



ENGINEERED LIQUID FLOW SOLUTIONS



VISIBILITY AND RELIABILITY

SIGHT FLOW INDICATORS & SIGHT WINDOWS

SIGHT FLOW INDICATORS

KENCO Engineering Company offers a variety of Standard KSF (cast body), Full-view, and Armored Sight Flow Indicators, as well as, a line of Sight Windows. All products are hydrostatically tested to ensure reliability in harsh operating conditions. KENCO Sight Flow Indicators provide a window into piping. They are a cost effective and efficient way to visually monitor the flow of fluids, and to determine if any problems exist along the process pipeline. These inexpensive, simple devices, allow operators to observe flow rate, direction, color and clarity. These indicators can be deployed in one of two ways: (1) individually at critical points along fluid lines where changes, interruptions or contamination is likely to occur, or (2) in groups where simultaneous monitoring of multiple fluid lines is necessary.

APPLICATIONS

One of the advantages of sight flow indicators is their application versatility. Common applications involve monitoring fluid flow through filter, cooling, and intake / outlet pumping lines, as well as numerous other industrial processes. In addition, sight flow indicators are useful as backups for meters, switches and other control devices.

INDUSTRIES SERVED

CHEMICAL / PETROCHEMICAL

Filter Line Monitoring Distilling Operations Dye / Ink Color Paint / Varnish Consistency Chemical Conversion Processes General Refinery Piping

PETROLEUM

Drilling Pump Operations Oil / Water Separation Loading Terminals

OEM

Compressor Water Flow Solvent Recirculation Pre- and Post-Filter Trap Monitoring **POWER** Turbine Lubricant Flow Cooling Line Water Flow

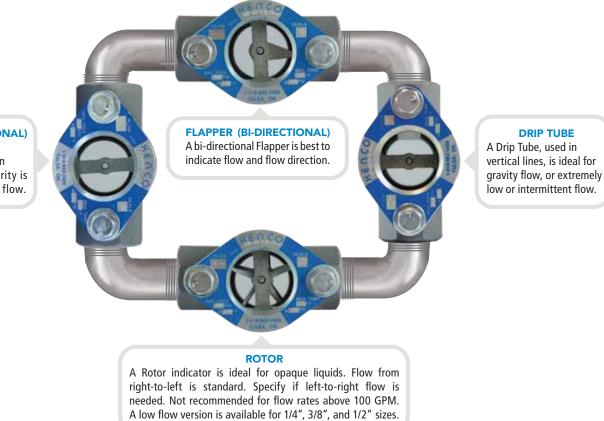
WASTEWATER TREATMENT Second Stage Aeration Tank Pumping Lines

KSF CAST BODY SIGHT FLOW INDICATORS

KENCO offers a wide variety of Standard KSF (cast body) Sight Flow Indicators. They are available in a complete range of sizes and styles to meet your application needs.

Selecting The Best Style

Sight flow indicators are an inexpensive way to identify and repair process line problem areas reliably and efficiently. Selecting the best type of sight flow indicator for a given application is crucial to getting the best performance possible.

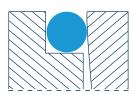


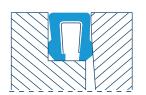
PLAIN (BI-DIRECTIONAL) A bi-directional Plain indicator is best when observing color & clarity is more important than flow.

LEAK-PROOF GUARANTEE

The most common complaint against sight flow indicators is that they leak. This is primarily caused by the failure of conventional flat seals. KENCO Standard KSF (cast body) Sight Flow Indicators are guaranteed not to leak for three full years under normal use. The reason we are sure that these indicators won't leak is the innovative radial sealing design:

Elastomeric radial seal with memory retention for shape creates a steady sealing force between the outside diameter of the glass and the indicator body.





PTFE lip/spring seal with constant spring expansion force maintains sealing by holding the edges of the PTFE lip seal against the outside diameter of the glass and the sight flow indicator body.

MODULAR DESIGN



KENCO MODULAR DESIGN



COMPETITOR TIE-ROD DESIGN

KENCO's unique modular design fastens the flow assembly directly to the body with no special torquing sequence. This provides easy access to the unit from the front side, which eliminates clearance problems caused by the Tie-Rod design. The Tie-Rod design also presents challenges fastening the glass and seal to the body.



The KENCO modular design allows for maintenance to the internal parts of the indicator without removing the indicator from the pipeline. This optimizes uptime and reduces replacement costs.

Sight Flow Indicator Maximum Pressure / Temperature Ratings

KSF / KPJ Series Sight Flows	Maximum Pressure	Max. Temperature using Standard Seals
ST Series (1/4"- 2" Threaded) (3/4"- 4" Flanged)	200 psig @ 150°F	250°F @ 135 psig
ST Series (6"- 12" Flanged)	150 psig @ 150°F	150°F @ 150 psig
HT Series (1/4"- 2" Threaded)	400 psig @ 150°F	400°F @ 160 psig
	Carbon Steel 285 psig @ 100°F	Carbon Steel 400°F @ 200 psig
HT Series (3/4"- 4" Flanged)	316 Stainless Steel 275 psig @ 100°F	316 Stainless Steel 400°F @ 195 psig
HT Series (6" 12" Elenged)	275 psig @ 100°F	Carbon Steel 400°F @ 200 psig
HT Series (6"- 12" Flanged)	275 psig @ 100 F	316L Stainless Steel 400°F @ 195 psig

Seal / Indicator Temperature Ratings

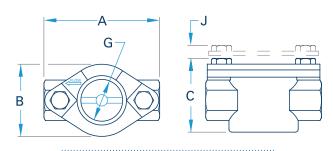
Seal Materials	
Neoprene (ST Standard)	-20° to 250°F
Fluorocarbon (HT Standard)	-20° to 400°F
Buna-N	-20° to 212°F
EPDM	-50° to 250°F
PTFE	-40° to 400°F
Kalrez®	0° to 500°F

Indicator Materials	
Delrin [®] (ST Standard)	-40° to 250°F
Ryton® (HT Standard)	-40° to 450°F
PTFE	-40° to 500°F

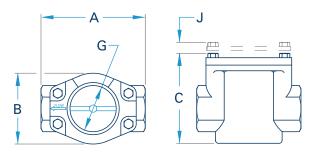
Note: Minimum / maximum temperature ratings are driven by the body material, seal material and flow indicator material.

PRODUCT DIMENSIONS - INCHES

THREADED KSF SIGHT FLOW INDICATORS



0.25" through 1" Size

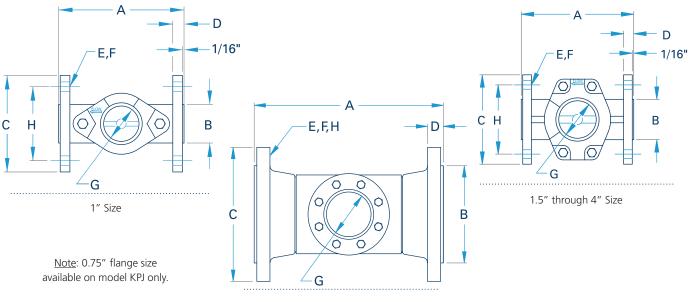


1.25" through 2" Size

Indicator Size (inches)	0.25″	0.375"	0.5″	0.75"	1″	1.25″	1.5″	2″
A Overall Length	3.25 ¹	3.25 ¹	3.25 ¹	4.25 ²	4.25	5.25 ³	5.25 ³	5.50 ³
B Overall Width	2.00	2.00	2.00	2.56	2.56	3.31	3.31	3.31
C Overall Height (ST Series)	2.38	2.38	2.38	3.25	3.25	4.31	4.31	4.31
Overall Height (HT Series)	2.56	2.56	2.56	3.44	3.44	4.50	4.50	4.50
G Sight Opening Diameter	1.13	1.13	1.13	1.50	1.50	2.00	2.00	2.00
J Added Height Due to Shield	0.44	0.44	0.44	0.50	0.50	0.50	0.50	0.50
Weight (pounds)	1.60	1.60	1.40	3.00	2.70	8.40	7.90	6.60

1 316 SS Units are 3.63"; 2 Bronze Units are 4.13"; 3 316 SS Units are 5.63"

150# FLANGED KSF SIGHT FLOW INDICATORS



6" through 12" Size

Indicator Size (inches)	1"	1.5″	2″	3″	4″	6"	8"	10″	12″
A Overall Length	5.00	6.50	7.00	8.00	9.00	14.25	16.13	16.13	17.13
B Raised Face Diameter	2.00	2.88	3.63	5.00	6.19	8.50	10.63	12.75	15.00
C Flange Diameter	4.25	5.00	6.00	7.50	9.00	11.00	13.50	16.00	19.00
D Flange Thickness	0.47	0.59	0.69	0.81	1.00	1.00	1.13	1.19	1.25
E Number of Bolt Holes	4.00	4.00	4.00	4.00	8.00	8.00	8.00	12.00	12.00
F Bolt Hole Diameter	0.63	0.63	0.75	0.75	0.75	0.75	0.75	0.88	0.88
G Sight Opening Diameter	1.50	2.00	2.00	3.00	3.00	4.00	4.00	4.00	4.00
H Bolt Circle Diameter	3.13	3.88	4.75	6.00	7.50	9.50	11.75	14.25	17.00
Weight (pounds)	5.40	11.10	15.00	29.30	35.00	85.00	125.00	165.00	250.00

DIMENSION MATCHING

KENCO Flanged Sight Flow Indicators are available in a version that matches the end-to-end dimension of sight flow indicators from Penberthy and Jacoby-Tarbox. The Model KPJ indicators are available in either Carbon Steel or 316SS materials, and Standard and High Pressure / High Temperature styles. All sizes are dimensionally interchangeable with these manufacturers' indicators, except 3/4", 2", 3", and 4" sizes, as noted in the table below.

Dimensions For Model KPJ Sight Flow Indicators

Indicator Size (inches)	3/4″	2″	3"	4″
A Overall Length	4.63	7.88	9.38	11.00
B Raised Face Diameter	1.69	3.63	5.00	6.19
C Flange Diameter	3.88	6.00	7.50	9.00
D Flange Thickness	0.50	0.69	0.81	1.00
E Number of Bolt Holes	4.00	4.00	4.00	8.00
F Bolt Hole Diameter	0.63	0.75	0.75	0.75
G Sight Opening Diameter	1.50	2.00	3.00	3.00
H Bolt Circle Diameter	2.75	4.75	6.00	7.50
Weight (pounds)	5.20	15.00	31.00	42.00



Construction Materials

Part	Style	Material	
		Carbon Steel	
Body	All	316 SS (1/4" to 4")	
воау		316L SS (6" to 12")	
		Bronze (Threaded Only)	
	Standard (ST) – 1/4" to 2"		
Window	Standard (ST) – 3" to 12" Flanged	Annealed Soda Lime Glass	
	High Press./Temp. (HT)	Tempered Borosilicate Glass	
	Standard (ST)	Delrin®	
Indicator	High Press./Temp. (HT)	Ryton®	
	Optional	PTFE	
	Standard (ST)	Neoprene	
Seals	High Press./Temp. (HT)	Fluorocarbon	
	Optional	Buna-N, EPDM, Kalrez®	

ORDERING SYSTEM

KSF Sight Flow Indica	lors			
REQUESTED BY:	COI	MPANY:		
ADDRESS:	CITY:	STATE:	ZIP:	
PHONE:	FAX:	EMAIL :		
Sight Flow Style	— [] — J Design Rating	Connection Type	Connection Si	ize
KSF=Cast Body Sight Flow Indicator KPJ=Competitor Dimension Matched Cast Body Sight Flow Indicator	ST=Standard HT=High Temp. / High Pressure	F=Flanged (150#) F3=Flanged (300#) T=Threaded SW=Socket Weld	Threaded 0.25=1/4" 0.375=3/8" 0.5=1/2" 0.75=3/4" 1.0=1" 1.5=1-1/2" 2.0=2"	Flanged 0.75=3/4" (KPJ only) 1.0=1" 1.5=1-1/2" 2.0=2" 3.0=3" 4.0=4" 6.0=6"
B=Buna-N N=Neoprene (ST Std.) E=Ethylene Propylene V=Fluorocarbon (HT Std.) T=PTFE K=Kalrez [®]	C=Carbon Steel B=Bronze (Threaded Connections only) S=316 Stainless Steel A20=Alloy 20 <u>Note</u> : Other materials available upon request	P=Plain R=Rotor (1/4" to 4" Sizes Only) F=Flapper D=Drip Tube LR=Low Flow Rotor (1/4", 3/8" & 1/2" Sizes Only)		8.0=8" 10.0=10" 12.0=12"

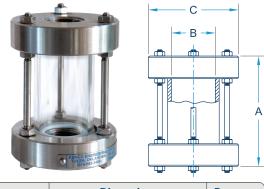
• Example Order Number: KSF-HT-F-1.0-T-S-R

FULL VIEW & ARMORED SIGHT FLOW INDICATORS

KENCO Full View Sight Flow Indicators provide for the maximum viewing area of all types of flow indicators. The open design allows 360° inspection of the liquid being observed. Available in NPT Threaded and Flanged models, these sight flow indicators are designed to enhance the visibility of the media as it passes through the glass cylinder. Full View Indicators are recommended for low pressure applications where maximum visibility is needed. They are best suited for vertically mounted applications.

PRODUCT DIMENSIONS

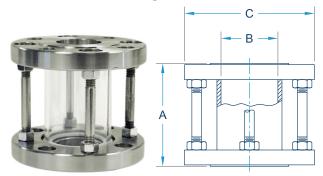
Full View: Threaded End Plates



Size	I	Pressure		
(inches)	*A	B (I.D.)	С	Rating (psig)
1/2″	4.50″	1.44"	3.50"	150
3/4"	4.50"	1.44″	3.50"	150
1″	4.50"	1.63″	3.50"	150
1-1/4″	4.75″	2.13″	4.00"	120
1-1/2″	4.75″	2.13″	4.00"	120
2″	5.50"	2.63″	4.50"	100

*Dimension "A" is ±0.13"

Full View: 150 Lb. Flanged End Plates

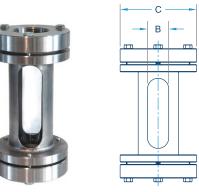


Size	I	Pressure		
(inches)	*A	B (I.D.)	С	Rating (psig)
1/2"	3.88″	0.94″	3.50″	150
3/4"	3.88″	1.19″	3.88″	150
1″	4.00"	1.44″	4.25″	150
1-1/2″	4.00"	2.13″	5.00"	120
2″	4.75″	2.63″	6.00"	100
2-1/2"	5.38″	3.13″	7.00″	85
3″	5.38″	3.50"	7.50″	100
4"	7.50″	4.50"	9.00″	70
6″	10.38″	6.25″	11.00″	45

*Dimension "A" is ±0.13"

KENCO Armored Sight Flow Indicators provide the best mix between visibility and protection. The additional shielding provides protection, while still maintaining maximum visibility. These units can be mounted either vertically or horizontally. The body of the Flanged Armored Indicator is not a wetted part. Only the glass, seal and the PTFE flange facing are in contact with the process media.

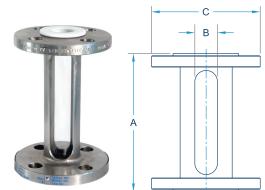
Armored: Threaded End Plates



Size	I	Pressure		
(inches)	* A	В	с	Rating (psig)
1/2″	7.00″	0.63″	2.50″	150
3/4″	7.00″	0.88″	3.00"	150
1″	7.00″	1.00″	3.00"	150
1-1/4"	7.63″	1.25″	4.00"	150
1-1/2"	7.63″	1.25″	4.00"	150
2″	7.63″	1.25″	4.50"	120

*Dimension "A" is ±0.13"

Armored: 150 Lb. Flanged End Plates



Size		Pressure Rating		
(inches)	*A	В	С	(psig)
1/2″	6.13″	0.63″	3.50″	150
3/4"	6.38″	0.88″	3.88″	150
1″	6.38″	1.00″	4.25″	150
1-1/2″	6.75″	1.25″	5.00"	150
2″	7.63″	1.25″	6.00″	120
2-1/2"	7.88″	1.50″	7.00″	100
3″	8.13″	1.75″	7.50″	85
4″	8.13″	1.75″	9.00″	90

*Dimension "A" is ±0.13"

ORDERING SYSTEM Full View & Armored Sight F	low Indicators		
REQUESTED BY:	COMPANY:		
ADDRESS:			
PHONE:			
	FAA	EMAIL :	
			—
Sight Flow Style	Connection Type	Connection Size	
ASF=Armored	F=Flanged	Threaded	Flanged
FVSF=Full View	T=Threaded	0.5=1/2"	0.5=1/2"
		0.75=3/4"	0.75=3/4"
		1.0=1"	1.0=1"
		1.25=1-1/4"	1.5=1-1/2"
		1.5=1-1/2"	2.0=2"
		2.0=2"	2.5=2-1/2"
		Contact Factory for other sizes	3.0=3" 4.0=4"
			6.0=6" (FVSF Only)
Seal Material	Material of Construction (Body)	Material of Construction	
A=Aflas	N/A on FVSF (leave blank)	(End Plate)	
B=Buna-N	CS=Carbon Steel	N/A on ASF-F (leave blank)	
N=Neoprene	S4=304 Stainless Steel	CS=Carbon Steel	
E=Ethylene Propylene	S6=316 Stainless Steel	S4=304 Stainless Steel	
TE=FEP Encapsulated Silicone (ASF Only)		S6=316 Stainless Steel	
V=Fluorocarbon		A20=Alloy 20	
K=Kalrez (ASF Only)		HC=Hastelloy C 276	
TN=PTFE Envelope - Neoprene Filler (FVSF O	· · · · · · · · · · · · · · · · · · ·	P=PVC	
TV=PTFE Envelope - Fluorocarbon Filler (FVS	F Only)	CP=CPVC	

• Example Order Numbers: ASF-F-1.0-N-CS; ASF-T-1.0-N-CS-S6; FVSF-F-1.0-N-CS; FVSF-T-1.0-N-CS

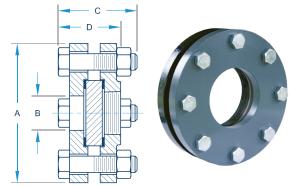
•• Custom lengths available upon request.

SIGHT WINDOWS

KENCO Sight Windows are used to provide direct reading of process liquids. They can be mounted directly to the vessel wall, or to pipe, in a variety of configurations.

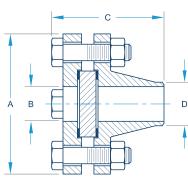
PRODUCT DIMENSIONS

Threaded Flange Window (TFW)



Size	Α	в	C (STD)	C (ANSI)	D (STD)	D (ANSI)
1″	4.25″	1.05″	2.61″	2.61″	1.80″	1.80″
1.5″	5.00″	1.61″	2.86″	2.86″	2.24″	2.24"
2″	6.00″	2.07"	3.19"	3.44″	2.51"	2.63″
3″	7.50″	3.07"	3.94″	3.94″	3.10"	3.10"
4"	9.00″	4.03"	3.94″	3.94″	3.19"	3.19″
6″	11.00″	6.07"	4.27"	4.77"	3.59″	4.09"
8″	13.50″	7.98″	4.52″	5.02″	4.09"	4.59″

Weld Neck Window (WNW)

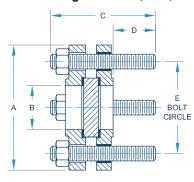




Size	A	В	C (STD)	C (ANSI)	D
1"	4.25″	1.05″	3.31″	3.31″	1.32″
1.5″	5.00"	1.61″	3.81″	3.81″	1.90″
2″	6.00″	2.07"	4.06″	4.19″	2.38″
3″	7.50″	3.07"	4.69″	4.69″	3.50"
4"	9.00″	4.03"	4.94″	4.94″	4.50"
6″	11.00″	6.07"	5.56″	6.06″	6.63″
8″	13.50″	7.98″	6.44″	6.94″	8.63″

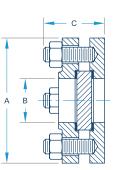
PRODUCT DIMENSIONS - INCHES

Bolted Flange Window (BFW)





Flat Plate Window (FPW)





Size	A	В	C (STD)	C (ANSI)	D	E	STUD SIZE	STUD QTY.
1″	4.25″	1.38″	3.75″	3.75″	1.50″	3.13″	1/2"-13	4
1.5″	5.00"	1.97″	4.25″	4.25″	1.63″	3.88″	1/2"-13	4
2″	6.00"	2.46″	4.75″	4.88″	1.81″	4.75″	5/8"-11	4
3″	7.50″	3.60″	5.38"	5.38"	1.94″	6.00″	5/8"-11	4
4″	9.00"	4.60"	5.38"	5.38"	1.94″	7.50″	5/8"-11	8
6″	11.00″	6.75″	5.88"	6.38″	2.19"	9.50″	3/4"-10	8
8″	13.50″	8.75″	6.50″	7.00″	2.31″	11.75″	3/4"-10	8

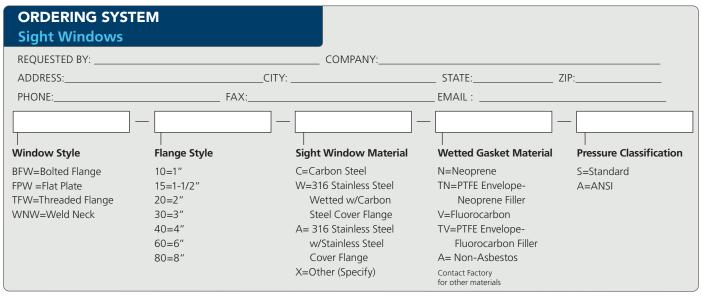
			-	-
Size	Α	В	C (STD)	C (ANSI)
1″	4.25″	1.38″	2.41″	2.41"
1.5″	5.00"	1.97"	2.78″	2.78″
2″	6.00"	2.46″	3.09"	3.09″
3″	7.50″	3.60″	3.53″	3.53″
4″	9.00"	4.60"	3.53″	3.53″
6″	11.00"	6.75″	3.84″	4.34″
8″	13.50″	8.75″	4.47"	4.97″

Pressure Ratings

Pressure Style	Max. Temp.	Max. Pressure
Standard	300°F @ 150 psig	150 psig @ 100°F
ANSI	400°F @ 180 psig	275 psig @ 100°F

Seal Temperature Ratings

Material	Temperature
Neoprene	-20°F to 200°F
PTFE Envelope – Neoprene Filler	-20°F to 200°F
Fluorocarbon	-15°F to 400°F
PTFE Envelope – Fluorocarbon Filler	-15°F to 400°F
Non-Asbestos (ANSI Only)	0°F to 400°F



• Example Order Number: FPW-20-A-N-A

Represented by:

Kenco Sales Offices: Headquarters 10001 E. 54th St. Tulsa, OK 74146 phone 918.663.4406 fax 918.663.4480 www.kenco-eng.com email: info@kenco-eng.com

Baton Rouge Office

11616 Industriplex, Suite 7 Baton Rouge, LA 70809 phone 225.755.1912 fax 225.755.1913 www.kenco-eng.com email: kenco-la@kenco-eng.com

79407 (06-30-25)

