VERSATILITY & DURABILITY

TUBULAR GLASS GAUGES & VALVES FOR PROCESS LEVEL MEASUREMENT by KENCO



*FEATURING **NEW** K9900 SERIES LIQUID LEVEL GAUGE*

ENGINEERED LIQUID LEVEL SOLUTIONS

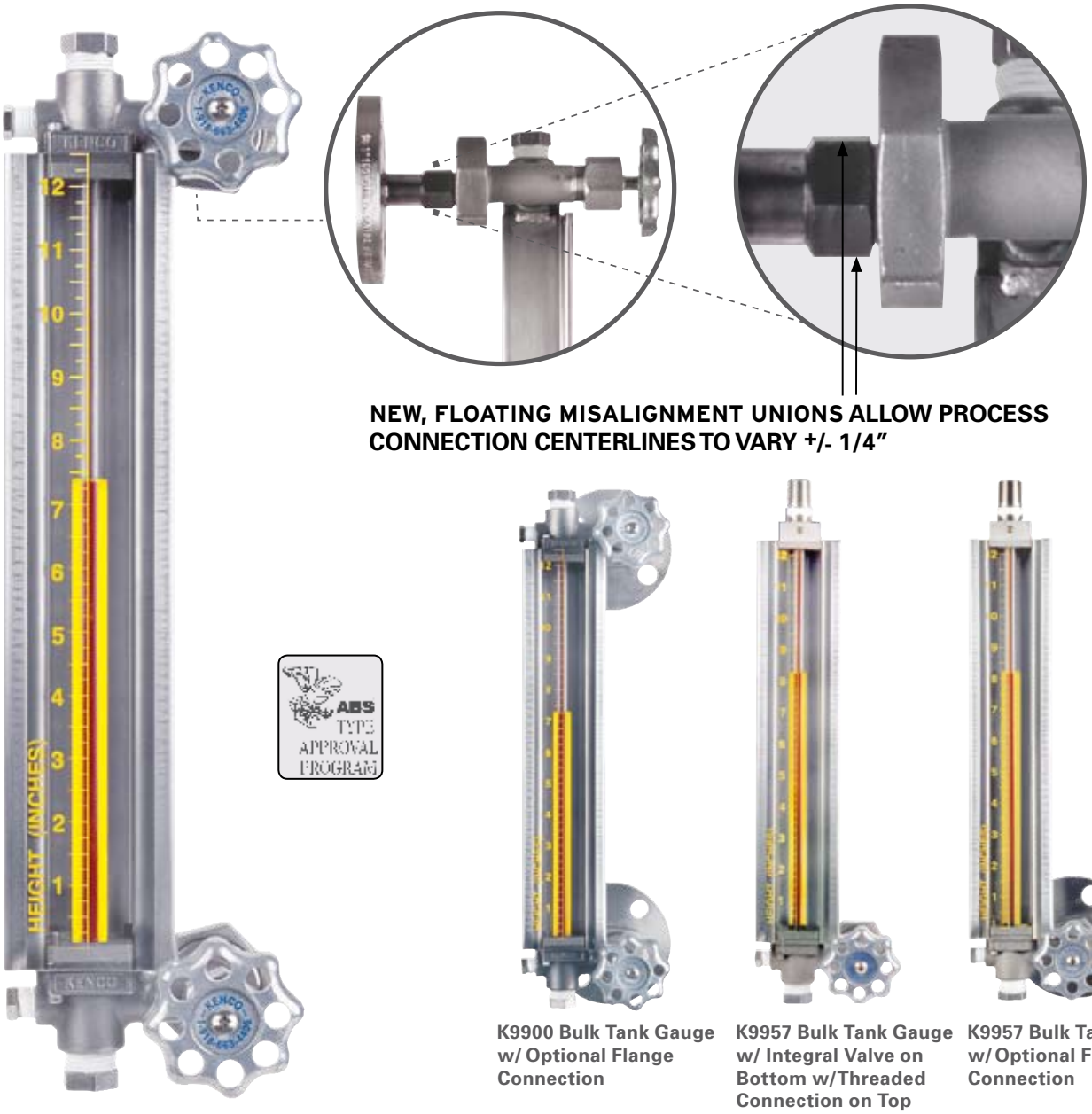
KENCO ENGINEERING

www.kenco-eng.com

LIQUID LEVEL GAUGES

K9900 LEVEL GAUGE WITH INTEGRAL VALVES AND MISALIGNMENT UNIONS

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



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

K9900 Bulk Tank Gauge w/ Optional Flange Connection

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

K9957 Bulk Tank Gauge w/ Optional Flange Connection

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" 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.

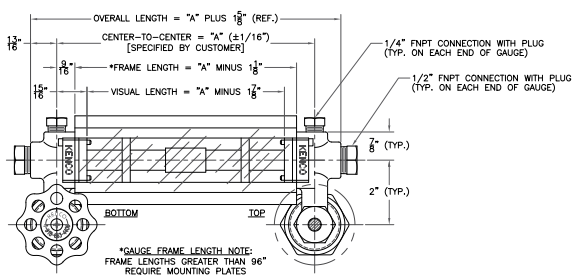
APPLICATIONS

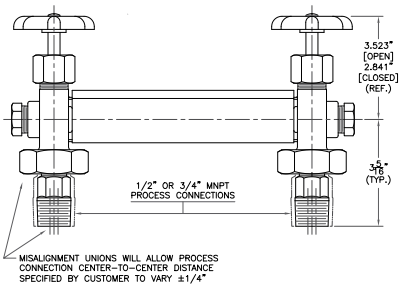
- Low to Medium pressure applications up to 500 psi
- Bulk storage tanks
- Marine
- Low pressure scrubbers and surge tanks
- Seal pots

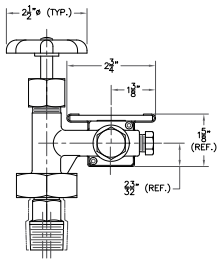
PRODUCT FEATURES

- 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" vent and drain ports for routine gauge glass maintenance
- Additional 1/4" port available 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

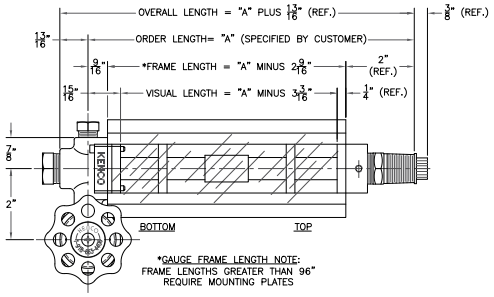
K9900 BULK TANK GAUGE

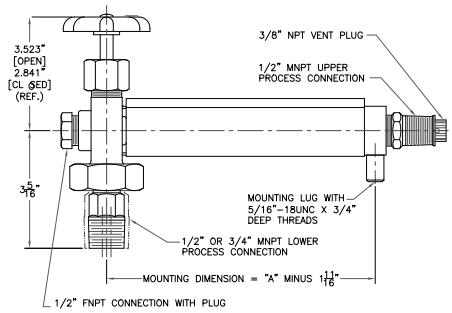


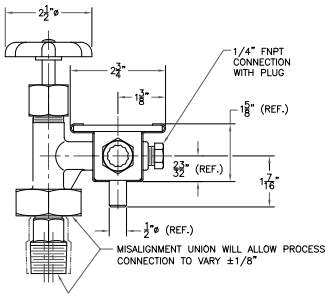




K9957 BULK TANK GAUGE







ORDERING SYSTEM
K9900 Series Bulk Tank Gauge

REQUESTED BY: _____ COMPANY: _____

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

PHONE: _____ FAX: _____ EMAIL : _____

Gauge Style	**Process Connections**	**Center to Center Dimension (inches)**	**Material of Construction**	**Seal Material**
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	M50=1/2" MNPT M75=3/4" MNPT FL50=1/2" Flange FL75=3/4" Flange FL1.0=1" Flange FL1.5=1.5" Flange FL2.0=2" Flange		C=Zinc Plated Carbon Steel A=Stainless Steel	V=Fluorocarbon A=Aflas B=Buna-N T =FEP Encapsulated Silicone E=Ethylene Propylene

Shield Options*	**Sight Tube Options****	**Maximum Working Pressure (PSIG)**	**Maximum Operating Temperature (°F)**	**Steam**
L=Clear Polycarbonate H=Height Scale RH=Rate Height Scale MH=Metric Height Scale MRH=Metric Rate Height Scale M=Expanded Metal Guard	GS=5/8" O.D. Glass RL=5/8" O.D. Redline Glass			S=Steam Application NS=Non-Steam Application

• Example Order Number: K99FL1.0-35-A-E-L-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.

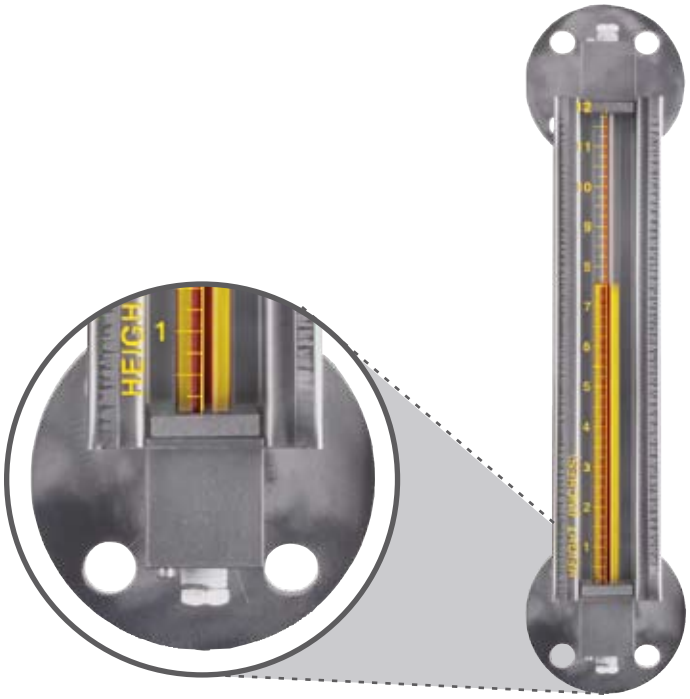
FEATURES

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 maintenance of the level gauge.

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

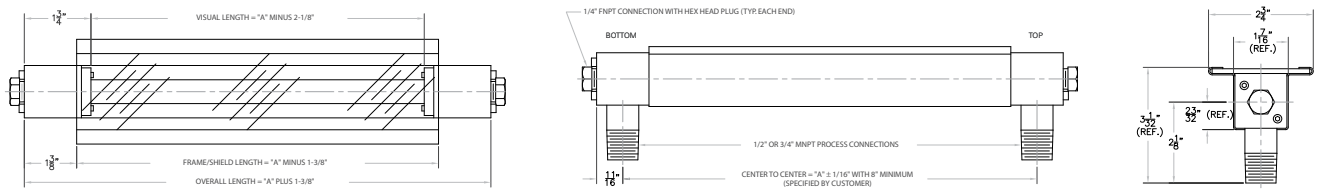
The sight tube of the 8800 Series Level Gauge is totally protected. Three sides of the gauge are enclosed with a metal frame, while the face of the gauge is protected with a polycarbonate shield. This shield can be custom calibrated to read tank volume or any other calibration. Refer to the Shield Specifications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

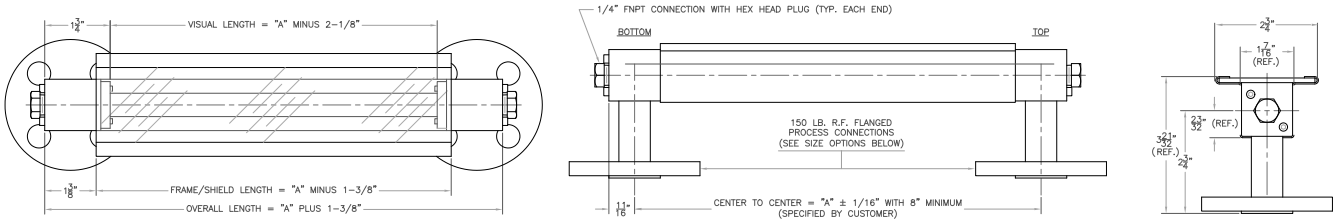


8800 Bulk Tank Gauge with
Optional Flange Connection

8800 SERIES LEVEL GAUGE WITH THREADED PROCESS CONNECTIONS



8800 SERIES LEVEL GAUGE W/ OPTIONAL FLANGE CONNECTIONS



ORDERING SYSTEM
8800 Series Level Gauge

REQUESTED BY: _____ COMPANY: _____

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

PHONE: _____ FAX: _____ EMAIL : _____

88				

Gauge Style
88=Gauge with 90° Connections

Process Connections
M50=1/2" MNPT
M75=3/4" MNPT
F50=12" FNPT
F75=3/4" FNPT
FL50=1/2" FLANGE
FL75=3/4" FLANGE
FL1.0=1" FLANGE
FL1.5=1.5" FLANGE
FL2.0=2" FLANGE

Center to Center Dimension (inches)

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)

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 (Standard)
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: 88M50-68-PS-T-MH-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.

LIQUID LEVEL GAUGES

5700 BULK TANK GAUGE WITH 1/2" CONNECTIONS



17000 BULK TANK GAUGE WITH 1" CONNECTIONS



The 5700 and 17000 series gauges are armored liquid level gauges with NPT or flanged connections at each end. These gauges provide a visual means for checking the contents of a bulk tank. They can also be used to set and monitor the injection rate of a chemical metering pump. The gauges operate in low to medium pressure applications up to 500 psig.



5700 Bulk Tank Gauge with Optional Flange Connection

5700 AND 17000 SERIES GAUGE SPECIFICATIONS

The armored design of the gauge offers maximum protection for the sight tube from mechanical impact. Three sides of the gauge are protected with a metal frame, while the face of the gauge is protected with an impact resistant polycarbonate shield. This shield can be custom calibrated to read tank volume or any other desired calibration. Please see page 12 for standard shield calibration options. A wide variety of wetted materials and seals are available to ensure compatibility with whatever fluid is being used. For mounting purposes, a mounting lug is welded to the back of the gauge.

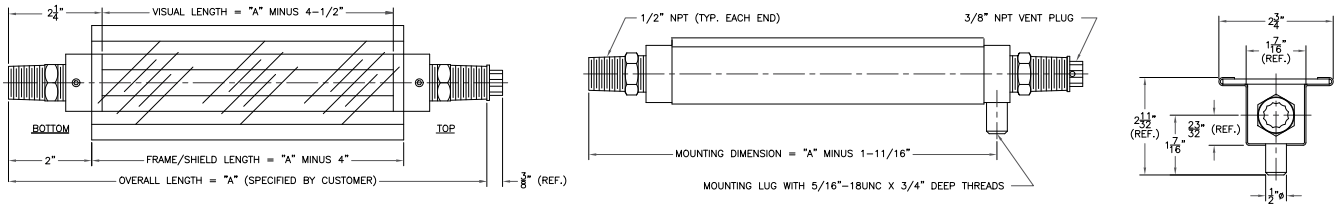
The 5700 series has 1/2" MNPT x 3/8" FNPT threaded process connections. 1/2" to 2" flanged process connections are also available. The standard sight tube is 5/8" O.D. glass. Other sight tube options are also available upon request.

The 17000 gauge is fitted with 1" MNPT process connections (flanged process connections are also available). The standard sight tube is 1" O.D. glass, which makes it ideal for viscous liquids.

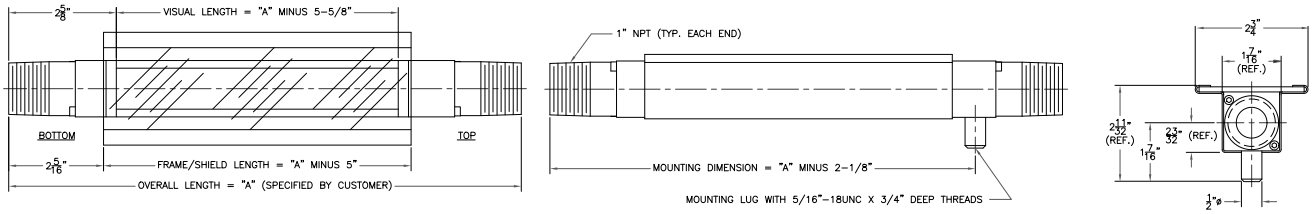
SPECIAL GAUGE APPLICATION - CHEMICAL INJECTION SYSTEMS

5700 and 17000 gauges are used to calibrate chemical injection systems. The injection rate of a chemical metering pump is checked by closing a valve between the gauge and the chemical storage tank and observing the change in fluid height in one minute. Using the rate scale on the front of the polycarbonate shield, count the number of marks the fluid level passed during the one minute test period. This will give you the actual chemical pump rate. If the rate is not the one desired, make an adjustment to the chemical pump feed rate, and conduct as many one minute tests as is necessary to set the chemical pump to the rate desired. If a higher pump rate is required, the test period can be shortened to 30 seconds or 15 seconds.

5700 BULK TANK GAUGE



17000 BULK TANK GAUGE



ORDERING SYSTEM
5700 & 17000 Series Level Gauges

REQUESTED BY: _____ COMPANY: _____

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

PHONE: _____ FAX: _____ EMAIL : _____

		—	—	—
Gauge Style	**Flange Option**	**Overall Length of Gauge (Inches)**	**Material of Construction**	**Seal Material**
5700=Gauge w/ 1/2" MNPT Connections 17000=Gauge w/ 1" MNPT Connections	N=None (Leave Blank) FL50=1/2" Flange FL75=3/4" Flange FL1.0=1" Flange FL1.5=1 1/2" Flange FL2.0=2" Flange		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) • **For Flanged Models, Select Options C, A, PC, or PS only**	V=Fluorocarbon A=Aflas B=Buna-N T=(5700) PTFE (17000) FEP Encapsulated Silicone E=Ethylene Propylene

	—	——	—	—	
Shield Options*	**Sight Tube Options****	**Maximum Working Pressure (PSIG)**	**Maximum Operating Temperature (°F)**	**Steam**
L=Clear Polycarbonate H=Height Scale RH=Rate Height Scale MH=Metric Height Scale MRH=Metric Rate Height Scale M=Expanded Metal	GS=5/8" O.D. Glass (5700) 1" O.D. Glass (17000) RL=5/8" O.D. Redline Glass (5700) 1" O.D.Redline Glass (17000)			S=Steam Application NS=Non-Steam Application

• Example Order Number: 5700-52-C-V-H-GS-ATM-200-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



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 Polycarbonate 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 Polycarbonate 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:

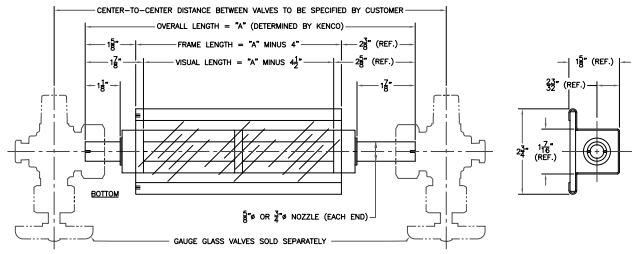
The KENCO Environmental Protection Gauge protects the glass with a 360° UV stabilized polycarbonate tube. This gauge is ideal for an outdoor environment where the gauge is exposed to the elements (i.e. hail, wind, etc.). The gauge is priced to be an economic alternative to a tubular gauge glass shrouded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

FEATURES:

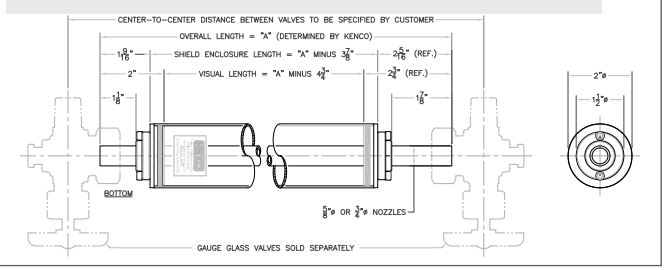
- Replaces unprotected tubular gauge glass.
- 360° visibility of fluid level.
- Red-line glass is standard for easy viewing of fluid level.
- The tubular valve packing nut tightens around 316 S.S. nozzles, not glass!
- Outer tube is high impact UV stabilized polycarbonate tubing.
- 316 S.S. nozzles available in a 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).



SAFEGUARD SERIES LEVEL GAUGE



EPG SERIES LEVEL GAUGE



ORDERING SYSTEM

REQUESTED BY: _____ COMPANY: _____

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

PHONE: _____ FAX: _____ EMAIL : _____

SAFEGUARD SERIES LEVEL GAUGE

Gauge Style
62=5/8" O.D. Tubular Connection
75=3/4" O.D. Tubular Connection

Center to Center Dimension (inches)

Material of Construction
PC= PVC Wetted Parts w/ Carbon Steel Frame
PS= PVC Wetted Parts w/ Stainless Steel Frame
C=Zinc Plated Carbon Steel
A=Stainless Steel
W=316 Stainless Steel Wetted Parts w/ Carbon Steel Frame

Seal Material
V=Fluorocarbon
A=Aflas
B=Buna-N
T=PTFE
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 (STANDARD)
RL=5/8" O.D. Redline Glass

Maximum Working Pressure (PSIG)

Maximum Operating Temperature (°F)

Steam
S=Steam Application
NS=Non-Steam Application

Valve Manufacturer
KENCO
Other (Please Specify)

Valve Manufacturers Part #
KTV
Other (Please Specify)

To Be Determined By KENCO

Overall Length (Inches)

EPG SERIES LEVEL GAUGE

Gauge Style
EPG-5/8=5/8" O.D. Tubular Connection
EPG-3/4=3/4" O.D. Tubular Connection

Center to Center Dimension (inches)

Seal Material
V=Fluorocarbon
A=Aflas
B=Buna-N
T=PTFE
E=Ethylene Propylene

Sight Tube Options
RL
RL=5/8" O.D. Redline Glass

Maximum Working Pressure (PSIG)

Maximum Operating Temperature (°F)

Steam
S=Steam Application
NS=Non-Steam Application

Valve Manufacturer
KENCO
Other (Please Specify)

Valve Manufacturers Part #
KTV
Other (Please Specify)

To Be Determined By KENCO

Overall Length (Inches)

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

TUBULAR GLASS GAUGE VALVES (GAUGE COCKS)

KTV TUBULAR VALVES FOR LIQUID LEVEL GAUGES



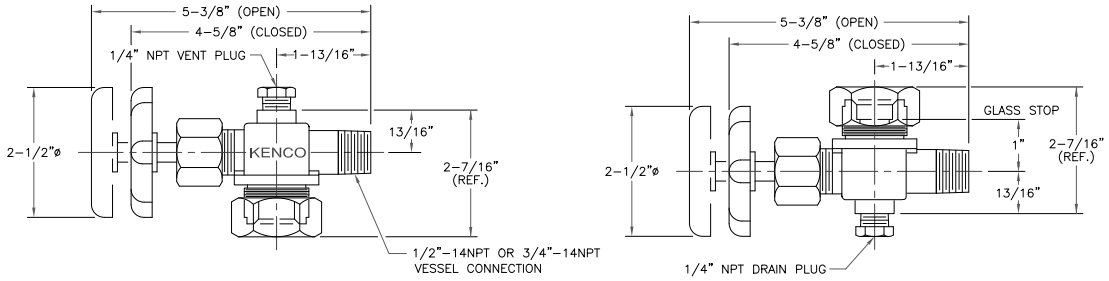
APPLICATION:

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 for 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
- Inline vent and drain connection for easy glass cleaning
- 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	Process Connections		Valve Body Material		Seal Material		Maximum Working Pressure (PSIG)

Process Connections
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# w/ 3/4" O.D. Gauge Glass Connection
75FL=3/4" 150# w/ 3/4" O.D. Gauge Glass Connection
1.0FL=1" 150# w/ 3/4" O.D. Gauge Glass Connection
1.5FL=1 1/2" 150# w/ 3/4" O.D. Gauge Glass Connection
2.0FL=2" 150# w/ 3/4" O.D. Gauge Glass Connection
.

Valve Body Material
SS=316 Stainless Steel
CS= Carbon Steel

Seal Material
V=Fluorocarbon
B=Buna-N
E=Ethylene Propylene
T=PTFE Encapsulated Silicone

	—	
Maximum Operating Temperature (°F)		Steam

Steam
S=Steam Application
NS=Non-Steam Application

• Example Order Number: KTV 50-SS-B-100-AMB-NS

4400 SERIES LEVEL GAUGE



APPLICATION:

The KENCO close-mount level gauge is ideally suited for applications in which the level gauge must be mounted with a minimum of protrusion from the tank. Typical applications include offshore or corrosive atmospheres, packaged hydraulic equipment, steel mill pumps, surge tanks, radiator fluid levels.

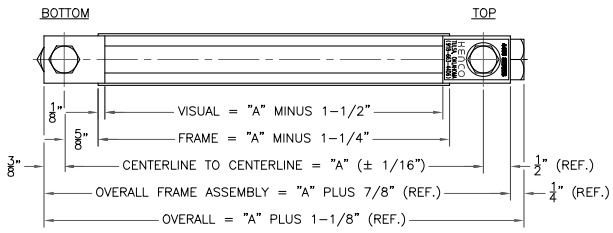
The design of these gauges affords easy installation. Simply install the male thread adapter into the tank connection and then slide the gauge housing over these adapters and bolt gauge into place. The glass is protected from breakage by the gauge housing.

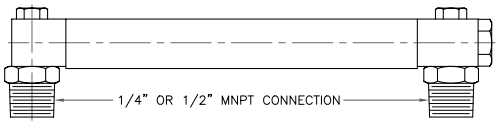
FEATURES

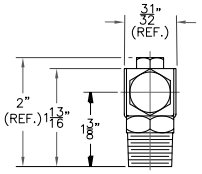
- Redline glass for easy observation of fluid level
- Metal frame on three sides protects glass
- Large ports provide quick level response
- Easy installation-no pipe unions and/or threaded nipples required
- 1/4" or 1/2" connections mount directly into FNPT process connection



4400 SERIES LEVEL GAUGE







ORDERING SYSTEM
4400 Series Level Gauge

REQUESTED BY: _____ COMPANY: _____

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

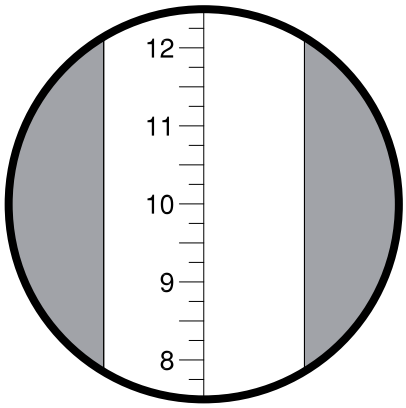
PHONE: _____ FAX: _____ EMAIL : _____

Process Connections 44M25=1/4" MNPT 44M50=1/2" MNPT	**Center to Center Dimension (inches)**	**Material of Construction** B=Nickel Plated Brass S= Stainless Steel	**Seal Material** V=Fluorocarbon A=Aflas B=Buna-N E=Ethylene Propylene
RL			**NS**
Sight Tube Options RL=1/2" O.D. Redline Glass	**Maximum Working Pressure (PSIG)**	**Maximum Operating Temperature (°F)**	**Steam** NS=Non-Steam Application

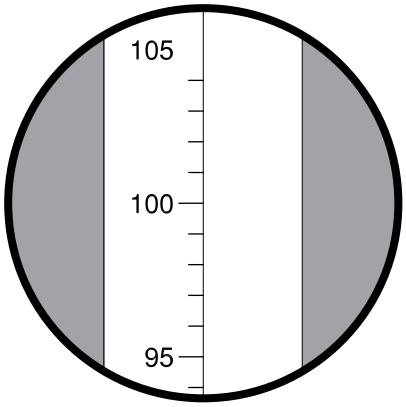
- Example Order Number: 44M50-22-S-B-RL-ATM-150-NS

LIQUID LEVEL GAUGES

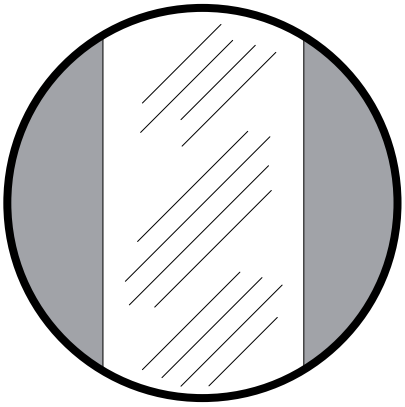
POLYCARBONATE SHIELD OPTIONS



H
The height scale is marked in 1/4" increments and labeled every inch.

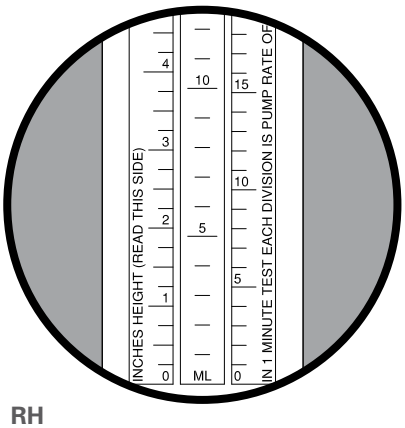


MH
The metric height scale is marked every 1 cm and labeled every 5 cm.

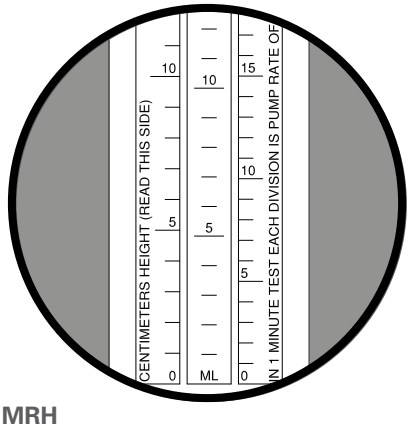


L
Clear Shield

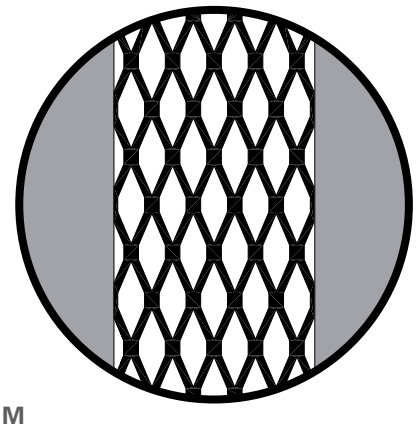
H, MH, and L are also available in UV filtered acrylic. Add -UV to the selected shield style for this option. Example: H-UV is a UV filtered acrylic height scale.



RH
The rate/height shield is used for checking the pump rate of a chemical pump. It is calibrated in Quarts/24 hours, ML/min, and has a height scale marked in 1/4" increments.



MRH
The metric rate/height shield is used for checking the pump rate of a chemical pump. It is calibrated in Liters/24 hours and ML/Min. The height scale is marked in 1 CM increments.



M
The expanded metal shield is made from flattened expanded metal and is standardly available in electroplated carbon steel. Specify 304 stainless steel when required.

CUSTOM SCALES

KENCO can provide custom scales to meet your needs. The polycarbonate shield material is engraved and paint-filled. If you are needing scales indicating tank volume or other scale calibrations, please consult the factory.

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