

Modern Engineered Products, Inc.



Diverse products for diverse industries.



FRP stair treads: 1", 1-1/2" and 2", 11" or 12" deep, & 12' long, yellow or gray.



FRP stair tread covers: 1/8" & 1/4", 8"-12" deep, 12' long, yellow or black with yellow nosing.



Cast metal stair treads: Cast iron and cast aluminum,
Aluminum extruded treads: Epoxy nonskid inlay.
All treads lengths made to order. Max length on cast metal is 8'. Max length on extruded is 12'



Pultruded FRP grating: Standard panels are; (1, 1-1/2, and 2" thick). 3', 4', & 5' wide, by 20' long. Available in premium polyester resin. (approved). Lightweight (70% glass to 30% resin). Standard colors are yellow and gray, with optional colors available.



Molded FRP Grating: One piece construction. Standard panels; (1-2" thick) 3' x 10', 4' x 8', 4' x 12'. Mesh sizes; 1-1/2" square 1" x 4", and 2" square mesh. Standard colors are yellow, gray, green, and orange, with optional colors available. Fasteners available for all grating.



FRP structural shapes and plates: Any shape you can get in metal we have in fiberglass. Polyester or vinylester resin systems with UV coatings. Lightweight, non-conductive, non-corrosive, fire retardant, and easy to fabricate. The Strength of steel and 80% less weight.

Other materials: Floor panels, wall panels and handrail systems.



1-800-259-6874

www.mepinc.net

North American Sensors Corp. Products



Intelligent level/pressure transmitter



Density transmitter



Hydrostatic level transmitter



Pressure transmitters

All transmitters require 10-30VDC excitation voltage. Output is 4-20ma, and RS-485 (MODBUS) for intelligent transmitters



Custom level switches & transmitters



S.S. Bilge/Sump level switches



External mount level switches (brass or S.S.)



Side mount level switch (S.S. or brass)

All reed switches rated 10VA, 25VA & 100VA. SPDT is standard for single level and SPST for multi-level

Pressure Switches Inc. Products



Series 1
Vacuum
Low Pressure
Differential Pressure
Nema 4X, 13



Series 2
Nema 4X, 13
2 - 4500 psig



Series 4
Economy
20 - 1500 psig



Series 5
Dual Seal
NEMA 4, 7, 9
Minimum Order of 100
*Explosion Proof Models



Series 6
Nema 4X, 7 & 9
3\"WC - 5000 psig
*Explosion Proof Models



MODERN ENGINEERED PRODUCTS, INC.

Modern Engineered Products, Inc. was founded January 1991, in Mandeville, LA. The founder saw a need for products provided by a company with product knowledge and application experience to serve the diverse markets and industries of the U.S. The company was based on the philosophy that we work for the customer and our success would reflect our customer's faith in us. The company slogan, "We Sell Solutions", expresses our commitment to providing products that solve our customer's problems, not just products that may work.

Over the years we have strived to distinguish ourselves in the market by our innovative approach to solving our customers' problems. In December of 1991, North American sensors Corp. (NASC) was formed as a subsidiary of MEP, to manufacture pressure, level and temperature sensors. Our primary market focus at this time was the Marine industry; therefore many of our sensors are ABS Approved. ISO 9001:2008 for manufacturing of level, pressure, and temperature sensing devices.

Founded in 1989, Pressure Switches Inc. (PSI) is located in Abita Springs, Louisiana and shares facilities with NASC. PSI Products carry UL, cUL, and CSA approvals. A state of the art CNC facility provides the components for our high quality and accurate pressure switches. PSI offers a full line of electro-mechanical switches to cover all industries requirements for; DP, vacuum and pressure. PSI is a subsidiary of MEP.

North American Grating is a wholesale supplier of fiberglass grating and structural materials located in Covington, Louisiana. We are confident we can assist you with your FRP grating and FRP material requirements as we have over two decades experience in FRP materials in multiple industries. Whether you need standard stocked, custom cut, or fabricated materials, we can provide on time deliveries at a competitive price. We value our customer relationships and strive to offer a level of service that exceeds the industry standard.

MEP over the years has provided a level of service that sets the standard in the industry for reliability and accountability. Our order tracking and scheduling allows us to meet our customer's scheduled deliveries. In the rare occasion that a delivery date cannot be met, the customer is notified by phone, fax or email and given an updated delivery. At MEP, a live person will always answer our phones. If they are unable to answer your questions, they will get the answers for you.

We feel confident of our reputation with our customers in the markets we serve. Instead of providing testimonials from selective customers confirming our level of service and product quality, we will give you contacts from your industry and geographical area to provide a testament to our products and service.

Industries Served

Marine
Oil & Gas
Water & Wastewater
Utilities
Construction
Railroads

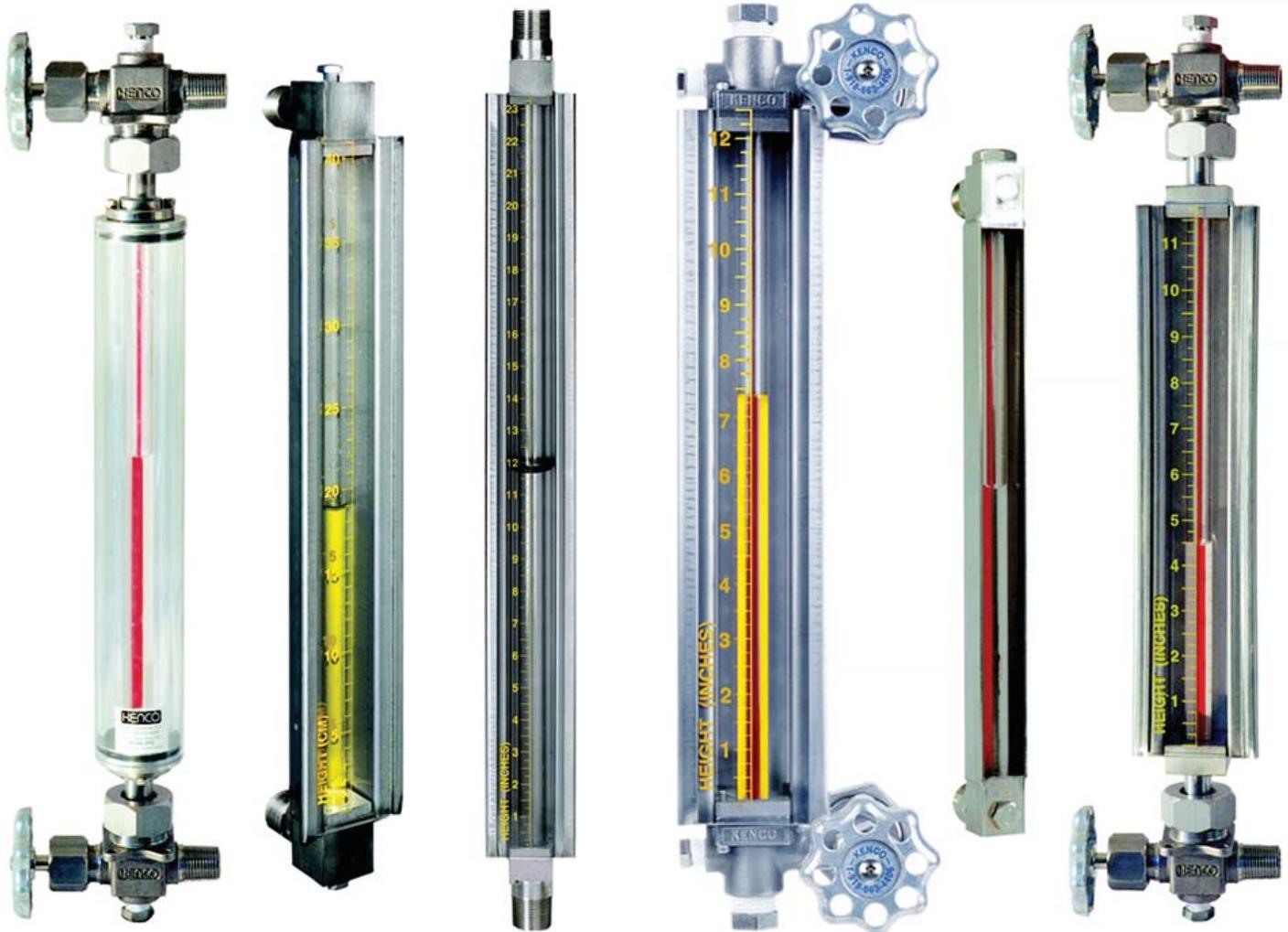
Pharmaceutical
Aerospace
Manufacturing
Petrochem
Food & Beverage
Mining



MODERN ENGINEERED PRODUCTS, INC.

VERSATILITY & DURABILITY

TUBULAR GLASS GAUGES & VALVES FOR PROCESS LEVEL MEASUREMENT by KENCO



FEATURING K9900 SERIES LIQUID LEVEL GAUGE



Model 905AS 1/2" Short Shank Upper Fixture

With Ball Check

250 WSP @ 406°F Max

400WOG

Rising Stem • Bronze Body

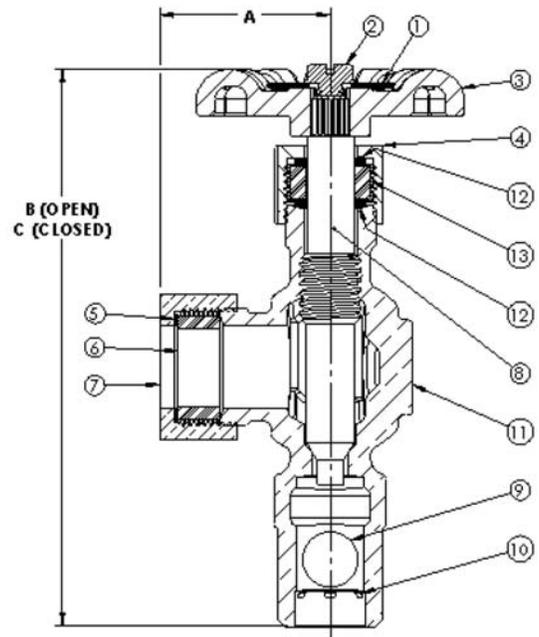
Ductile Iron Hand Wheel

Contains Lead. Not Intended for Use in Potable Water Systems

CRN OCO7135.2C

MATERIAL LIST

NO.	DESCRIPTION	MATERIAL
1	Marker Disc	Steel
2	Hex Screw	Steel
3	Hand Wheel	Ductile Iron
4	Packing Nut	Brass
5	Metal Washer	Steel
6	Glass Washer	EPDM
7	Glass Washer Nut	Brass
8	Stem	Brass
9	Ball	Brass
10	Retaining Ring	Stainless
11	Body	Bronze
12	Bevel Washer (2)	Steel
13	Packing	NAFG



Size	1/2"
A	1.25
B	5.20
C	5.02
Ship Wt. (lbs.)	0.63
Qty. Per Carton	12

Available With Plastic Hand Wheel as Part 905ASPW



Model 946AS 1/2"
Short Shank Lower Fixture
With Ball Check

250 WSP @ 406°F Max
400WOG

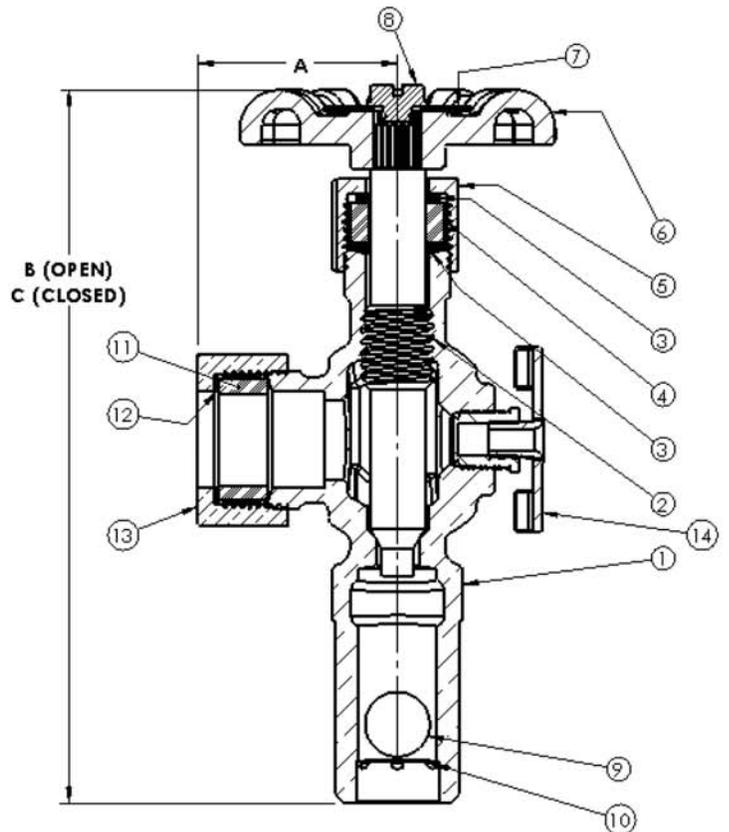
Rising Stem • Bronze Body
Ductile Iron Hand Wheel

***Contains lead. Not For Use In Water Systems**
Intended for Human Consumption*

CRN OCO7135.2C

MATERIAL LIST

NO.	DESCRIPTION	MATERIAL
1	Body	Bronze
2	Stem	Brass
3	Bevel Washer (2)	Brass
4	Packing	PTFE Aramid
5	Packing Nut	Brass
6	Hand Wheel	Ductile Iron
7	Tag	Steel
8	Hex Nut	Brass
9	Ball	Brass
10	Retaining Clip	Steel
11	Glass Gasket	EPDM
12	Washer	Steel
13	Glass Nut	Brass



Size	1/2"
A	1.25
B	5.20
C	5.02
Ship Wt. (lbs.)	0.63
Qty. Per Carton	12

***Available with Plastic Hand**
Wheel as Part 946ASPW*

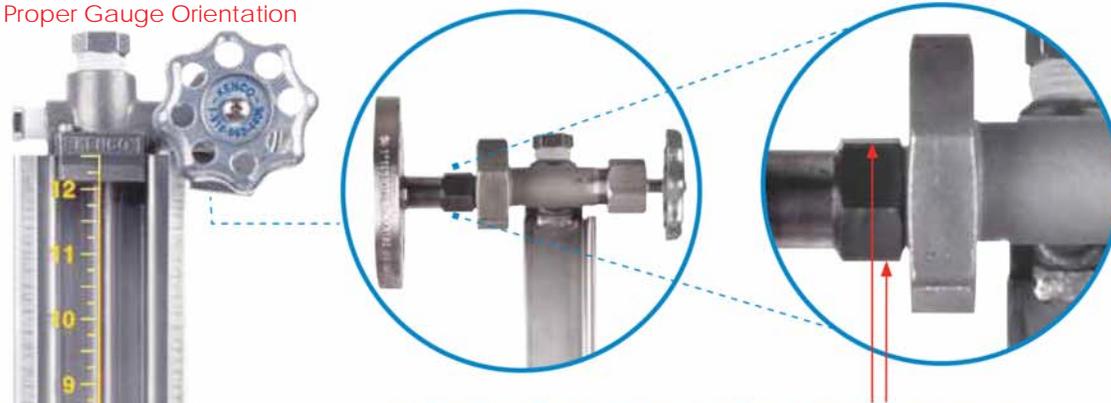


LIQUID LEVEL GAUGES

K9900 LEVEL GAUGE WITH INTEGRAL VALVES AND MISALIGNMENT UNIONS

(U.S. Patent Number 6,857,315 B1)

Proper Gauge Orientation



FLOATING MISALIGNMENT UNIONS ALLOW PROCESS CONNECTION CENTERLINES TO VARY +/- 1/4"



K9900 Bulk Tank Gauge w/Optional Flange Connections



K9957 Bulk Tank Gauge w/Integral Valve on Bottom w/Threaded Connection on Top



K9957 Bulk Tank Gauge w/Optional Flange Connection

Left Handed Gauges Available

The patented K9900 Series Level Gauge features an innovative casting design which will simplify the installation process and eliminate other typical problems associated with gauge glasses. The K9900 incorporates floating misalignment unions, which will allow process connection centerlines to vary +/- 1/4". The gauge also has integral offset pattern valves with ball check shutoffs. 1/2" FNPT vent and drain connections are inline for routine sight glass maintenance. The K9900 Series Level Gauge delivers a safe, low maintenance, cost effective solution to common sight glass applications.

APPLICATIONS

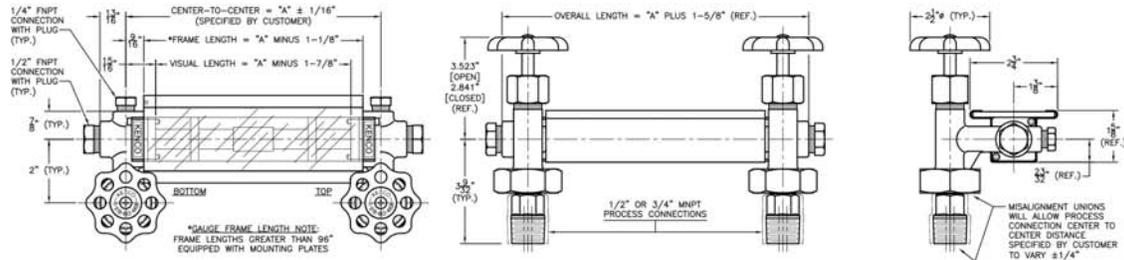
- Low to Medium pressure applications up to 500 psi
- Bulk storage tanks
- Marine
- Low pressure scrubbers and surge tanks
- Seal pots

PRODUCT FEATURES

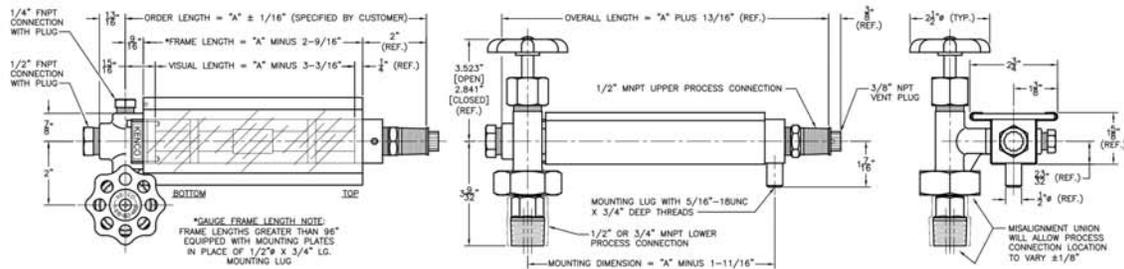
- Floating misalignment unions allow process connection centerlines to vary +/- 1/4"
- Offset pattern check valves with ball check shutoffs
- Ball check shutoff valves protect tank inventory
- Tubular sight glass allows for easy viewing of liquid level
- Innovative casting design includes all necessary mounting components up to process connection
- Rugged armored gauge construction protects sight glass from mechanical impact
- 1/2" FNPT vent and drain ports for routine gauge glass maintenance
- Additional 1/4" FNPT side ports for optional mounting of other instrumentation for level gauge monitoring
- Custom scales for tank volume or other calibrations are available
- Armored frame and polycarbonate shield protect operator in case of accident
- K9900 is ABS certified for marine applications



K9900 BULK TANK GAUGE



K9957 BULK TANK GAUGE



ORDERING SYSTEM

K9900 Series Bulk Tank Gauge

REQUESTED BY: _____ COMPANY: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ FAX: _____ EMAIL: _____

Gauge Style

K99 = Gauge w/ Top & Bottom Integral Valves

K9957 = Gauge w/ Integral Valve on Bottom and 1/2" MNPT x 3/8" FNPT Connection on Top

Process Connections

M50 = 1/2" MNPT
M75 = 3/4" MNPT
FL50 = 1/2" 150# R.F. Flange
FL75 = 3/4" 150# Flange
FL10 = 1" 150# R.F. Flange
FL15 = 1-1/2" 150# R.F. Flange
FL20 = 2" 150# R.F. Flange

K99: Center-to-Center Dimension (inches)

K9957: Lower Connection Centerline to Top of Gauge (inches)

Material of Construction

C = Zinc Plated Carbon Steel
A = Stainless Steel

Seal Material

V = Fluorocarbon
A = Atlas
B = Buna-N
T = FEP Encapsulated Silicone
E = Ethylene Propylene

Shield Options*

L = Clear Polycarbonate
H = Height Scale
RH = Rate Height Scale
MH = Metric Height Scale
MRH = Metric Rate Height Scale
M = Expanded Metal Guard

Sight Tube Options**

GS = 5/8" O.D. Glass
RL = 5/8" O.D. Redline Glass

Maximum Working Pressure (PSIG)

Maximum Operating Temperature (°F)

Steam

S = Steam Application
NS = Non-Steam Application

• Example Order Number: K99FL10-35-AEL-RL-210-160-NS

* See page 12 for shield descriptions.

** Based on application data provided, KENCO will select the appropriate sight tube material, i.e. high pressure glass.



LIQUID LEVEL GAUGES

8800 SERIES BULK TANK GAUGE WITH 90 DEGREE CONNECTIONS



APPLICATIONS:

For low to medium pressure applications up to 500 psig, including oil or fuel storage tanks, cooling tower water tanks, and boiler feedwater tanks.

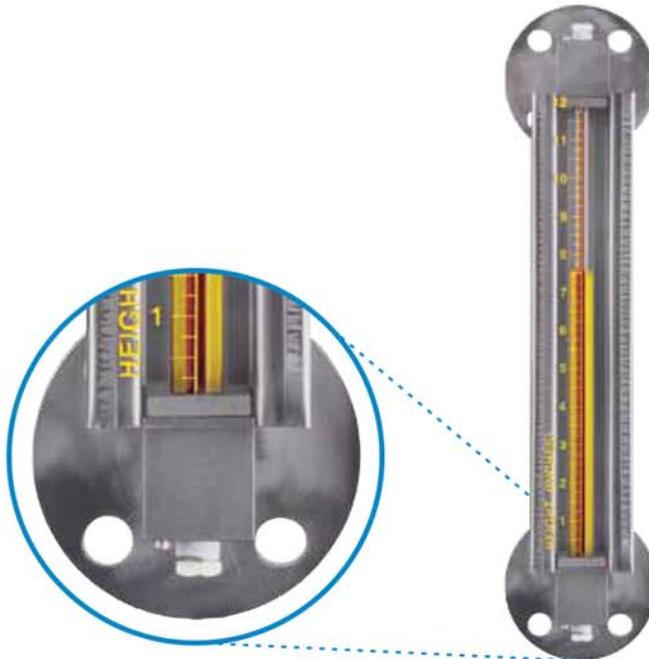
FEATURES

The 8800 Series Level Gauge features 90 degree connections for ease of installation. The Gauge is fitted with inline 1/4" FNPT vent and drain connections. Vent and drain connections are inline for routine sight glass maintenance.

The centerline dimensional tolerance is $\pm 1/16"$. This assures that the gauge will fit the mounting connection of the tank.

The sight tube of the 8800 Series Level Gauge is totally protected. Three sides of the gauge are enclosed with a metal frame, while the face of the gauge is protected with a polycarbonate shield. This shield can be custom calibrated to read tank volume or any other calibration. Refer to the Shield Specifications on page 12 to see the assortment of standard shield options.

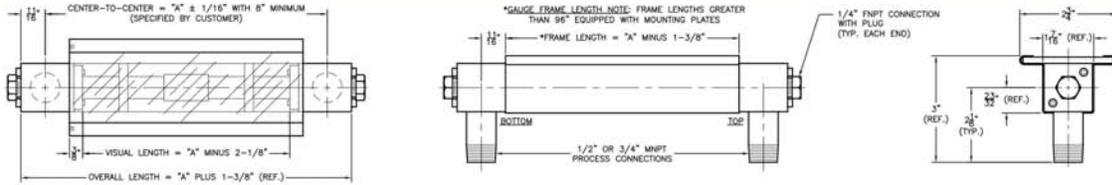
The gauge frame is available in carbon steel or 304 stainless steel. A wide variety of wetted materials are available, including carbon steel, 316 stainless steel, alloy 20, Hastelloy C-276, PVC, CPVC, Kynar, and high density polyethylene.



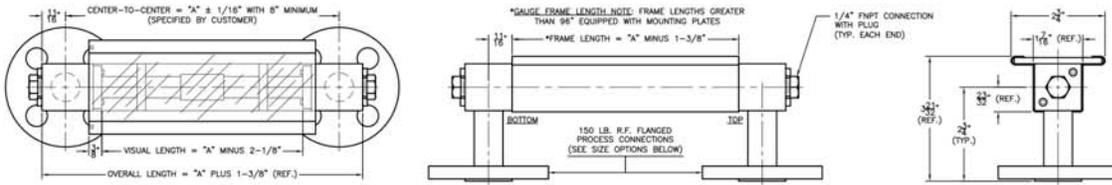
8800 Bulk Tank Gauge with
Optional Flange Connections



8800 SERIES LEVEL GAUGE WITH THREADED PROCESS CONNECTIONS



8800 SERIES LEVEL GAUGE WITH FLANGE CONNECTIONS



• Drawings above represent models with metal process connections.

ORDERING SYSTEM

8800 Series Level Gauge

REQUESTED BY: _____ COMPANY: _____
 ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____
 PHONE: _____ FAX: _____ EMAIL: _____

88				
<p>Gauge Style 88=Gauge with 90° Connections</p>	<p>Process Connections M50=1/2" MNPT M75=3/4" MNPT F50=12" FNPT F75=3/4" FNPT FL50=1/2" 150# R.F. Flange FL75=3/4" 150# R.F. Flange FL10=1" 150# R.F. Flange FL15=1.5" 150# R.F. Flange FL20=2" 150# R.F. Flange</p>	<p>Center-to-Center Dimension (inches)</p>	<p>Material of Construction C=Zinc Plated Carbon Steel A=Stainless Steel PC=PVC Wetted Parts w/Carbon Steel Frame PS=PVC Wetted Parts w/Stainless Steel Frame Other (Please Specify)</p>	<p>Seal Material V=Fluorocarbon A=Aflax B=Buna-N T=FEP Encapsulated Silicone E=Ethylene Propylene</p>
<p>Shield Options* L=Clear Polycarbonate H=Height Scale RH=Rate Height Scale MH=Metric Height Scale MRH=Metric Rate Height Scale M=Expanded Metal Guard</p>	<p>Sight Tube Options** GS=5/8" O.D. Glass (Standard) RL=5/8" O.D. Redline Glass</p>	<p>Maximum Working Pressure (PSIG)</p>	<p>Maximum Operating Temperature (°F)</p>	<p>Steam S=Steam Application NS=Non-Steam Application</p>

• Example Order Number: 88M50-68-PSTMH-GS-150-120-NS
 * See page 12 for shield descriptions
 ** Based on application data provided, KENCO will select the appropriate sight tube material, i.e. high pressure glass.



MAGNA-SITE MAGNETIC LIQUID LEVEL GAUGE FROM KENCO

OPERATING PRINCIPLE

The KENCO Magna-Site is a magnetic liquid level gauge used to determine the volume of liquid contained within a tank. Because the Magna-Site eliminates the need for glass, high pressure applications and hazardous locations are protected from the danger of a chemical spill due to glass failure.

The KENCO Magna-Site utilizes three major components: the gauge housing chamber, the magnetic float, and the magnetic flag assembly.

The gauge housing chamber is mounted adjacent to the side of the tank. It is constructed to withstand the same temperatures and pressures as the tank itself. It is equipped with the appropriate tank mounting connections for easy installation and to allow equalization of liquid level in tank and gauge.

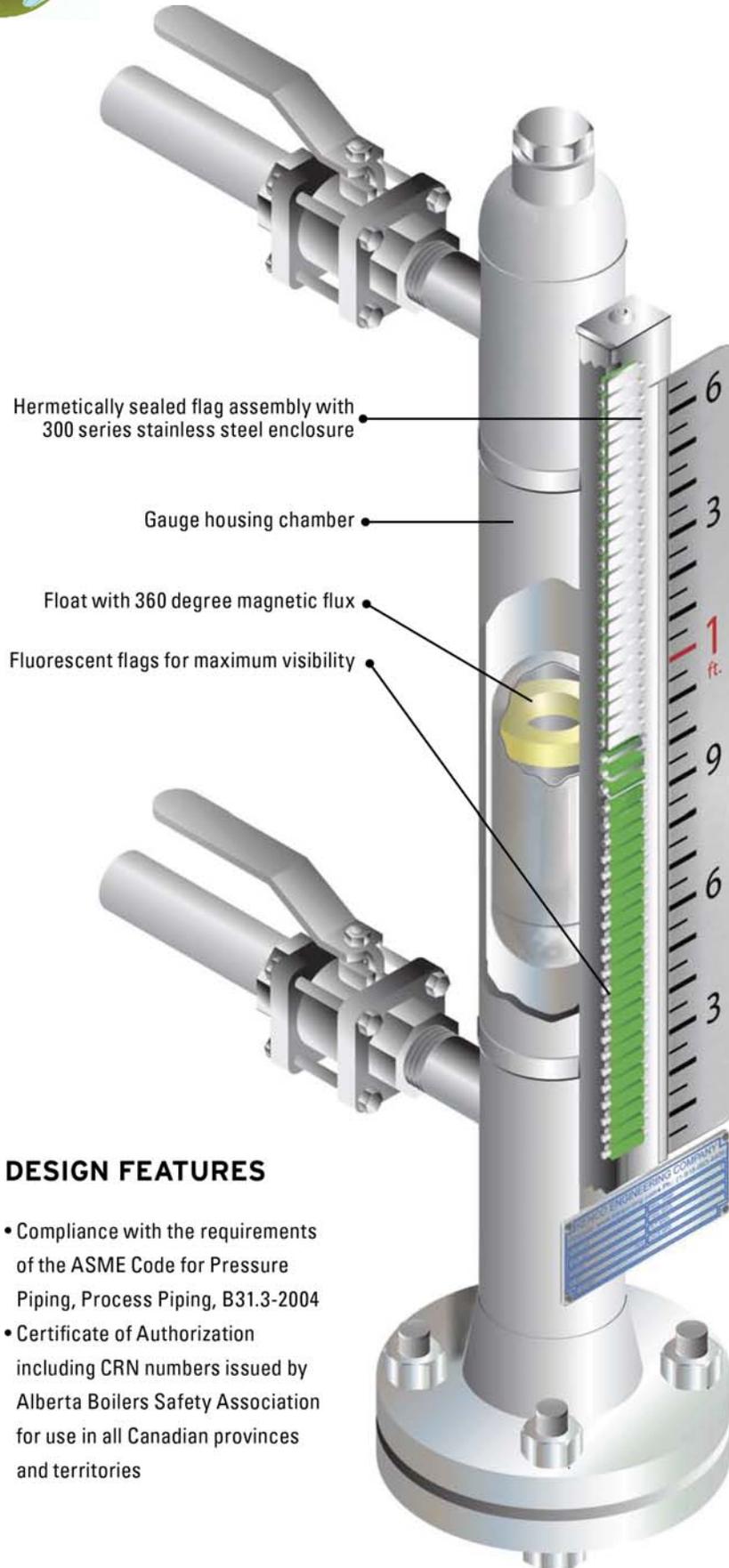
Inside the gauge housing chamber is the magnetic float, which contains radially-positioned magnets to provide a 360 degree magnetic flux field. Each float is internally weighted based on specific gravity so that the liquid level in the gauge coincides with the location of the magnets inside the float.

Attached to the gauge housing chamber is the magnetic flag assembly. This is the visual means of liquid level indication for the KENCO Magna-Site. The assembly is made up of a series of bicolored, fluorescent flags. As the magnetic float rises and falls with the liquid level in the gauge housing chamber, a magnet embedded in each flag reacts to the 360 degree magnetic flux of the float. This magnetic interaction causes each flag to rotate 180 degrees. The flags below the magnetic flux of the float will flip to fluorescent green, while those flags above the float level remain bright white.

When your application priorities are safety, visibility, and accuracy, the KENCO Magna-Site is the low-maintenance, cost-effective solution.

GAUGE FEATURES

- Maximum safety—No glass is used in the construction
- Optimum visibility—Fluorescent flags are visible from great distances
- Float with 360 degree magnetic flux—Maintains a strong magnetic field in all directions; turbulent liquids will not cause flag assembly to give an inaccurate level indication
- Double flag protection—Flags are hermetically sealed inside a Teflon® encapsulated assembly which is shrouded by a 300 series stainless steel enclosure on three sides with a UV-stabilized high-impact clear polycarbonate shield
- Adjustable viewing angles—Flag assembly can be rotated to any angle to provide maximum visibility
- Multiple mounting options—Engineered construction allows for a variety of mounting configurations
- Compatibility—A broad range of materials can be used to withstand harsh chemicals
- Remote level indication—Explosion-proof magnetostrictive level sensor/transmitter provides a 4-20mA signal output
- Height scale—304 stainless steel with no. 3 finish and large etched characters/lines for easy reading
- High/Low level switches—Explosion-proof switches can signal an alarm, operate a pump/valve or act as an emergency shut down
- Convenience—Easy installation and very low maintenance
- Warranty—Three year guarantee against defects
- Reliability—KENCO has been building magnetic liquid level indicators since 1985



Hermetically sealed flag assembly with 300 series stainless steel enclosure

Gauge housing chamber

Float with 360 degree magnetic flux

Fluorescent flags for maximum visibility

DESIGN FEATURES

- Compliance with the requirements of the ASME Code for Pressure Piping, Process Piping, B31.3-2004
- Certificate of Authorization including CRN numbers issued by Alberta Boilers Safety Association for use in all Canadian provinces and territories

INDUSTRIES SERVED

- Chemical and Petrochemical Refineries
- Water and Waste Treatment
- Pulp and Paper Processing
- Power Plants
- Pharmaceutical Processing
- Food and Beverage Processing

COMMON APPLICATIONS

- Fuels and Solvents
- Oil Production and Refining
- Lubrication Oils
- Detergents and Soaps
- Boiler Feedwater Tanks
- Fertilizers and Pesticides
- Ammonia Tanks
- Scrubber Tanks
- Storage Tanks
- Acid Tanks



WHAT MAKES THE DIFFERENCE CLEARLY VISIBLE?

FLOAT CHARACTERISTICS

- 360 degree magnetic flux field provides constant interaction with flag assembly in turbulent liquids
- Internally weighted based on specific gravity so that location of magnets inside float coincide with liquid level in gauge
- Cylindrical geometric shape ensures more accuracy in interface specific gravity applications
- Rare earth magnet assembly has an unusually high energy output and is highly resistant to demagnetization; they will not demagnetize at high temperatures like ceramic magnets
- Standard float material is 316 stainless steel. Other float materials are available. Contact KENCO for applications requiring special float materials
- Standard float good to a minimum specific gravity of 0.50
- 360 degree magnetic flux field is ideal for interaction with KENCO Magnetostrictive Transmitter
- Float is non-vented, so vapors cannot condense inside float
- Compact length minimizes ground clearance requirements





FLAG ASSEMBLY FEATURES

- Fluorescent flags for maximum visibility
- No glass in flag assembly
- Shield is UV-stabilized high-impact clear polycarbonate
- Enclosure is hermetically sealed and nitrogen filled to prevent internal condensation and ensure 100% flag rotation every time
- Totally enclosed with clear F.E.P. Teflon® tubing for maximum chemical resistance
- 300 series stainless steel chamber provides maximum protection from puncture of F.E.P Teflon® tubing
- 300 series stainless steel enclosure is more compatible to corrosive environments than aluminum
- Double O-ring seal assures that the flag assembly will not lose its nitrogen filled atmosphere
- Each flag contains an Alnico 8 magnet, making each flag highly resistant to demagnetization
- Flags are UV-stabilized, high-temperature thermoplastic and molded in color to prevent fading
- No ceramic magnets are used
- Maximum constant service temperature of 400°F
- About the sealing process:
The end block on one end of the flag rail is equipped with a positive stop charge valve to allow the flag assembly to be hermetically sealed. The flag assembly is attached to a vacuum pump through a manifold which is connected to a cylinder of ultra high-purity nitrogen gas. We evacuate the flag assembly with a vacuum pump to 28" Hg and then internally pressurize it with ultra high-purity nitrogen gas.

HIGH-TEMPERATURE FLAG ASSEMBLY FEATURES

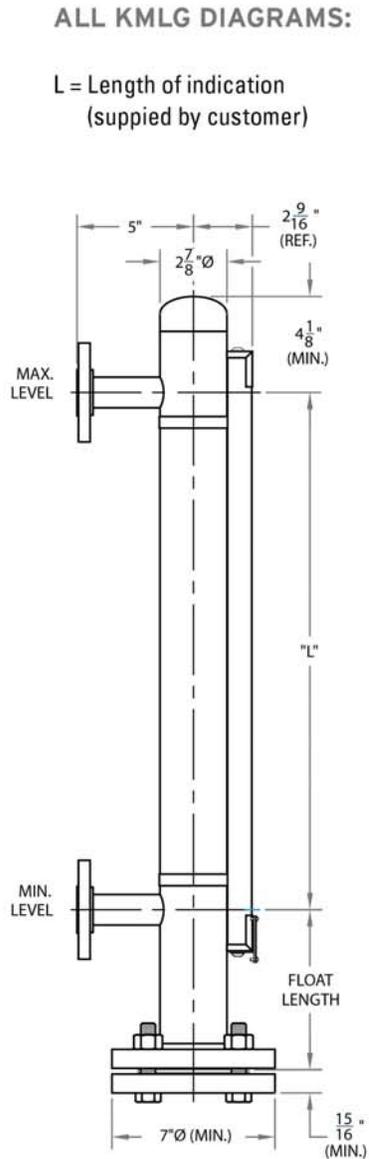
- Flags are 316 stainless steel
- Flag color is heat cured at 400°F with heat resistant paint
- All 300 series stainless steel flag assemblies are ideal for severe environments
- Alnico 8 magnets are nickel plated to withstand severe environments



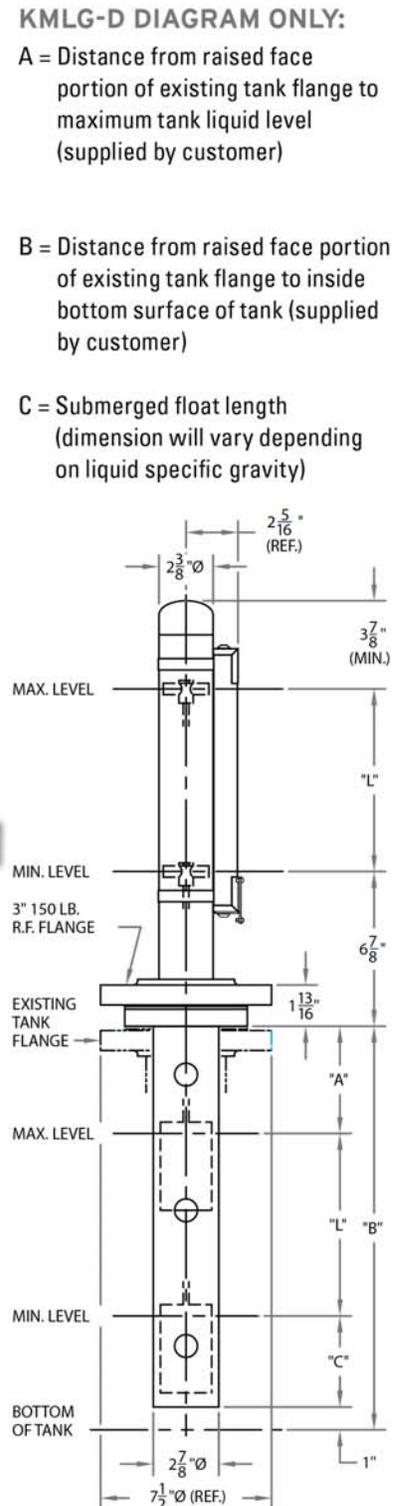


MOUNTING STYLE OPTIONS

KMLG-C: Flanged Side Connections



KMLG-D: Tank Top Mounted Flange Connection



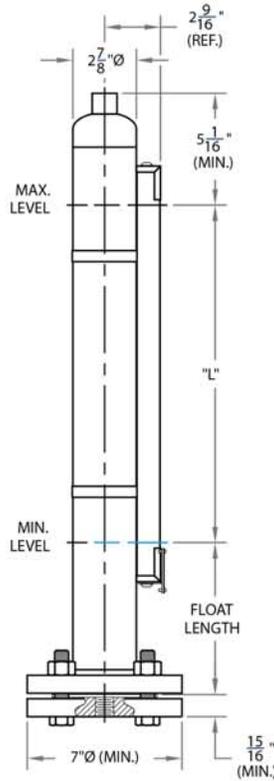
Dimensional Note:

All dimensions are for reference purposes only and are subject to change at any time without notice.

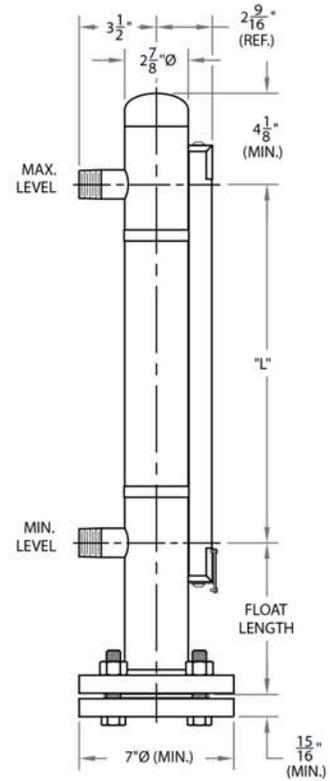


WELDING SPECIFICATIONS, X-RAYS, WELD MAPS, DYE PENETRANT TESTING, PMI TESTING, HYDROTEST REPORTS, MATERIAL CERTIFICATIONS, AND CERTIFIED DRAWINGS ARE AVAILABLE UPON REQUEST.

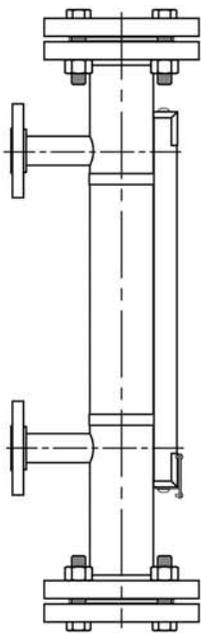
KMLG-A
Female NPT End Connections



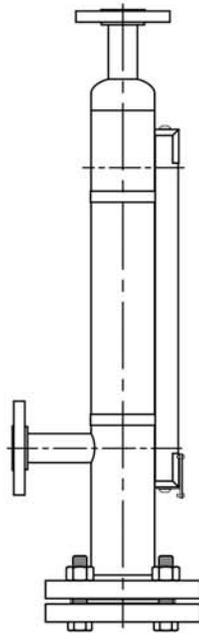
KMLG-B
Male NPT Side Connections



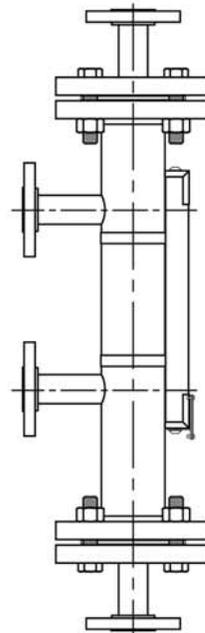
OTHER GAUGE HOUSING CONFIGURATIONS
(Housing can be modified as required to meet your specific needs)



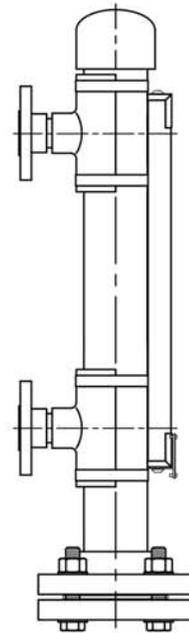
KMLG-E
Removable Flange
Top Connection



KMLG-F
Fixed Flange
Vent Connection



KMLG-G
Removable Flange
Vent Connection



KMLG-C
PVC/CPVC
Gauge Housing



KENCO MAGNETOSTRICTIVE TRANSMITTER

TRANSMITTER FEATURES

- Digital display for zero and span settings and readout
- Readout available as a % of span, 4-20mA, Feet, Inches, Meters, Centimeters, or Millimeters
- CSA certified explosion-proof housing
- CSA and ATEX certified as intrinsically safe
- Process temperature range: -40 to 400°F (contact KENCO for higher temperature requirements)
- No maintenance required
- Immune from electrical and mechanical noise
- HART® Communications standard

KENCO LEVEL TRANSMITTERS

KENCO loop powered transmitters electronically monitor the location of the magnetic float within the Magna-Site gauge housing, providing 4-20mA output. The transmitter is available up to a length of 300 inches. Zero and span may be adjusted by using the HART® communications protocol or it may be manually calibrated using the keypad display inside the explosion-proof housing. These transmitters operate within a process temperature range of -40°F to 400°F. Field replaceable electronics are potted and encapsulated. KENCO transmitters are available as standard with NEMA Type 4X explosion-proof housings. These housings feature an industrial epoxy coating for corrosion resistance. This KENCO level transmitter uses a non-contacting, magnetostrictive technology. This simple design ensures no scheduled maintenance or re-calibration – ever. Accurate, non-contact float location sensing is achieved with absolutely no wear to any of the sensing elements.

PRINCIPLE OF MAGNETOSTRICTION

The level transmitter is composed of two concentric members. The outermost member is a protective 316 stainless steel tube that withstands aggressive or harsh process industry environments. The heart of the transmitter design is the innermost member, the waveguide, a formed element constructed of a proprietary magnetostrictive material.

A pulse is induced in the waveguide by the momentary interaction of two magnetic fields, one from an electric current pulse launched along the waveguide and the other from the magnet inside the float. This interaction produces a strain pulse that travels along the waveguide. The location of the magnet inside the float is determined by measuring the elapsed time between the launching of the electronic pulse and the detection of the strain pulse by the sensor head. The time period measurement is used to produce a 4-20mA output.

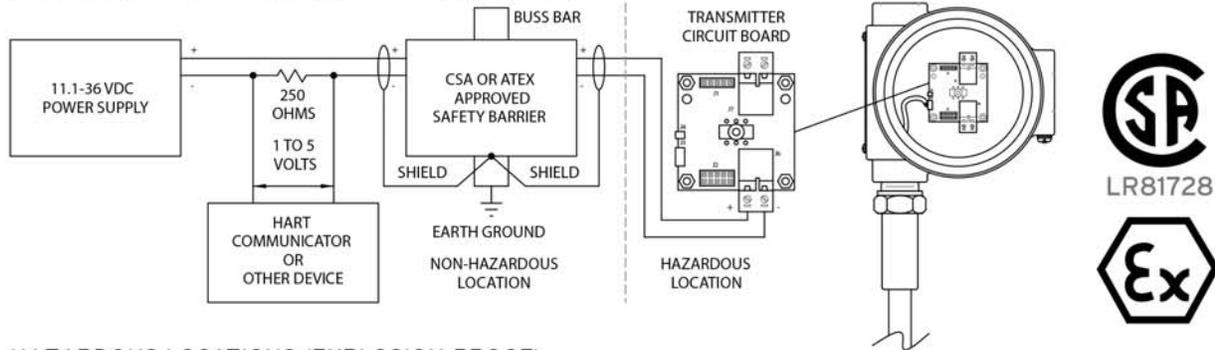




ELECTRICAL CONNECTIONS AND WIRING PROCEDURES

A typical intrinsically safe connection for the KMD Transmitter includes protective safety barriers, a power supply, and a reading or monitoring device.

HAZARDOUS LOCATIONS (INTRINSICALLY SAFE)



HAZARDOUS LOCATIONS (EXPLOSION-PROOF)

A typical explosion-proof connection for the KMD Transmitter includes a power supply and a reading or monitoring device connected via an explosion-proof conduit.

PARAMETER

SPECIFICATIONS

LEVEL OUTPUT

Measured Variable	Product Level	ATEX rating is available on request only.
Full-Range	0.5 to 25' (152 mm to 7620 mm)	
Non-linearity Fullspan	0.020% F.S. or 1/32" (0.794 mm), whichever is greater	
Repeatability	0.01% F.S. or 0.015" (0.381 mm), whichever is greater	
Process Operating Temperature	-40 to 400°F. Contact KENCO for higher temperature requirements	

TRANSMITTER LOOP

Input Voltage Range	11.1 to 36 Vdc
Reverse Polarity Protection	Series diodes
Safety Approval	CSA certified explosion-proof: Class I, Division 1, Groups B, C, D; Class II, Division 1, Groups E, F, G; Class III ATEX certified intrinsically safe: EEx ia IIB T4 CSA certified intrinsically safe: Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III

CALIBRATION

Zero Adjust Range	Anywhere within the active length
Span Adjust Range	FS \geq 0.5' (152 mm) from zero

ENVIRONMENTAL

Sealing	Potted sensor cartridge and electronics
Humidity	0 to 100% R.H.
Operating Temperature	-30 to 160°F (-34 to 71°C)
Materials	316 stainless steel

FIELD INSTALLATION

Transmitter Length	20" to 300" (508 mm to 7620 mm)
Wiring	Two-wire, twisted, shielded pair cable to screw terminals through a 3/4" (19 mm) NPT conduit opening

DISPLAY

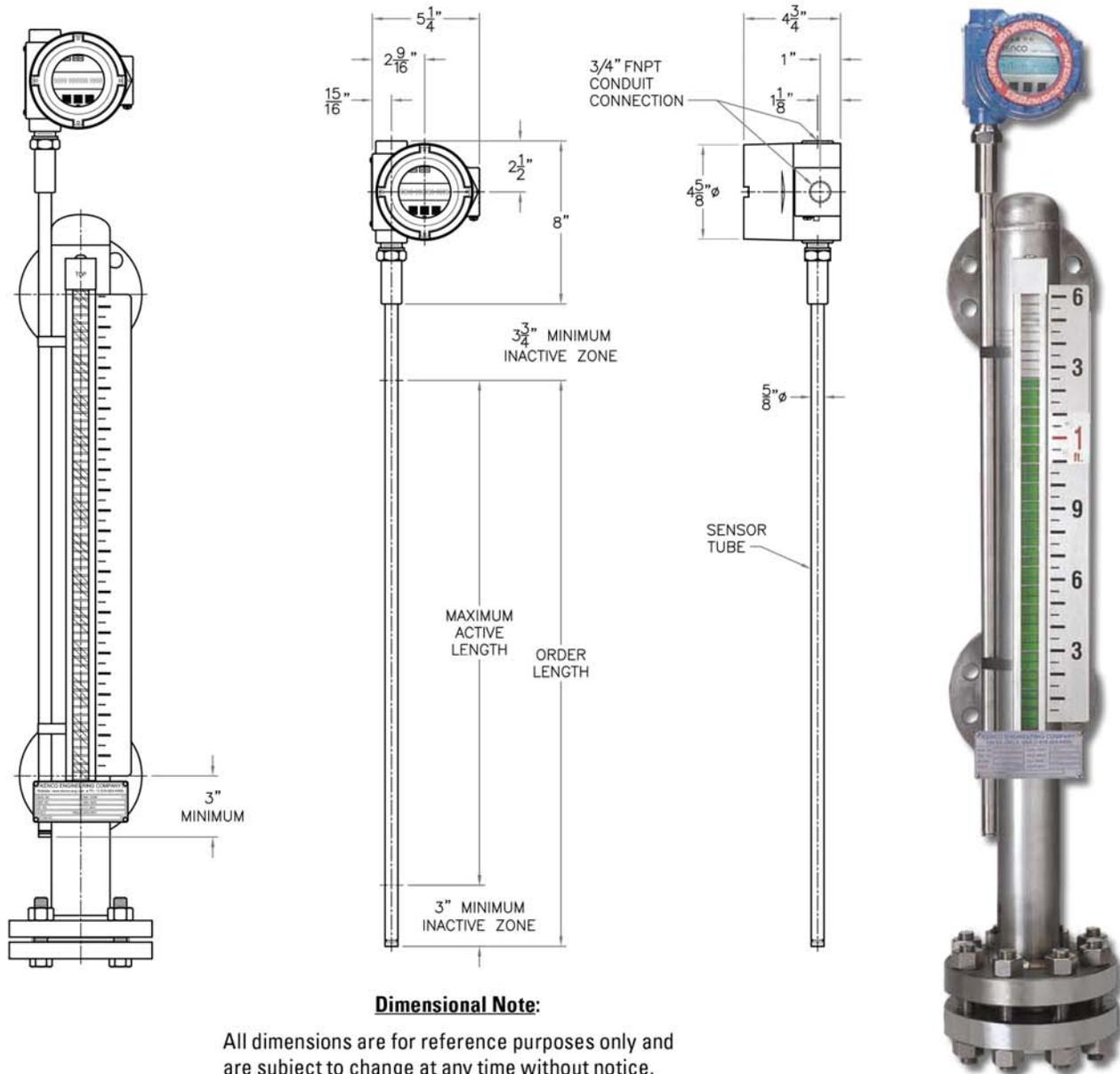
Measured Variables	Liquid Level
Update Rate	3 seconds
Size	0.5"
Number of Digits	16
Units	% of span, 4-20mA, Feet, Inches, Meters, Centimeters, or Millimeters

HART® COMMUNICATIONS standard

All specifications are subject to change without notice. Consult KENCO for verification of specifications critical to your needs.



TRANSMITTER DIMENSIONS



Dimensional Note:

All dimensions are for reference purposes only and are subject to change at any time without notice.

MOUNTING INSTRUCTIONS

The KMD transmitter is mounted directly to the housing of the KENCO Magna-Site liquid level gauge. In a typical configuration, the magnetic flag assembly and transmitter are attached to the gauge housing with mounting clamps provided. Install the transmitter to the right or left of the flag assembly by placing the transmitter sensor tube 90 degrees away from the flag assembly. Tighten the mounting clamps provided around the transmitter sensor tube. Allow for minimum inactive zone of 3 inches at the bottom of the sensor tube by placing bottom of sensor 3 inches below the zero setting (centerline of bottom gauge process connection).

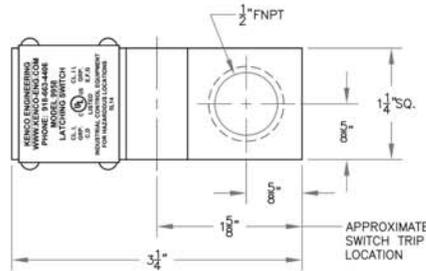
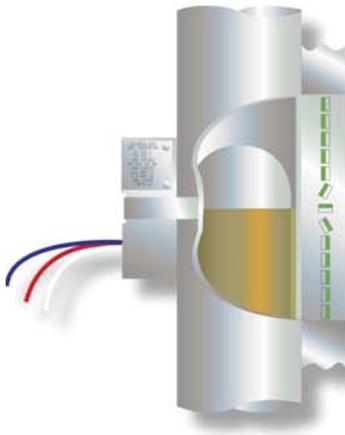
NOTE: The transmitter head can be rotated 360 degrees when mounted as shown.

NOTE: The transmitter may also be mounted with the transmitter head at the foot of the gauge. Contact KENCO for specifics.



MAGNA-SITE ACCESSORIES

EXPLOSION-PROOF HIGH OR LOW LEVEL SWITCHES



- Can activate alarms, pumps, or valves when the liquid reaches high or low levels
- Does not come in contact with process liquid



CL. I, GRP. C, D
 C  US
 LISTED
 INDUSTRIAL CONTROL EQUIPMENT
 FOR HAZARDOUS LOCATIONS
 CL. II, GRP. E, F, G

SPECIFICATIONS:

MODEL NUMBER 9958 – LATCHING SWITCH

- C-UL-US approved for Class I, Div. 1, Div. 2, Groups C & D, Class II, Div. 1, Div. 2, Groups E, F, & G
- Housing material: Aluminum (other materials available)
- Switch: SPDT, latching reed normally open or normally closed form C contacts
- Maximum temperature: 221°F or 105°C. (Contact KENCO for higher temperatures).
- Maximum switching volts: 100 Vdc, 140 Vac
- Maximum switch current: 0.20 Amps DC, 0.14 Amps AC
- Maximum power: 4 watts
- Conduit connection: 1/2" female NPT with 18 AWG x 18" long wire leads

MODEL 9959 – NON-LATCHING SWITCH

- C-UL-US approved for Class I, Div. 1, Div. 2, Groups C & D, Class II, Div. 1, Div. 2, Groups E, F, & G
- Housing material: Aluminum (other materials available)
- Switch: SPST, non-latching reed normally open form A contacts
- Maximum temperature: 221°F or 105°C. (Consult factory for higher temperatures).
- Maximum switching volts: 100 Vdc, 140 Vac
- Maximum switch current: 0.25 Amps DC, 0.18 Amps AC
- Maximum power: 7 watts
- Conduit connection: 1/2" female NPT with 18 AWG x 18" long wire leads



HEIGHT SCALES

- Standard scales are 304 stainless steel with no. 3 finish
- Standard scales show height in feet/inches or meters/centimeters
- Large numerical characters offer increased visibility
- Standard scale division marks/characters are etched and paint filled
- Can be calibrated for any unit of measure

INSULATION BLANKET

- Withstands temperatures up to 750°F
- Standard shell material is silicone impregnated fiberglass cloth
- Also available in other materials based on application
- Steam tracing also available





APPLICATION WORKSHEET

REQUESTED BY: _____ COMPANY: _____
 ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____
 PHONE: _____ FAX: _____ EMAIL: _____

KMLG — [] — [] — [] — [] — [] — []

Mounting Style Options
 A=FNPT End Connections
 B=MNPT Side Connections
 C=Flanged Side Connections
 D=Top of Tank (Consult Factory)
 E=Removable Flange Top Connection
 F=Fixed Flange Vent Connection
 G=Removable Flange Vent Connection
 X=Special Configuration
 (Describe in Comments Box Below)

Indication Length (L)
 (In Inches)

Process Connection Size
 0.5=1/2"
 0.75=3/4"
 1=1"
 1.5=1-1/2"
 2=2"
 2.5=2-1/2"
 3=3"
 4=4"
 6=6"

***Pipe Flange Class**
 150=150#
 300=300#
 600=600#
 900=900#
 1500=1500#
 2500=2500#

Construction Material
 A=316 SS
 B=316 SS; Carbon Steel Flanges
 C=304 SS
 D=304 SS; Carbon Steel Flanges
 E=PVC
 F=CPVC
 G=PTFE Lined 316 SS
 H=PTFE Lined 316 SS; Carbon Steel Flanges
 J=PTFE Lined 304 SS
 K=PTFE Lined 304 SS; Carbon Steel Flanges
 L=Alloy 20
 N=Hastelloy C-276

see pages 6-7

**Note: Flanges are raised face unless otherwise specified*

[] — [] — [] — [] — [] — [] — []

Liquid Specific Gravity
 0.50 and up
 Consult factory for lower specific gravities

Maximum Working Pressure (psig)

Maximum Operating Temperature (°F)

Vent/Drain Options
 N=None
 TVD=FNPT Vent/Drain
 TD=FNPT Drain only
 TV=FNPT Vent only
 FVD=Flanged Vent/Drain
 FD=Flanged Drain only
 FV=Flanged Vent only
 X=Other (Please Specify in Comments Box Below)

Vent/Drain Size
 N=None
 0.25=1/4"
 0.5=1/2"
 0.75=3/4"
 1=1"
 X=Other (Please Specify in Comments Box Below)

Scale
 N=None
 HS=304 SS Height Scale in Feet/Inches*
 MHS=304 SS Height Scale in Meters/Centimeters*
 XS=% scale, marked every 5%, labeled every 10%
 SHS=Other special Scale
 (Describe in Comments Box Below)*

Other Gauge Options

Interface Applications: To read the level of the lower liquid, please list the specific gravity of upper/lower liquids. Example = 0.85/1.0

*Note: Zero at the beginning of visual on lower end of gauge, unless otherwise specified.

KMD=KENC0 Magnetostrictive Transmitter
 40=SCH. 40 Gauge Housing Pipe (SCH. 10 Standard)
 LS=9958 Latching Switches (Specify Quantity)
 NLS=9959 Non-Latching Switches (Specify Quantity)
 IB=Insulation Blanket
 ST=Steam Tracing
 X=Other (Describe in Comments Box Below)

Option 1

Option 2

Option 3

Option 4

Liquid in Tank

Comments

Example: [KMLG-C-36-2-150-A-0.71-175-100-TVD-0.5-HS-LS(2)] is a Magna-Site with flanged side connections, 36" indication length (L), 2" 150 lb. R.F. flanged process connections, 316 stainless steel construction, float specific gravity of 0.71, a maximum working pressure of 175 psig at 100°F, 1/2" FNPT vent/drain, a 304 stainless steel height scale in feet/inches, and (2) 9958 latching switches.



TUBULAR GLASS GAUGE VALVES (GAUGE COCKS)

KTV TUBULAR VALVES FOR LIQUID LEVEL GAUGES



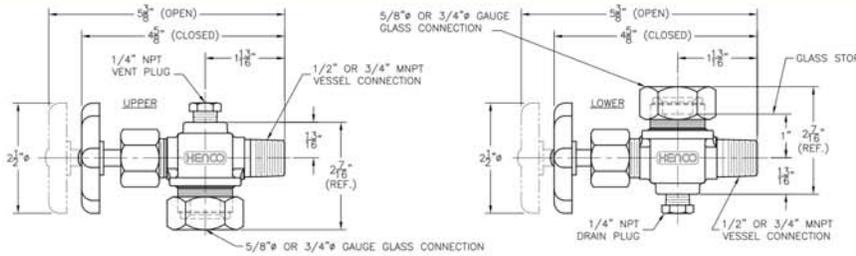
APPLICATION:

The KENCO Tubular Valve (KTV), when used with a KENCO "SAFEGUARD" level gauge or KENCO "EPG" level gauge, provides maximum operator safety and environmental protection from a potential gauge glass failure. The KTV is designed for service in low to medium pressure applications up to 500 psig.

FEATURES:

- Available in carbon steel or 316 stainless steel
- The 1/8" thick stuffing box O-ring provides easy installation of the glass and requires less wrenching of the packing nut to seal
- Positive O-ring seal gauge glass connection
- 1/2" or 3/4" MNPT rigid vessel connections
- Ball check shut off will protect tank inventory
- Straight pattern design
- Braided PTFE stem packing
- All valves are supplied with 316 S.S. valve stems, ball checks and glass packing washer
- The bodies are precision cast investment castings with each body pressure tested to assure quality
- When ball checks are removed, KTV is suitable for steam applications
- Flanged vessel connections available

KTV TUBULAR VALVES



ORDERING SYSTEM KTV Tubular Valves

REQUESTED BY: _____ COMPANY: _____
 ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____
 PHONE: _____ FAX: _____ EMAIL: _____

KTV				
Valve Style		Valve Body Material	Seal Material	Maximum Working Pressure (PSIG)
Process Connections		SS=316 Stainless Steel CS=Zinc Plated Carbon Steel	V=Fluorocarbon A=Aflax B=Buna-N T=FEP Encapsulated Silicone E=Ethylene Propylene	
50=1/2" MNPT w/ 5/8" O.D. Gauge Glass Connection 75=3/4" MNPT w/ 3/4" O.D. Gauge Glass Connection 50FL=1/2" 150# R.F. Flange and 3/4" O.D. Gauge Glass Connection 75FL=3/4" 150# R.F. Flange and 3/4" O.D. Gauge Glass Connection 10FL=1" 150# R.F. Flange and 3/4" O.D. Gauge Glass Connection 15FL=1-1/2" 150# R.F. Flange and 3/4" O.D. Gauge Glass Connection 20FL=2" 150# R.F. Flange and 3/4" O.D. Gauge Glass Connection 10FL300=1" 300# R.F. Flange and 3/4" O.D. Gauge Glass Connection 15FL300=1-1/2" 300# R.F. Flange and 3/4" O.D. Gauge Glass Connection 20FL300=2" 300# R.F. Flange and 3/4" O.D. Gauge Glass Connection				
		Maximum Operating Temperature (°F)	Steam	
			S=Steam Application NS=Non-Steam Application	

• Example Order Number: KTV50-SS-B-100-AMB-NS



LIQUID LEVEL GAUGES

SAFEGUARD SERIES LEVEL GAUGE

(SHIELDED TUBULAR LIQUID LEVEL GAUGE, U.S. Patent Number 4693117)



APPLICATION:

The Safeguard liquid level gauge replaces unprotected tubular glass that is mounted between tubular gauge glass valves. The packing nut on the tubular valve tightens around the metal nozzles of the Safeguard gauge, not glass! Nozzles match the O.D. of 5/8" glass or 3/4" glass. Gauge is suitable for low to medium pressure applications to 500 psig.

SAFETY:

Sight tube is totally enclosed on three sides by a metal frame and on the front with a shield.

ONE PIECE ASSEMBLY:

One continuous gauge provides total visibility of the liquid level of a tank. Maximum length is 25 feet. No stacking of gauges is needed.

ECONOMICAL:

One Liquid Level Gauge per tank with a set of KENCO tubular valves gives the full view of the liquid level in the tank.

EASY TO INSTALL:

Insert the 5/8" or 3/4" metal nozzles into the existing valves. The stuffing box seals around the metal nozzle, not the glass.

VOLUME AND HEIGHT SHIELDS:

The shield can be supplied with various scales indicating height, calibration rate, or tank volume. Refer to page 12 to see the assortment of standard shield options.

EPG SERIES LEVEL GAUGE

(ENVIRONMENTAL PROTECTION GAUGE, U.S. Patent Number 5442959)

APPLICATION:

The KENCO Environmental Protection Gauge protects the glass with a 360° UV stabilized polycarbonate tube. This gauge is ideal for an outdoor environment where the gauge is exposed to the elements (i.e. hail, wind, etc.). The gauge is priced to be an economic alternative to a tubular gauge glass shrouded by expanded metal. The EPG will operate in low to medium pressure applications to 500 psig.

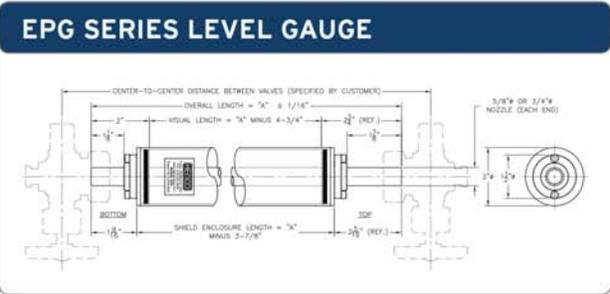
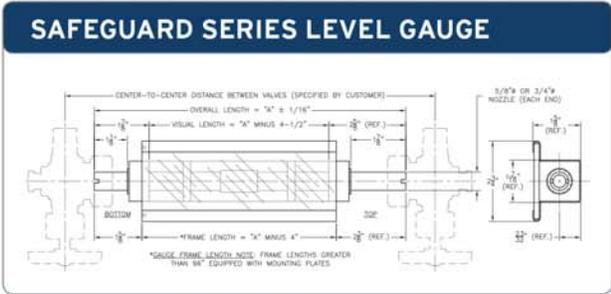
FEATURES:

- Replaces unprotected tubular gauge glass.
- 360° visibility of fluid level.
- Redline glass is standard for easy viewing of fluid level.
- The tubular valve packing nut tightens around 316 S.S. nozzles, not glass!
- Outer tube is high impact UV stabilized polycarbonate tubing.
- 316 S.S. nozzles available in 5/8" O.D. or 3/4" O.D.
- Maximum overall length is 52-3/4". For longer lengths, use Safeguard Level Gauge.
- Easy to install - Insert the 5/8" O.D. or 3/4" O.D. nozzles into the valves.
- Ideal for use with KENCO Tubular Valves (KTV).





MODERN ENGINEERED PRODUCTS, INC.



ORDERING SYSTEM

REQUESTED BY: _____ COMPANY: _____
 ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____
 PHONE: _____ FAX: _____ EMAIL: _____

SAFEGUARD SERIES LEVEL GAUGE

<input type="text"/> Gauge Style 62=5/8" O.D. Tubular Connection 75=3/4" O.D. Tubular Connection	<input type="text"/> Center-to-Center Dimension (inches)	<input type="text"/> Material of Construction C=Zinc Plated Carbon Steel A=Stainless Steel W=316 Stainless Steel Wetted Parts w/ Carbon Steel Frame PC= PVC Wetted Parts w/ Carbon Steel Frame PS= PVC Wetted Parts w/ Stainless Steel Frame Other (please specify)	<input type="text"/> Seal Material V=Fluorocarbon A=Aflas B=Buna-N T=PTFE E=Ethylene Propylene
<input type="text"/> Shield Options L=Clear Polycarbonate H=Height Scale RH=Rate Height Scale MH=Metric Height Scale MRH=Metric Rate Height Scale M=Expanded Metal Guard	<input type="text"/> Sight Tube Options** GS=5/8" O.D. Glass (Standard) RL=5/8" O.D. Redline Glass	<input type="text"/> Maximum Working Pressure (PSIG)	<input type="text"/> Maximum Operating Temperature (°F)
<input type="text"/> Steam S=Steam Application NS=Non-Steam Application	<input type="text"/> Valve Manufacturer KENCO Other (Please Specify)	<input type="text"/> Valve Manufacturers Part # KTV Other (Please Specify)	<input type="text"/> Overall Length (Inches) To Be Determined By KENCO

EPG SERIES LEVEL GAUGE

<input type="text"/> Gauge Style EPG-5/8=5/8" O.D. Tubular Connection EPG-3/4=3/4" O.D. Tubular Connection	<input type="text"/> Center-to-Center Dimension (inches)	<input type="text"/> Seal Material V=Fluorocarbon A=Aflas B=Buna-N T=FEP Encapsulated Silicone E=Ethylene Propylene	<input type="text"/> RL <input type="text"/> Sight Tube Option RL=5/8" O.D. Redline Glass	<input type="text"/> Maximum Working Pressure (PSIG)
<input type="text"/> Maximum Operating Temperature (°F)	<input type="text"/> Steam S=Steam Application NS=Non-Steam Application	<input type="text"/> Valve Manufacturer KENCO Other (Please Specify)	<input type="text"/> Valve Manufacturers Part # KTV Other (Please Specify)	<input type="text"/> Overall Length (Inches) To Be Determined By KENCO

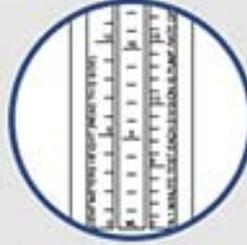
** Based on application data provided, KENCO will select the appropriate sight tube material, i.e. high pressure glass.

**RH**

The Rate/Height shield is used for checking the pump rate of a chemical pump. It is calibrated in QTS/24 Hrs., ML/Min and has a height scale labeled in 1/4" increments.

**MRH**

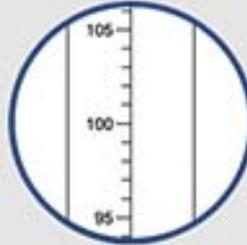
The Metric Rate/Height shield is calibrated in ML/Min and Liters/24 hrs. The height scale is labeled in 1 CM divisions.

**H**

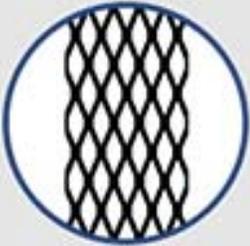
The Height shield is marked in 1/4" increments and labeled every inch.

**MH**

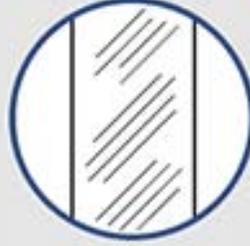
The Metric Height shield is marked in 1 CM increments and labeled every 5 CM.

**M**

The Expanded Metal shield is made from flattened expanded metal and is available in electroplated carbon steel or 304 stainless steel.

**L**

The Clear Polycarbonate shield has no markings, and provides 100% visibility well as environmental protection.





MODERN ENGINEERED PRODUCTS, INC.

VISIBILITY & RELIABILITY

SIGHT FLOW INDICATORS & SIGHT WINDOWS



FEATURING KSF SIGHT FLOW INDICATORS



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

POWER

- Turbine Lubricant Flow
- Cooling Line Water Flow

OEM

- Compressor Water Flow
- Solvent Recirculation
- Pre- and Post-Filter Trap Monitoring

WASTEWATER TREATMENT

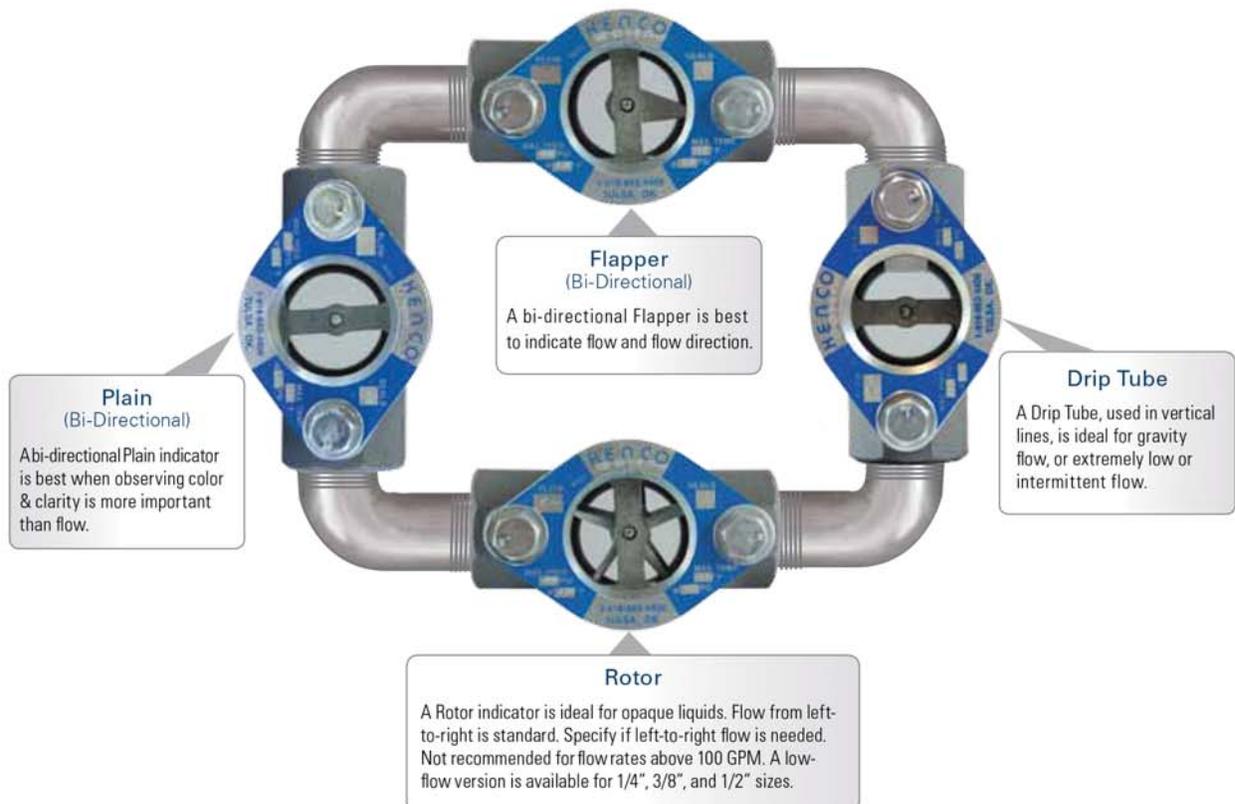
- Second Stage Aeration Tank Pumping Lines

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.

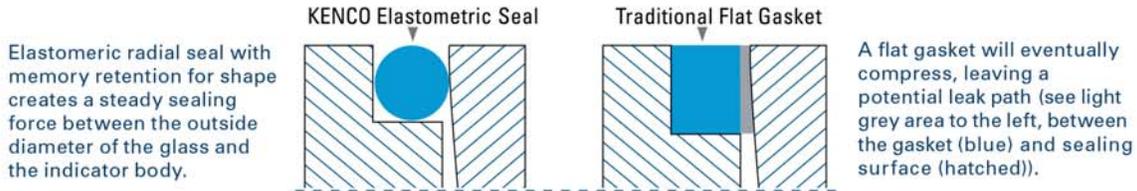




MODERN ENGINEERED PRODUCTS, INC.

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:



MODULAR DESIGN

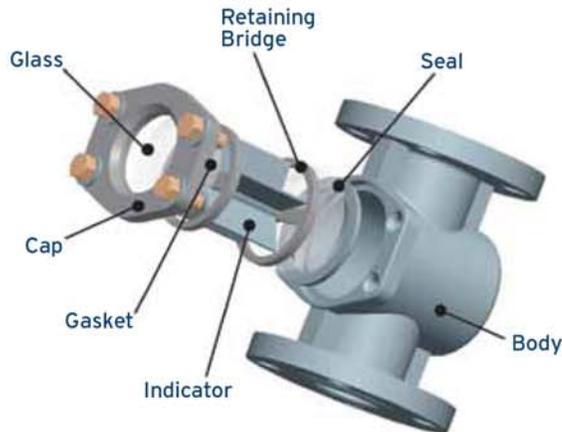


KENCO Modular Design



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.

Pressure / Temperature Ratings (Standard Seals)

KSF	Max. Pressure	Max Temperature
ST Series (1/4"–4")	150psig @ 150°F	225°F @ 150psig
ST Series (6"–12")	200psig @ 150°F	250°F @ 135psig
HT Series (Threaded)	400psig @ 150°F	350°F @ 200psig
HT Series (Flanged) Carbon Steel	235psig @ 100°F	350°F @ 205psig
HT Series (Flanged) 316SS	275psig @ 100°F	350°F @ 205psig
HT Series (Flanged) Ductile Iron	275psig @ 100°F	350°F @ 205psig

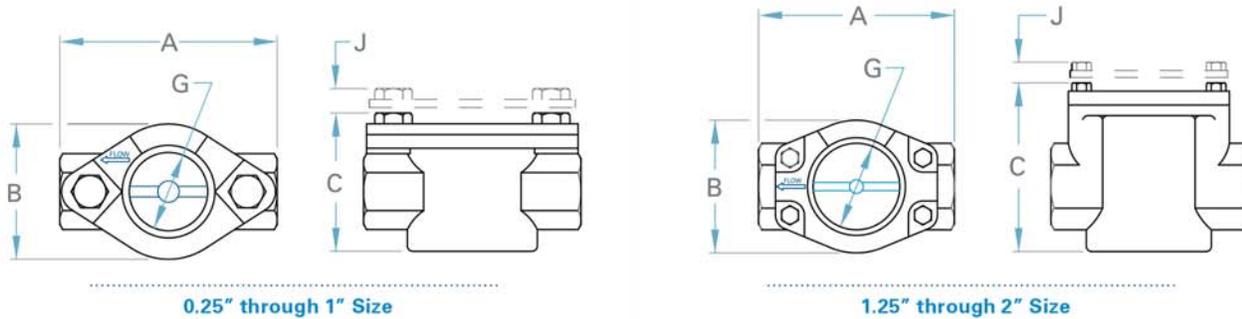
Seal/Indicator Material Temperature Ratings

Seal Material	Temperature
Neoprene (ST Series Std.)	-20° to 250°F
Viton® (HT Series Std.)	0° to 400°F
Buna-N	-20° to 212°F
EPT	-50° to 250°F
Teflon®	-40° to 450°F
Kalrez®	0° to 500°F
High Temperature (PTFE)	0° to 500°F
Indicator Material	Temperature
Delrin®	-40° to 250°F
Ryton®	-40° to 450°F
Teflon®	-40° to 450°F



PRODUCT DIMENSIONS - INCHES

Threaded KSF Sight Flow Indicators



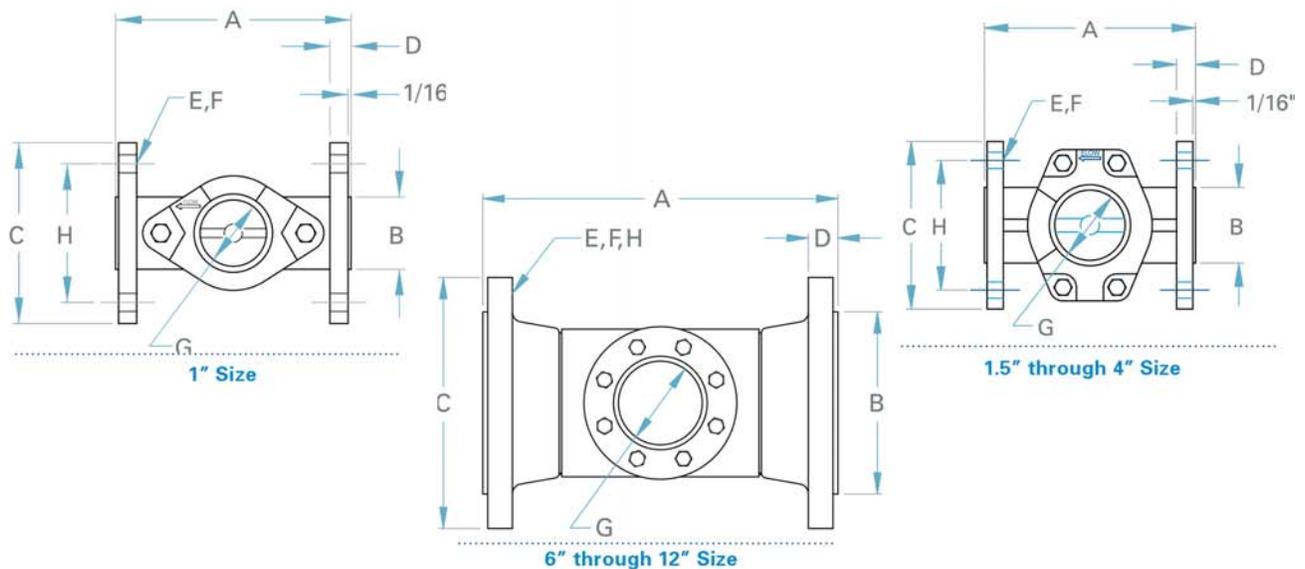
0.25" through 1" Size

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



1" Size

1.5" through 4" Size

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	4.0
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



MODERN ENGINEERED PRODUCTS, INC.

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	5.20	15.00	29.03	35.00



CONSTRUCTION MATERIALS

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

ORDERING SYSTEM

KSF Sight Flow Indicators

REQUESTED BY: _____ COMPANY: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ FAX: _____ EMAIL: _____

— — —

Sight Flow Style

KSF=Cast Body Sight Flow Indicator
 KPJ=Competitor Dimension Matched Cast Body Sight Flow Indicator

Design Rating

ST=Standard
 HT=High Temp./High Pressure

Connection Type

F=Flanged (150#)
 F3=Flanged (300#)
 T=Threaded

Connection Size

Threaded	Flanged
0.25=1/4"	0.75=3/4" (KPJ only)
0.375=3/8"	1.0=1"
0.5=1/2"	1.5=1-1/2"
0.75=3/4"	2.0=2"
1.0=1"	3.0=3"
1.5=1-1/2"	4.0=4"
2.0=2"	6.0=6"
	8.0=8"
	10.0=10"
	12.0=12"

Seal Material

B=Buna-N
 N=Neoprene
 E=Ethylene Propylene
 V=Viton®
 T=Teflon®
 K=Kalrez®
 P=High Temp. PTFE

Material of Construction (Body)

C=Carbon Steel
 B=Bronze (Threaded Connections only)
 S=316 Stainless Steel
 I=Ductile Iron (3" & 4" Sizes Only)

Indicator Style

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)

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

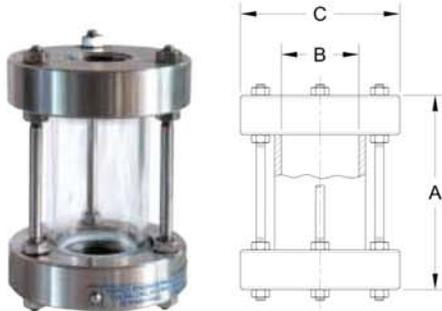


FULL VIEW & ARMORED SIGHT FLOW INDICATORS

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

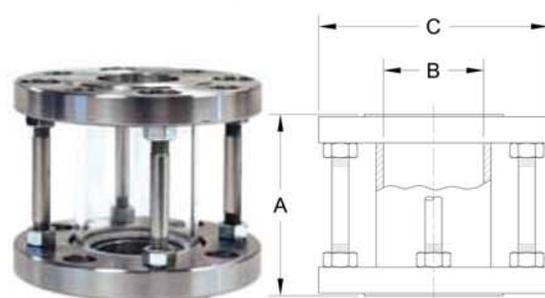
Full View: Threaded End Plates



Size (Inches)	Dimensions			Pressure Rating (psig)
	*A	B (I.D.)	C	
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 (Inches)	Dimensions			Pressure Rating (psig)
	*A	B (I.D.)	C	
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.

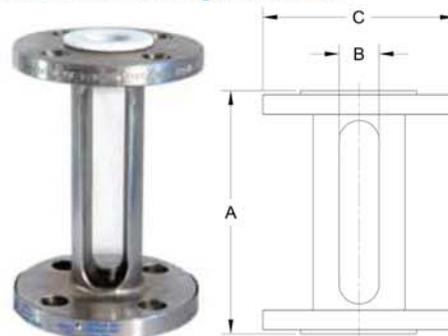
Armored: Threaded End Plates



Size (Inches)	Dimensions			Pressure Rating (psig)
	*A	B	C	
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 (Inches)	Dimensions			Pressure Rating (psig)
	*A	B	C	
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 Flow Indicators

REQUESTED BY: _____ COMPANY: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ FAX: _____ EMAIL: _____

Sight Flow Style

ASF=Armored
FVSF=Full View

Connection Type

F=Flanged
T=Threaded

Connection Size

Threaded	Flanged
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"
<i>Contact Factory for other sizes</i>	3.0=3"
	4.0=4"
	6.0=6" (FVSF Only)

Seal Material

A=Aflas
B=Buna-N
N=Neoprene
E=Ethylene Propylene
TE=FEP Encapsulated Silicone (ASF Only)
V=Fluorocarbon
K=Kalrez (ASF Only)
TN=PTFE Envelope - Neoprene Filler (FVSF Only)
TV=PTFE Envelope - Fluorocarbon Filler (FVSF Only)

Material of Construction (Body)

N/A on FVSF (leave blank)
CS=Carbon Steel
S4=304 Stainless Steel
S6=316 Stainless Steel

Material of Construction (End Plate)

N/A on ASF-F (leave blank)
CS=Carbon Steel
S4=304 Stainless Steel
S6=316 Stainless Steel
A20=Alloy 20
P=PVC
CP=CPVC

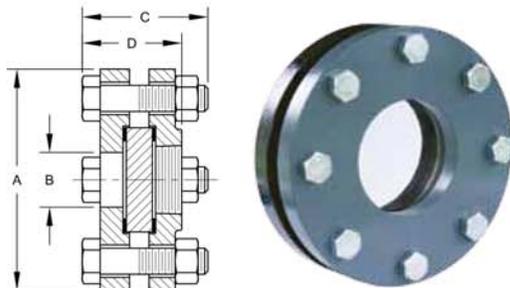
• Example Order Numbers: ASF-F-1.0-N-CS; ASF-T-1.0-N-CS-S6; FVSF-F-1.0-N-CS; FVSF-T-1.0-N-CS

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.

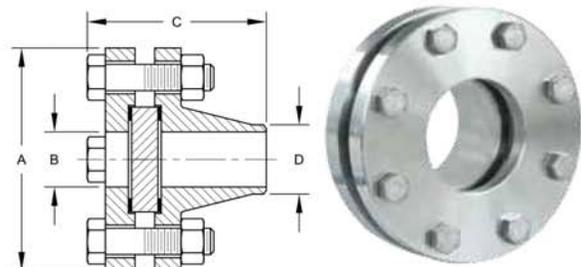
PRODUCT DIMENSIONS

Threaded Flange Window (TFW)



Size	A	B	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)

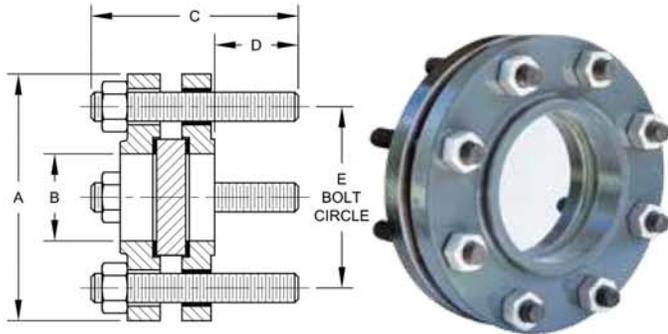


Size	A	B	C (STD)	C (ANSI)	D
1"	4.25"	1.05"	3.31"	3.31"	1.32"
1.5"	5.00"	1.61"	3.81"	3.81"	1.90"
2"	6.00"	2.07"	4.06"	4.19"	2.38"
3"	7.50"	3.07"	4.69"	4.69"	3.50"
4"	9.00"	4.03"	4.94"	4.94"	4.50"
6"	11.00"	6.07"	5.56"	6.06"	6.63"
8"	13.50"	7.98"	6.44"	6.94"	8.63"

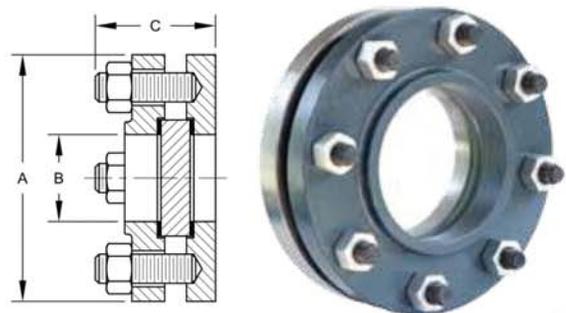


PRODUCT DIMENSIONS - INCHES

Bolted Flange Window (BFW)



Flat Plate Window (FPW)



Size	A	B	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	A	B	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. Press.
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

ORDERING SYSTEM

Sight Windows

REQUESTED BY: _____ COMPANY: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ FAX: _____ EMAIL: _____

Window Style

BFW=Bolted Flange
FPW =Flat Plate
TFW =Threaded Flange
WNW=Weld Neck

Flange Size

10=1"
15=1-1/2"
20=2"
30=3"
40=4"
60=6"
80=8"

Sight Window Material

C=Carbon Steel
W=316 Stainless Steel
Wetted w/Carbon
Steel Cover Flange
A=316 Stainless Steel
w/Stainless Steel
Cover Flange
X=Other (Specify)

Wetted Gasket Material

N=Neoprene
TN=PTFE Envelope-
Neoprene Filler
V=Fluorocarbon
TV=PTFE Envelope-
Fluorocarbon Filler
A=Non-Asbestos
*Contact Factory
for other materials*

Pressure Classification

S=Standard
A=ANSI

• Example Order Number: FPW-20-A-N-A