THE PLATINUM LEVEL GAUGE

Magnetic Liquid Level Gauges and Controls

Patented Wide-Flag™ Solid Design
Magnet -350° / 1100° F rating

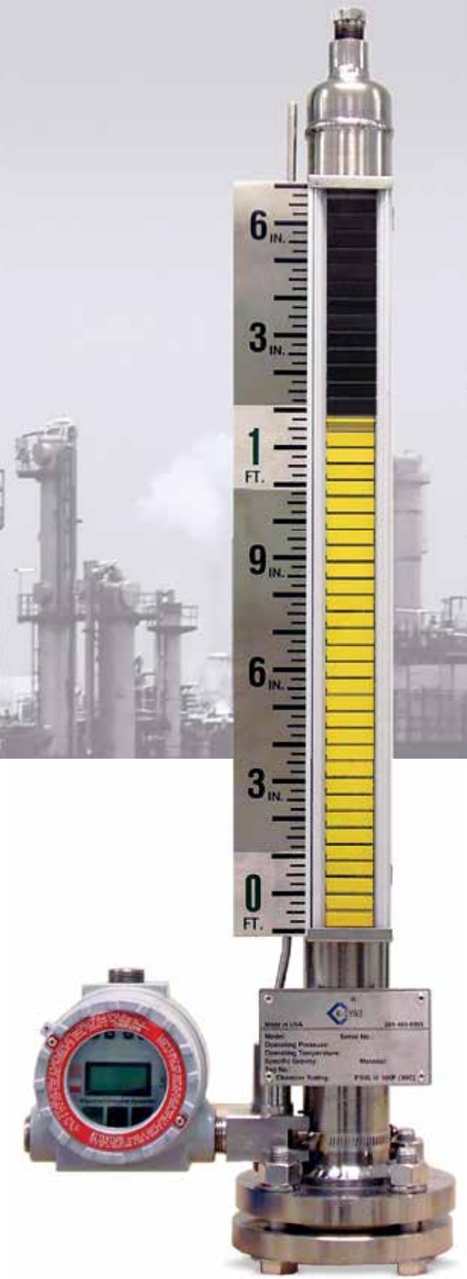
Replaces Sightglasses

Standard 2-4 week delivery
Expedited delivery available

Constructed to meet ANSI/ASME
codes B31.1/B31.3 Min. Sch 40

No Pressurized Floats

All Welds are GTAW/TIG
No MIG or T-Drilling



K-DYNE

702 South Persimmon, Suite 1C
Tomball, TX 77375
Tel 281.397.7099
Fax 281.397.749
k-dyne.com

K-Dyne

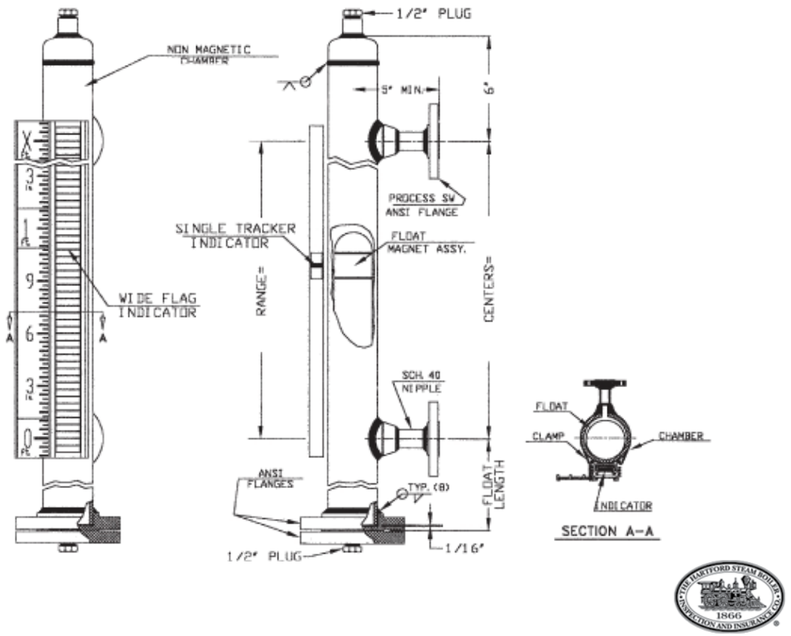
K-Dyne is a proven leader in liquid level measurement technology. K-Dyne's level gauges are the safest and most economical ways to measure and control your level requirements. They can be installed on almost any shape, size or type of vessel in the industry. In applications of extreme pressure, temperature, vibration and highly corrosive or hazardous material, K-Dyne's level gauges will perform where others fail.

Principles of Operation

The Chamber is constructed of non-magnetic materials, and process connections to mate with those of the tank, vessel or other equipment where the level is to be measured.

The Float is engineered and located inside the Chamber. It is sized and weighed to the specific gravity of the process fluid to be measured. The Float contains a 360° Magnetic Assembly which generates a strong uniform magnetic circuit. The magnetic Flux Lines generated by the Float interlocks with the Indicator. The hermetically sealed Indicator, the Wide Flag™ or Wide Tracker™ Style, contains its own magnetic assemblies which interlock with the float through the Chamber, providing a strong and reliable design.

As the Float moves with the changes in the liquid level, the magnetic attraction between the Indicator and Float will ensure that the Indicator will track the position of the float exactly and the liquid level is measured precisely.



Indicators

Wide Tracker™

Wide Flag™ (Patented)

Wide Tracker™

- Extra Large Rectangular Indicator
- 1.40" Wide X 1.5 Long
- Bright Yellow (other colors available)
- Dual Magnetic Coupling

Wide Flag™

- Easy to read 1.40" Wide-Flag (Visible from 200+ft)
- Patented solid one piece ceramic magnetic flag
- 180 degree rotation
- Temperatures from -350°F to 1100°F
- High contrast Yellow (liquid) & Black (vapor)
- Other color combinations available

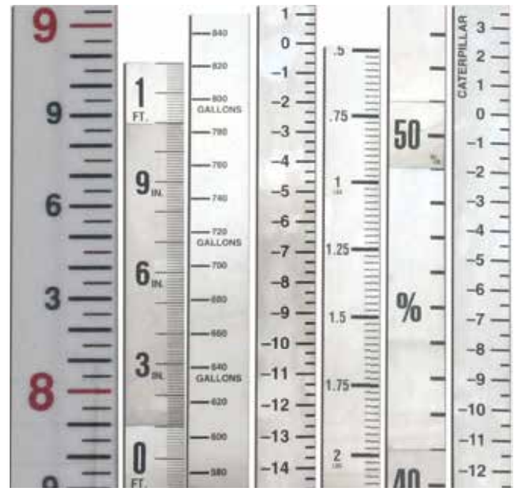
Available Enclosures:
Anodized Aluminum or 316 Stainless Steel

Scales

- Scale can be customized to any increments (FT/IN, Gallons, Percent, metric, etc.)
- All scales are photo etched into Stainless Steel - No rusting, fading or stickers falling off
- Large, easy to read markings that allow measurement to be taken from a safe distance

Scale available in:

- Feet/Inch Standard
- Metric
- % Scale
- th's Scale
- Wide Acrylic Scale
- Gallon Scale
- +/- Scale
- Inch only Scale



Point Level Switches

MGS-200EX & MGS-200EX/2

Type	Electrical
Volts	150 VAC / VDC
Current	1.0 AMPS
Power	25 Watts
Contacts	SPDT or DPDT
Deadband	½ inch
MAWT	-40°F to +800°F
Enclosure	NEMA 4X
Connection	¾" FNPT

MGS-700EX & MGS-700EX/2

Type	Electrical
Volts	125/250 VAC
Current	10.0 Amps
Power	2500 Watts
Contacts	SPDT or DPDT
Deadband	½ inch
MAWT	-40°F to +600°F
Enclosure	NEMA 4X
Connection	¾" FNPT

MGS-500EX & MGS-500EX/2

Type	Electrical
Volts	500 VAC/VDC
Current	3.0 AMPS
Power	100 Watts
Contacts	SPDT or DPDT
Deadband	½ inch
MAWT	-40°F to +600°F
Enclosure	NEMA 4X
Connection	¾" FNPT

MGS-700EX & MGS-700EX/2

Type	Electrical
Volts	125/250 VAC
Current	15.0 Amps
Power	3750 Watts
Contacts	SPDT or DPDT
Deadband	½ inch
MAWT	-40°F to +600°F
Enclosure	NEMA 4X
Connection	¾" FNPT

Stainless Steel Enclosures Available For All Switches

ELECTRICAL AREA CLASSIFICATION: CLASS I, DIVISION I, GROUPS B, C, D

MGS-100: Non-bleed Pneumatic Switch

Type	Non-Bleed Pneumatic
Supply Pressure	30 – 200 PSIG
Deadband	½ inch
MAWT	0°F to 200°F
Enclosure	316 SS
Connection	¼" FNPT

Floats

» All floats are engineered to the specific operating conditions of each application
» Shell is constructed of stainless steel, titanium, hasteloy, monel, CPVC, PVDF (Kynar), or any other non-magnetic material
» Magnetic circuit is made of a series of Alnico magnets to provide a light yet effective connection
» We can handle the highest pressures in the industry with NO oversized, pressurized or vented floats. Pressurized floats can be a safety concern and can leak over time
» K-Dyne uses solid engineering to conquer the demands of high pressures and low gravities.

High Pressure Interface Float with Field Adjustable Weight

Standard Stainless Steel Float

CPVC Float

Kynar Float

Titanium High Pressure Float

Coated Float for Corrosive Process

The Carbon Fiber Float® (Patent Pending)

A Superior Magnetic Circuit

When designing the magnetic circuit between the float and indicator there are many considerations other than just how strong the magnets are in the float. K-Dyne level gauges have undergone extensive testing to produce a rigid and high performance design with an unique construction the indication performs under the most demanding conditions — high/low temperatures, vibrations, schedule 160 chambers, and more. Our patented solid magnet Wide Flag™ design not only provides highly visible indication, but provides a powerful connection with the float. The reliability and repeatability of the K-Dyne float and indicator combination is unmatched.

To construct a K-Dyne Liquid Level Gauge

Standard Specifications
- Non-Magnetic Chamber Material
- All Flanges, Fittings & Pipe Meet ASME/ANSI Standards
- Fabricated/Welded to B31.1/B31.3 Code

Float Chamber
- 2"-3" pipe W/RF Flanges - Sch 40
- ½" FNPT vent & drain connections
- All flanges & fittings rated for process conditions
- Connections: 1/2" thru 8" plus
- Pressure ratings up to 5000 PSIG
- Temperature Rating: -350°F to +1100°F
- Specific gravity range: .28 and up
- Lengths from 4.0" to 50 feet

Scale
- Feet & Inches, ¼" divisions
- Photo etched and backfilled on stainless steel
- Metric, Percentage or Volumetric Available
- Optional 3½" Acrylic scales

Indicator
- Bright colored
- Can be seen from 200 ft or more
- 1.4" wide
- Hermetically Sealed

Material
- 4S - 304/304L SS
- 4C - 304 SS / CS
- 6S - 316/316L SS
- 6C - 316 SS / CS
- 2S - 321 SS
- 4T - Non-Stick Coating
- 4H - Halar Coated 304 SS
- NS - Non-Stick Coating
- AL - Aluminum
- A2 - Alloy 20
- MO - Monel
- TT - Titanium
- HB - Hastelloy B
- HC - Hastelloy C
- ZR - Hastelloy C
- CP - CPVC
- PV - PVC
- KY - Kynar (PVDF)
- PP - Polypropylene
- CM - Other material

HOW TO ORDER

KD										
1	2	3	4	5	6	7	8	9	10	11
	Material	Style	Process Connection Size	Flange Rating	Specific Gravity	Max Working Pressure	Max Working Temp	Measurement Length	Indication Type	Options

Flange Rating:
01 - 150#
03 - 300#
06 - 600#
09 - 900#
15 - 1500#
25 - 2500#
50 - 5000#

Indication Type:
WF - Wide Flag
SWF - SS Wide Flag
WT - Wide Tracker
SWT - Single Wide Tracker

Example: P/N MG - 6C - A-1.0" - 15 - .40 - 1200 - 500°F - 38.0" - WF-WN-HB

Description

1. K-Dyne
2. Chamber Material: 316SS with Carbon Steel Flanges and Fittings
3. Style: A
4. Process Connection: 1.0" Raised Face Flange
5. Flange Rating: 1500#
6. Specific Gravity: .40
7. Max Working Pressure: 1200psig.
8. Max Working Temperature: 500°Fb
9. Process Connection C/L: 38.0" Measurement Length: 38.0
10. Wide Flag Indication
11. Option: Weld Neck Flanges Insulation Blanket

OPTIONS

Chambers
- WN - Weld Neck Flanges
- LJ - Lap Joint Flanges
- RJ - Ring Joint Flanges
- BW - All Butt Weld Construction
- NM - NACE MR0175/MRO103

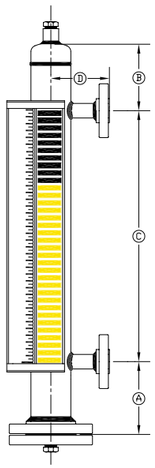
Temperature Control
CI - Low Temp. Cryogenic Insulation
IB - High Temp. Insulation Blanket
EH - Electrical Heat Tracing
FP - Freeze Protection
ST - Steam Tracing
FE - Frost Extension

Testing
HY - Hydrostatic
NDE - 100% Non-destructive Testing (Die Penetration, X-Ray)
PMI - Positive Material Identification

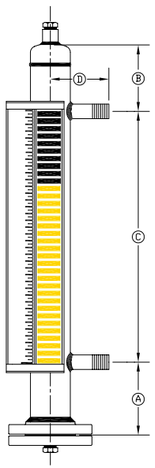
Valves
GV - Gate Valves
VD - Vent & Drain Valves

Indicator & Scale
WF - Wide Flag™
WT - Wide Tracker™
MS - Metric Scale
PS - Percent Scale
VS - Volumetric Scale
AS - 3 ½" Acrylic Scale
FE - Non Frost Extension
DI - Dual Indication
IF - Interface Indication
AR - Level Arrow Indicators
IG - Indicator Guard
HDC - Heavy Duty Mounting Clamps

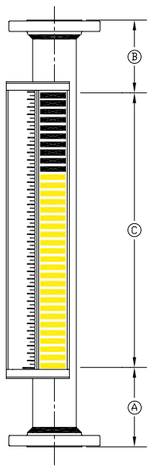
CHAMBER STYLES



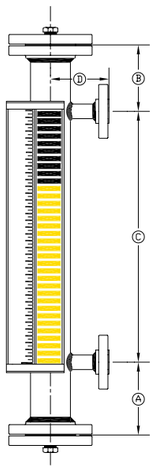
Style A



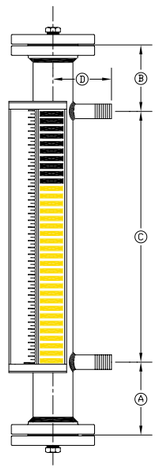
Style B



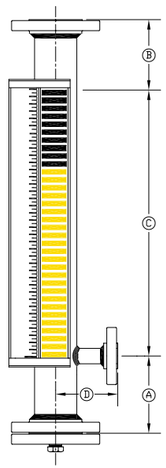
Style C



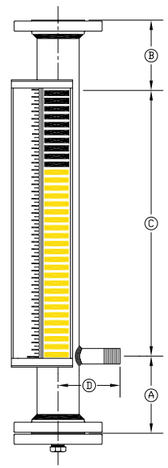
Style D



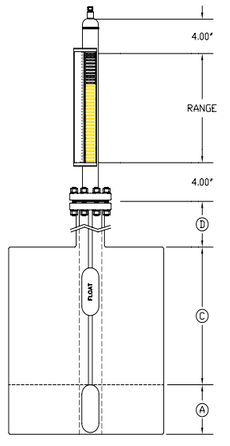
Style E



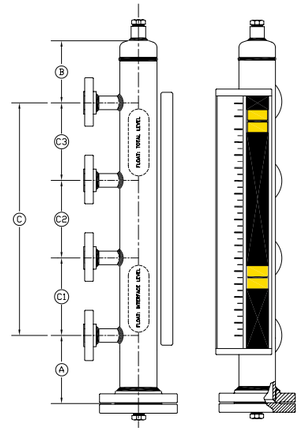
Style F



Style G



Style H



Style X
(Other configurations)

**Typical dimensions A = 12.0" B = 6.0" D = 6.0" C = Specify *Dimensions may vary with process conditions/applications.*

Transmitters - Non Invasive

Magnetostrictive Level Transmitter - MGT-2523

K-Dyne's MGT-2523 series level transmitter is the latest development in magnetostrictive level sensing technology that is designed exclusively for magnetic level gauges. The MGT-2523 contains a low profile waveguide that is mounted away from the level gauge chamber. This durable slim design isolates the dual sealed waveguide from excessive vibration and temperature. From enhanced sensor technology, the output signal is fast, stable and extremely accurate.

Standard Features

- Two wire, loop powered, 24 VDC nominal
- 4-20 mA, inches/metric and/or percent output signal
- Scrolling LCD digital display in 4-20 mA, in/cm or percent
- Local and remote detection for total or interface level elevations
- HART protocol field communication
- Local programmability allows for quick & easy setup
- No recalibration necessary, set it and forget it
- Non wetted, dual sealed low profile waveguide design, 316 SS
- Isolated from excessive thermal & vibration effects
- Top, bottom or remote transmitter head mountings
- Accurate to within 0.01% of total span selected
- Durable design with a strong, noise free signal output
- State of the art sensor and transmitter electronics
- Unique transmitter puck design
- Simple retrofit to most magnetic level gauge chambers
- Explosion proof housing, NEMA Type 4X
- Class I, Division 1, Groups B, C, D
- Class II, Division 1, Groups E, F, G
- Class III

HART® FIELD COMMUNICATIONS PROTOCOL · FM APPROVED FOR IOGLER · PACTware™ · A3 · CSA · ISA

Typical Customizations

Sanitary K-Dyne gauge (Tri-colored flags)

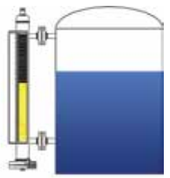
Drum Level Indicator

Meets ASME Boiler Code (PG60) for water level indicators on Boiler Drum

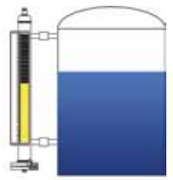
High Temperature Insulation shown with Red/White WF Indicator option

Cryogenic Insulation with MGT-2523

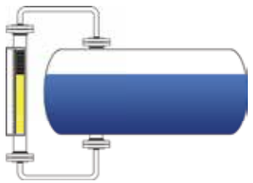
Typical Installations



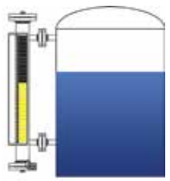
Style A



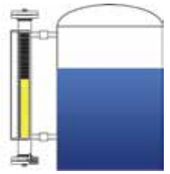
Style B



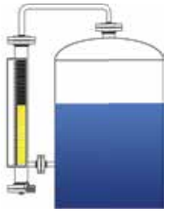
Style C



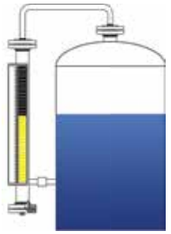
Style D



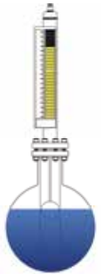
Style E



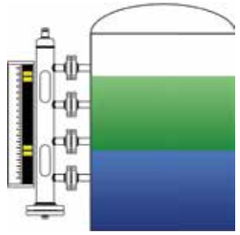
Style F



Style G



Style H



Style X

Applications

- Acetic Acid
- Ammonia
- Asphalt Settler
- Benzene
- Blow case
- Boiler Steam Drum
- Butane
- Caustics
- Cooling Towers
- Deionized Water
- Dow Therm
- Drip Pot
- Feedwater Heaters
- Flare Drums
- Freon
- Glycol
- Hydraulic Oil
- Hydrazine
- Hydrochloric Acid
- Hydrofluoric Acid
- Hydrogen Sulfide
- Interface (ie: oil/water)
- Jet Fuel
- LPG
- Liquid Carbon Dioxide
- Liquid Ethylene
- Molten Sulfur
- Phosgene
- Propylene
- Propane
- Seal Oil Pots
- Slop Oil
- Sour Oil
- Sump Tank
- Underground Storage

Other Products

L80 Electric Switches

L80 Pneumatic

R11 Manual Reset Relay

L80 Electric Vertical

P40 Pressure Switch