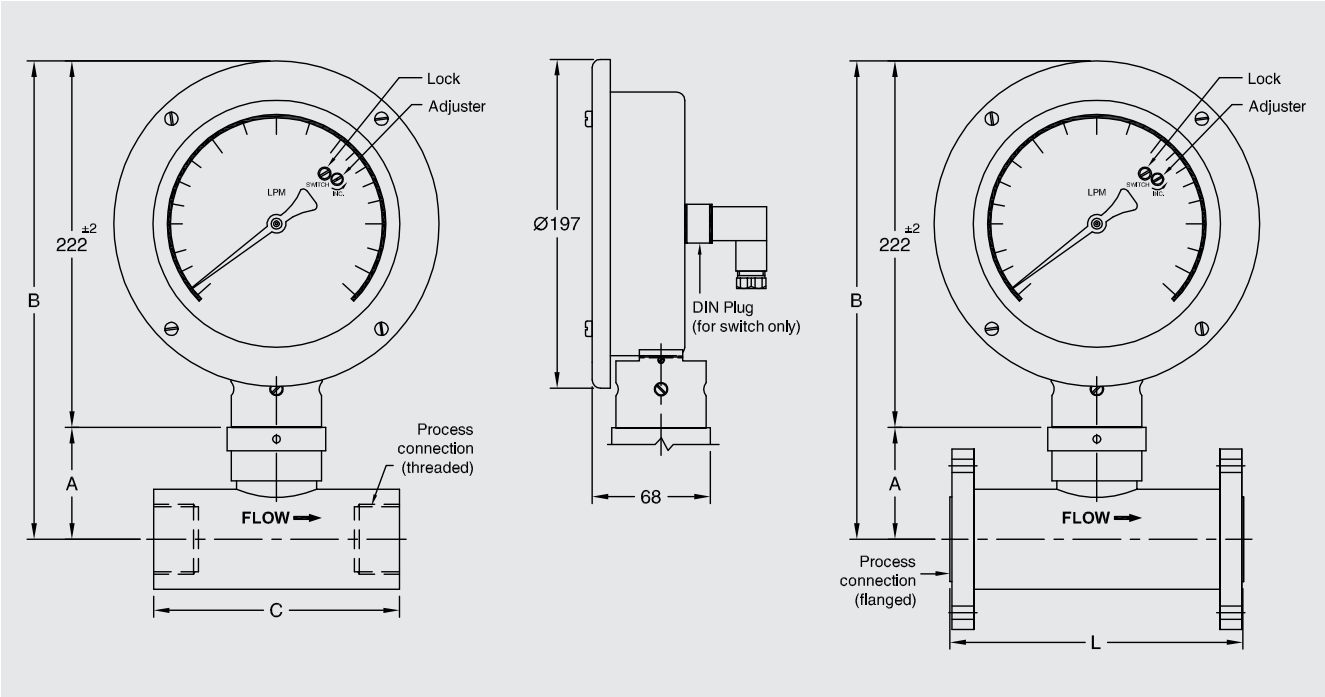
Size code	Screwed version thread size BSP(F)	Line pressure (BAR)		Indicating / switching range LPM (water)				Maximum flow at 2m / sec velocity LPM (water)	
				Standard		Optional			
		Static	Dynamic	Minimum	Maximum	Minimum	Maximum	Standard	Optional
015	1/2"	16	6	4	40	2	20	60	40
020	3/4"	16	6	6	60	4	40	100	60
025	1"	16	6	10	100	6	60	180	100
032	1¼"	16	6	20	200	10	100	300	180
040	1½"	16	6	30	300	20	200	400	300
050	2"	16	6	50	500	30	300	600	400
065	2½"	16	6	50	500	30	300	600	400

Dimensions in mm

6" dial

Thread connection

Flanged connection



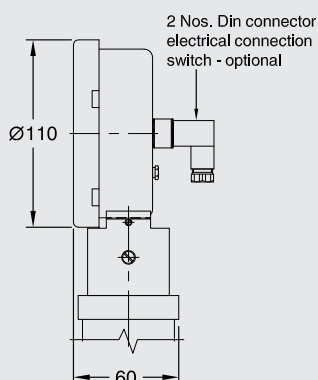
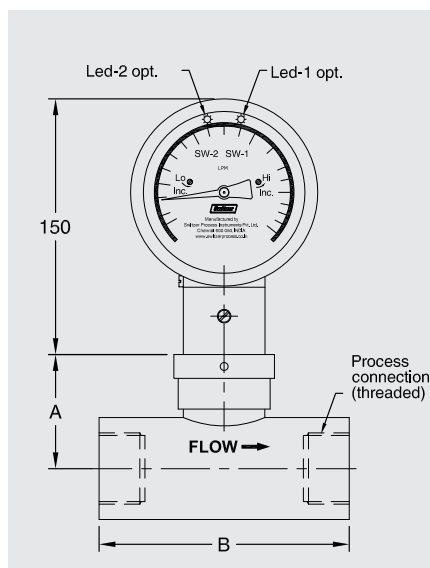
Size code	Threaded connection (BSP)	A ^{±1}	B ^{±2}	C ^{±2}
15	1/2"	58	280	66
20	3/4"	63	285	74
25	1"	56	278	87
32	1 1/4"	66	288	104
40	1 1/2"	72	294	111
40 ... 50	2"	72	294	130
50	2"	84	306	130
50 ... 65	2 1/2"	84	306	130

Size code	Flanged connection	A ^{±1}	B ^{±2}	L ^{±2}
15	1" - 150	58	280	89
	1" - 300			96
20	1" - 150	63	285	97
	1" - 300			104
20	3/4" - 150	63	285	95
	3/4" - 300			101
25	1" - 150	56	278	110
	1" - 300			117
32	1 1/4" - 150	66	288	131
	1 1/4" - 300			137
40	1 1/2" - 150	72	294	140
	1 1/2" - 300			146
50	2" - 150	84	306	163
	2" - 300			170
40 ... 50	2" - 150	72	294	163
	2" - 300			170
50 ... 65	2 1/2" - 150	84	306	170
	2 1/2" - 300			176

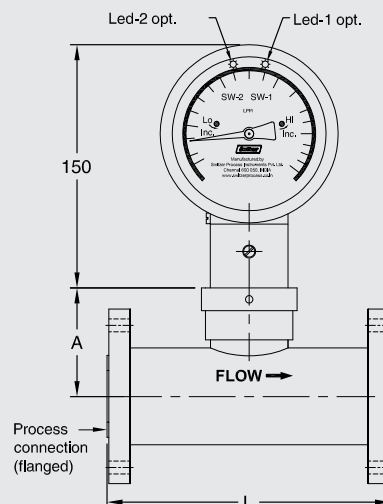
Dimensions in mm

4" dial

Thread connection



Flanged connection



Size code	Threaded connection (BSP)	A ^{±1}	B ^{±2}
15	1/2"	58	66
20	3/4"	63	74
25	1"	56	87
32	1 1/4"	66	104
40	1 1/2"	72	111
40 ... 50	2"	72	130
50	2"	84	130
50 ... 65	2 1/2"	84	130

Size code	Flanged connection	A ^{±1}	L ^{±2}
15	1" – 150	58	89
	1" – 300		96
20	1" – 150	63	97
	1" – 300		104
20	3/4" – 150	63	95
	3/4" – 300		101
25	1" – 150	56	110
	1" – 300		117
32	1 1/4" – 150	66	131
	1 1/4" – 300		137
40	1 1/2" – 150	72	140
	1 1/2" – 300		146
50	2" – 150	84	163
	2" – 300		170
40 ... 50	2" – 150	72	163
	2" – 300		170
50 ... 65	2 1/2" – 150	84	170
	2 1/2" – 300		176

Ordering information

Type / Line size / Body material / Process connection / Switching / LED indication / Dial size / Seal 'O' ring / Electrical entry

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