

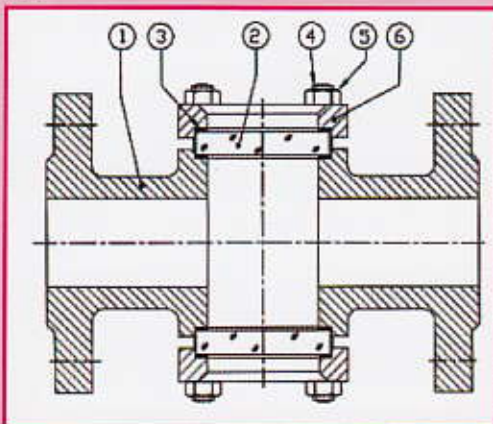
# ASVIN SIGHT FLOW INDICATORS

*For Process Industries*

**ASIAN INDUSTRIAL VALVES AND INSTRUMENTS** was formed in 1983 to meet the requirement of good quality valves and instruments for process industries. Over a period of time Sight Flow Indicators were established consequent upon favourable market acceptance. Flow indicator bodies are designed to provide smooth flowing contours which minimise turbulence and pressure loss, structural stability and full mechanical strength to withstand torsional forces caused by external piping strength under specified service condition. With the recent development of a wider range of materials, it is possible to use ASVIN Flow Indicators even for more severe corrosion duties and adverse temperature condition. ASVIN Sight Flow indicators manufactured in size 15NB to 500NB, are used on a wide variety of liquid and gaseous services. ASVIN Flow Indicators can be furnished with a variety of special accessories and options to meet specific application requirements. Options include Flanged, Threaded, SW BW etc., A variety of end flange facings can be provided and flanges can be drilled of different international specifications. ASVIN Flow Indicators have no moving parts other than Rotating wheel or Flapper, Therefore they can be relied upon to give long and trouble free operation - ASVIN Sight Flow Indicators are designed and build to provide instantaneous visual indication of a liquid or gas flowing through a pipe line. They can be used either vertically or horizontally depending upon the accessories used. The versatile design offers two models, Double window and Full view.

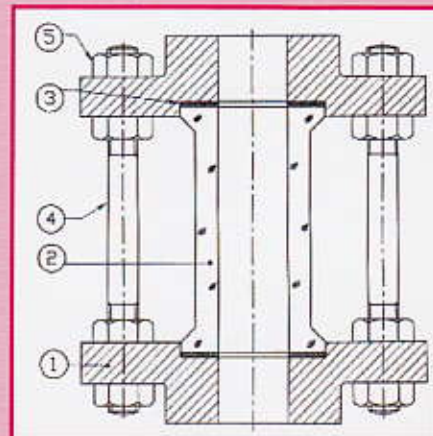
### DOUBLE WINDOW SIGHT FLOW INDICATOR : FULL VIEW SIGHT FLOW INDICATOR

Here two circular flat glasses are clamped in Indicator body and seal off the space at front and back. ASVIN double window Sight Flow Indicators can be supplied with Drip tube, Rotating wheel or Flapper, ASVIN Angle type Double Window Sight Flow Indicators can also be furnished where straight line Indicators are not suitable.



Sectional view of Double Window Straight Pattern ASVIN Sight Flow Indicator - Flanged connection. (Drip tube / Roating wheel / Flapper - not Shown)

One number of tubular glass is clamped in between two bodies and seal off the space at front and back. 360° visibility is achieved by using tubular glass here. Designs are available to protect the glass from the possibilities of breakage by external forces. ASVIN Full view Sight Flow Indicators can be supplied with Drip tube.

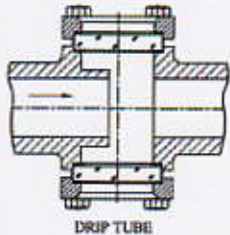


Sectional view of Full View ASVIN Sight Flow Indicator Flanged connection - Drip tube type. Glass protection is not shown.

Item No.	Description	Material*
1.	Body	Cast steel / Carbon Steel / AISI 304 / AISI 316 / Monel / Inconel / Hastelloy / PVC / PP / HDPE or Other corrosion resistant material
2.	Glass	Borosilicate / Toughened / Moulded / Perspex
3.	Gasket	PTFE / Glass Filled PTFE / Re-inforced PTFE / Buna 'N' / Neoprene / CAF / Graphited / Graphoil / Polyurethane / EPDM
4.	Stud	High tensile steel / SS304 / SS316 / A193 Gr. B7 / Alloy steel
5.	Nut	High tensile steel / SS304 / SS316 / A194 Gr. 2H / Alloy steel
6.	Cover Plate	Carbon steel / AISI 304 / AISI 316 / Forged steel / Cast steel

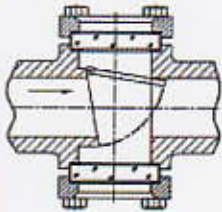
\* Materials of different combinations are available, apart from standard, for highly corrosive applications.

ASVIN manufactures JACKETTED Double Window Sight Flow Indicators also. Jacket allow application of heat to the indicator body to maintain higher and more precise control of the process temperature, preventing buildup or solidification in the system. Partial Jackets are the most economical, providing heat transfer to the body of the indicator. These are designed for non critical processes. Full Jacketted ASVIN Double Window Sight Flow Indicator provides the fastest and most uniform of heat allowing precise temperature control at higher temperature for more critical processes. The jacket encompasses the complete Indicator body including the contact with oversized Indicator flanges. These can be supplied with accessories like Flapper, Drip tube or Rotating wheel. The heating medium is piped through threaded type.



DRIP TUBE

To indicate intermittent flow especially where there is insufficient volume to fill the line. Can be used for horizontal or vertical lines. Best suited for vertical downward flow. Can be provided for Full view design also.



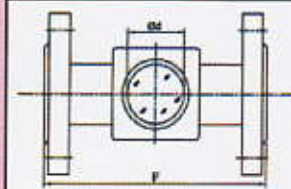
FLAPPER

It rests against the inlet passage during no flow conditions. The inclination depends upon the level or intensity of flow. Can be used for horizontal line and vertical line only on upward flow. Best suited for transparent or slightly opaque solutions. Acts as Non-Return Valve as this presents reversed flow. Can be used for gaseous application also. Not recommended for Full view design.

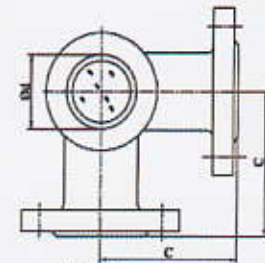


ROTATING WHEEL

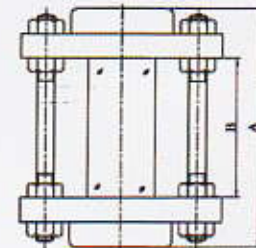
Suited to any position, Vertical / Horizontal. Used to pipelines carrying dark opaque solutions where rotation of the wheel is easily detected. Suited for transparent solutions and gaseous services also. Wheel rotates proportionate to the velocity of flow. Can not be provided for Full view design.



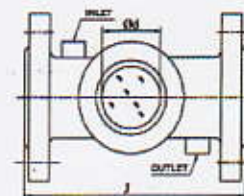
STRAIGHT PATTERN



ANGLE TYPE



FULL VIEW



JACKETTED TYPE

ASVIN Sight Flow Indicator Size NB	Double Window Indicator				Full View Indicator		Jacketted type Sight Flow Indicator			
	Straight Pattern		Angle Type		A	B	Indicator Size NB	Flange Size NB	J	d∅
	F	d∅	C	d∅						
15	115	20	75	20	120	65	15	25	155	20
20	120	20	90	20	120	65	20	40	165	20
25	150	25	95	25	120	65	25	40	190	25
40	165	40	115	40	165	90	40	50	210	40
50	180	50	130	50	180	105	50	65	225	50
65	220	65	135	65	180	105	65	80	260	65
80	250	80	150	80	180	105	80	100	305	80
90	265	90	160	90	180	105	90	125	320	90
100	280	100	180	100	200	115	100	125	340	100
125	300	125	195	125	200	115	125	150	370	125
150	320	150	215	150	200	115	150	250	430	150
200	405	200	255	200	-	-	200	250	490	200
250	475	250	290	250	-	-	250	300	575	250
300	545	300	330	300	-	-	300	350	640	300

**Face to face distance of ASVIN Sight Flow Indicators. All the dimensions given are in millimeter. The above are standard. Can be changed to meet the customer requirement on special request.**

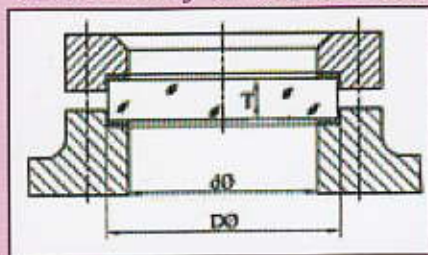
*Standard glasses\*available with ASVIN*

Size NB (mm)	Glass Dimension Ø D x T (mm)	Visible dia Ø D x T (mm)	Permissible working Pressure (P) in bar
15	30 x 15	20	230
20	30 x 15	20	230
25	35 x 7	25	35
25	35 x 10	25	70
32	45 x 10	32	45
32	45 x 12	32	65
40	55 x 10	40	30
40	60 x 10	45	24
40	60 x 12	45	35
40	60 x 15	45	54
50	65 x 12	50	30
50	65 x 15	50	45
65	80 x 10	65	12
65	80 x 12	65	18
65	80 x 15	65	28
65	80 x 20	65	50
80	90 x 10	75	10
80	95 x 15	75	20

Size NB (mm)	Glass Dimension Ø D x T (mm)	Visible dia Ø D x T (mm)	Permissible working Pressure (P) in bar
80	100 x 10	80	8
80	100 x 15	80	18
80	100 x 20	80	32
80	100 x 25	80	50
100	125 x 15	100	11
100	125 x 20	100	21
100	125 x 25	100	32
100	125 x 30	100	47
125	150 x 15	125	8
125	150 x 20	125	14
125	150 x 25	125	22
125	150 x 30	125	32
150	175 x 20	150	10
150	175 x 25	150	16
150	175 x 30	150	22
200	225 x 30	200	13
250	275 x 30	250	8
300	325 x 30	300	6

\*Special dimensional design for higher pressure & temperature available on request.

**Calculation of Glass Thickness**



$$T = 0.55 dm \sqrt{\frac{P.S}{10 Bs}}$$

T : Theoretical Minimum glass thick in mm

dm :  $\frac{D + d}{2}$  Mean Sealing diameter in mm

DØ: Glass outside diameter in mm

dØ : Sealing inside diameter in mm

P : Max. permissible pressure in bar

Bs : Min. value of bending strength in N/mm<sup>2</sup>  
: > 160 N/mm<sup>2</sup>

S : Safety factor

: Normally 'S' value Can be taken '8'

**Technical Characteristics of Toughened Glass**

Bending Strength	> 160 N / mm <sup>2</sup>
Surface Compressive stress	100 - 140 N / mm <sup>2</sup>
Plane Parallelism & Flatness	< 0.15 mm
Thermal Shock resistance	ΔT. min. 265 <sup>o</sup> C
Max. Permissible temperature	300 <sup>o</sup> C
Protected Mica	320 <sup>o</sup> C

**Temperature rating at atmospheric pressure**

Body Material	Working Temp. Max. °C	Gasket Material	Working Temp. Max. °C
Bronze	280	PTFE	250
Cast Iron	220	Graphoil	600
Carbon Steel	540	Rubber	105
Stainless Steel	560	CAF Style 54	550
Monel	800	Neoprene	125
Hastelloy	1100	Nitrile	130
Polypropylene	200	Viton	300
PVC	60	Silicon	300

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