VERSATILITY & DURABILITY

ARMORED TUBULAR GLASS GAUGES & VALVES FOR PROCESS LEVEL MEASUREMENT BY KENCO

ENGINEERED LIQUID LEVEL SOLUTIONS

ISO 9001:2008 CERTIFIED
LIQUID LEVEL GAUGES
K9900 LEVEL GAUGE WITH INTEGRAL VALVES AND MISALIGNMENT UNIONS
(U.S. PATENT NUMBER 6,857,315 B1)

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 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 upon request (Refer to Page 12)
• Armored frame and polycarbonate shield protect operator in case of accident
• K9900 is ABS certified for marine applications
• Minimum loss of visual indication
**Seal Material**

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

*(Other Materials Available upon Request)*

**ORDERING GUIDE**

**K9900 Series Bulk Tank Gauge**

**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 Connection(s)**

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

*(Other Flange Sizes/Ratings Available upon Request)*

**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=Aflas
- B=Buna-N
- T=FEP Encapsulated Silicone
- E=Ethylene Propylene

*(Other Materials Available upon Request)*

**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

*(Other Materials Available upon Request)*

**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.**
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 and minimal loss of visual indication. The Gauge is fitted with inline 1/4” FNPT vent and drain connections for routine sight glass maintenance.

The centerline dimensional tolerance is ±1/16”. This assures that the gauge will fit the mounting connections 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 an expanded metal or impact resistant polycarbonate shield. The polycarbonate 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 316 stainless steel frame available upon request. 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 SERIES LEVEL GAUGE WITH THREADED PROCESS CONNECTIONS**

**8800 SERIES LEVEL GAUGE WITH FLANGED PROCESS CONNECTIONS**

- Drawings above represent models with metal process connections.

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**ORDERING GUIDE**

**8800 Series Level Gauge**

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

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**Gauge Style**

- 88 = Gauge with 90° Connections

**Process Connections**

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

(Other Flange Sizes/Ratings Available upon Request)

**Center-to-Center Dimension (inches)**

- 88

**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)

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**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

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**Sight Tube Options**

- GS = 5/8” O.D. Glass
- RL = 5/8” O.D. Redline Glass

(Other Materials Available upon Request)

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**Maximum Working Pressure (PSIG)**

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**Maximum Operating Temperature (°F)**

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**Steam***

- S = Steam Application
- NS = Non-Steam Application

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* See page 12 for shield descriptions.

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

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* Example Order Number: 88M50-68-PSTMH-GS-105-100-NS

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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 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 expanded metal or impact resistant polycarbonate shield. The polycarbonate 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 flange sizes/ratings and 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. Other flange sizes/ratings and sight tube options are also available upon request.

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 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.

* See page 12 for rate scale details.
• Drawings above represent models with metal process connections.

**ORDERING GUIDE**
5700 & 17000 Series Level Gauges

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

Gauge Style
5700= Gauge w/ 1/2" MNPT Connections
17000= Gauge w/ 1" MNPT Connections

Flange Option
N=None (Leave Blank)
FL50= 1/2" 150# R.F. Flange
FL75= 3/4" 150# R.F. Flange
FL10= 1" 150# R.F. Flange
FL15= 1-1/2" 150# R.F. Flange
FL20= 2" 150# R.F. Flange
(Other Flange Sizes/Ratings Available upon Request)

Overall Length of Gauge (Inches)

Material of Construction
C= Zinc Plated Carbon Steel
A= Stainless Steel
W= All Wetted Parts 316 Stainless Steel w/Zinc Plated 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

Shield Options*
L= Clear Polycarbonate
H= Height Scale
RH= Rate Height Scale
MRH= Metric Rate Height Scale
M= Expanded Metal Guard

Sight Tube Options**
G5= 5/8" O.D. Glass (5700)
G1= 1" O.D. Glass (5700)

Maximum Working Pressure (PSIG)

Steel
S= Steam Application
NS= Non-Steam Application

* See page 12 for shield descriptions.
** Based on application data provided, KENCO will select the appropriate sight tube material, i.e. high pressure glass.

• Example Order Number: 5700-S2-CVH-GS-ATM-200-NS
LIQUID LEVEL GAUGES

SAFEGUARD SERIES LEVEL GAUGE
(SHIELDED TUBULAR LIQUID LEVEL GAUGE, U.S. PATENT NUMBER 4,693,117)

APPLICATIONS:
The Safeguard liquid level gauge replaces unprotected tubular glass that is installed 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 20 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 5,442,959)

APPLICATIONS:
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 up 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.
- 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).
- Maximum temperature: 250°F
- Maximum overall length is 52-3/4”. For longer lengths, use Safeguard Level Gauge.
## SAFEGUARD Series Level Gauge

**Gauge Style**
- 62=5/8" O.D. Tubular Connection
- 7S=3/4" O.D. Tubular Connection

**Center-to-Center Distance Between Valves (Inches)**

**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)

**Seal Material**
- V=Fluorocarbon
- A=Aflas
- B=Buna-N
- T=FEP Encapsulated Silicone
- E=Ethylene Propylene
- Other (Please Specify upon Request)

**Maximum Operating Temperature (°F)**

**Overall Length (Inches)**

**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

**Steam**
- S=Steam Application
- NS=Non-Steam Application

**Valve Manufacturer**
- KENCO
- Other (Please Specify)

**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 Distance Between Valves (Inches)**

**Seal Material**
- V=Fluorocarbon
- A=Aflas
- B=Buna-N
- T=FEP Encapsulated Silicone
- E=Ethylene Propylene
- Other (Other Materials Available upon Request)

**Maximum Working Pressure (PSIG)**

**Overall Length (Inches)**

**Sight Tube Options**
- GS=5/8" O.D. Glass (Standard)
- RL=5/8" O.D. Redline Glass
- Other (Other Materials Available upon Request)

**Steam**
- S=Steam Application
- NS=Non-Steam Application

**Valve Manufacturer**
- KENCO
- Other (Please Specify)

**Valve Manufacturer Part #**
- KTV
- Other (Please Specify)

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

** For shield options see page 12 for reference.
TUBULAR GLASS GAUGE VALVES (GAUGE COCKS)

KTV TUBULAR VALVES FOR LIQUID LEVEL GAUGES

FEATURES:

• Available in zinc plated carbon steel or 316 stainless steel (wetted)
• 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
• 1/4” FNPT Vent/Drain port with plug
• Flanged vessel connections available
• Ball check shut off will protect tank inventory
• Straight pattern design
• Braided PTFE stem packing
• All valves are supplied with 316 S.S. valve stem, ball check and valve stem 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

APPLICATIONS:

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.

KTV TUBULAR VALVES

ORDERING GUIDE
KTV Tubular Valves

REQUESTED BY: ___________________________ COMPANY: ___________________________
ADDRESS: ___________________________ CITY: ___________________________ STATE: __________ ZIP: ___
PHONE: ___________________________ FAX: ___________________________ EMAIL: ___________________________

Valve Style

Valve Body Material

SS=316 Stainless Steel
CS=Zinc Plated Carbon Steel

Seal Material

V=Fluorocarbon
A=Aflas
B=Buna-N
T=FEP Encapsulated Silicone
E=Ethylene Propylene
(Other Materials Available upon Request)

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# 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
50FL300= 1/2” 300# R.F. Flange and 3/4” O.D. Gauge Glass Connection
75FL300= 3/4” 300# 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
(Other Flange Sizes/Ratings Available upon Request)

Maximum Working Pressure (PSIG)

Maximum Operating Temperature (°F)

Steam
S=Steam Application
NS=Non-Steam Application

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

4400 SERIES LEVEL GAUGE
CLOSE-MOUNT LEVEL GAUGE

APPLICATIONS:
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, panel boards, surge tanks, radiator fluid levels.

FEATURES:
• Redline glass for easy observation of fluid level
• Metal frame on three sides protects glass
• Easy installation—no pipe unions and/or threaded nipples required
• 1/4” or 1/2” connections mount directly into FNPT process connection
• Maximum Pressure: 135 PSIG
• Maximum length: 60”

4400 SERIES LEVEL GAUGE

ORDERING GUIDE
4400 Series Level Gauge

REQUESTED BY: __________________________________ COMPANY: __________________________________

ADDRESS: __________________________________ CITY: __________________________________ STATE: ______ ZIP: ______

PHONE: ______________________ FAX: ______________________ EMAIL: ______________________

Gauge Style
44M25=1/4” MNPT
44M50=1/2” MNPT

Center-to-Center Dimension (inches)

Material of Construction
B=Nickel Plated Brass
S=316 Stainless Steel

Seal Material
V=Fluorocarbon
A=Aflas
B=Buna-N
E=Ethylene Propylene
(Other Materials Available upon Request)

Sight Tube Option*
HPRL=1/2” O.D. Redline Glass
(Other materials available upon request)

Maximum Working Pressure (PSIG)

Maximum Operating Temperature (°F)

Steam
NS=Non-Steam Application

Example Order Number: 44M50-22-S-HPRL-ATM-150-NS
* Based on Application data provided, Kenco will select the appropriate sight tube material
LIQUID LEVEL GAUGES

SHIELD AND GUARD 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

Sight tube shields are made from clear polycarbonate. H, MH, L and custom marked scales are also available in UV filtered acrylic. Add UV to the selected shield style for this option. Example: HUV 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. 17000 shield is in Gallons/day.

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, and has a height scale marked in 1 CM increments.

M
The expanded metal guard 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 shield material is engraved and paint-filled. If you require scales indicating tank volume or other scale calibrations, please consult the factory.