

Series 1200A Magnetic Level Gauges, Transmitters and Switches

A Superior Alternative

Accurate and dependable in harsh applications



Now with Standard Schedule 40 material and brightly colored flippers. Series 1200A magnetic gauges, transmitters and switches provide accurate liquid level measurement, communication and control for storage tanks, separators and other pressure vessels.

Series 1200A gauges feature a robust, low-maintenance design that is ideal for high-temperature, high-pressure and corrosive applications. Series 1210 transmitters are direct-insertion magnetostrictive transmitters for non-invasive and/or redundant level control. Norriseal also offers non-invasive switches that provide alarm and control actions without additional cutouts in the vessel.

Gauge Description

Norriseal magnetic level gauges consist of a float column with process connections matching those of the storage tank, separator or other pressure vessel where level is to be measured. Process connections may be side couplings, flanges or top and bottom flanges as illustrated on Page 2.

The magnetic float rises and falls within the chamber as the process level changes. Floats are custom manufactured and tested to meet process condition requirements. Contained in the float is a 360 degree magnet assembly comprised of a series of vertical magnets. A wide range of float materials are available to meet virtually any temperature, pressure and material compatibility requirement.

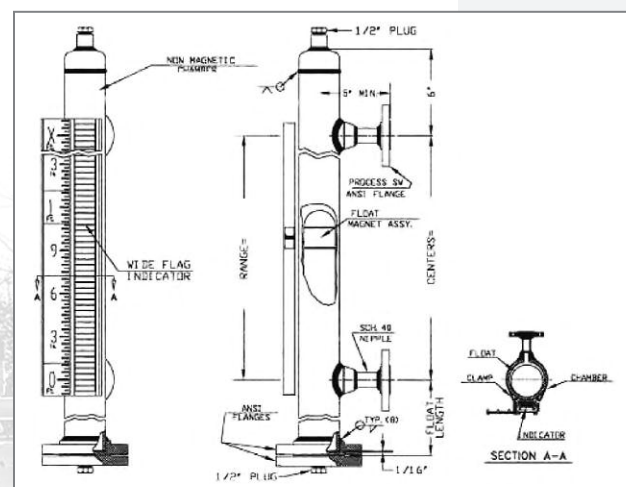
The zippered-type indicator (series of rotating flags) visibility is heightened because all flags are rotated up to the fluid level point.

Gauge Features

- Replaces problematic sight glasses
- Visual level indication from 150+ feet
- No process liquid in contact with indicator glass
- Ideal for high temperature, pressure and corrosive applications
- Manufactured to meet boiler specifications (ASME B31.1/B31.3)
- Magnetostrictive options for non-invasive and/or redundant level control
- Software options: Registered HART DD to revision 5/6 – IEC610804-2, AMS Aware and Fieldbus to ITK4.6

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PRODUCTION SOLUTIONS
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*Engineered
Performance*

Gauge Specifications

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
- 1/2" 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:

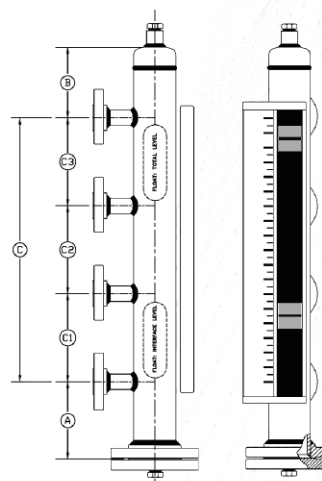
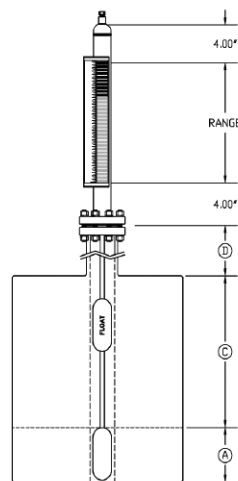
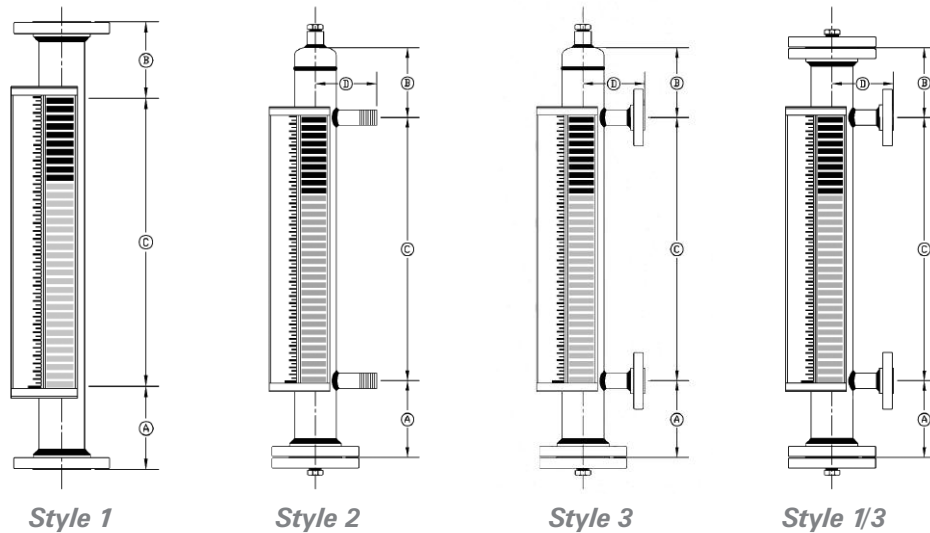
- Feet & Inches, 3/4" divisions
- Photo etched and backfilled on stainless steel
- Metric, percentage or volumetric available

Indicator:

- Bright colored – orange (liquid) blue (vapor)
- Can be seen from 150 ft or more
- 0.7" wide
- Hermetically sealed

* Note: All gauges are hydrostatically tested to 1-1/2 times pressure rating specified.

Level Gauge Mounting Styles



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

MOUNTING	
Style	Code
Flanged Top – Flanged Bottom	1
Screwed Side Top – Side Bottom	2
Flanged Side Top – Side Bottom	3
Dome Mount	4

GAUGE TYPE	
Type	Code
304 Stainless Steel	4
316 Stainless Steel	6

SPECIFIC GRAVITY OF MEASURED FLUID

MAX. OPERATING PRESSURE	
Code	Type
xxxP	PSIG
xxxB	BARG

MEASUREMENT LENGTH "L" DIM.

1200A-LG6-1-1ORF02-1.00-100F-285P-14-FS

PROCESS CONNECTION	
Size	Code
.50 inch	05
.75 inch	07
1.0 inch	10
1.5 inch	15
2.0 inch	20
Type	Code
Flanged Raised Face	RF
Flanged Ring Joint	RJ
Screwed Female	SC
Screwed Male	SM
Socket Weld	SW
Rating	Code
ANSI Class 150	02
ANSI Class 300	07
ANSI Class 600	14
ANSI Class 900	21
Threaded 3000#	30
ANSI Class 1500	36

OPTIONS*	
Code	Type
FS	Flipper Indication with Scale
FL	Flipper no Scale
N	NACE
I	Interface (specify both gravities)
DI	Dual Indication (follower only)
IB	Insulation Blanket
X	Special Options (specify)

*List all required
*For options not listed, consult factory.

MAX. OPERATING TEMPERATURE	
Code	Type
xxxF	Fahrenheit
xxxC	Celsius

For additional accessories, consult factory.

Series 1210-NT-6000 Level Transmitter

1210-LTM-NT-6000-30"-RM(10')

MEASURING LENGTH

OPTIONS

Code	Type
RM	Remote Electronics (specify cable length)
ELB	Elbow Mounted Electronics
BM	Bottom Mounted Electronics
FM	Factory Mutual Approval
CSA	CSA Approval
A	Atex Approval (consult factory)
I	ICEx Approval (consult factory)

Series 1210-NT-6000 Level Transmitter

Norriseal NT-6000 level transmitter is the latest development in magnetostrictive level sensing technology that is designed exclusively for magnetic level gages. The NT-6000 contains a low profile waveguide that is mounted away from the level gage 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
- 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
- Simple retrofit to most magnetic level gage 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

Fieldbus Option



The Series 1210-LTM is available with Foundation Fieldbus compliant electronics (ITK-4.6), allowing a wider range of interoperability with host manufacturers. Consult factory for details.



Norriseal level switches are non-invasive alarm switches that clamp to the gauge chamber and are magnetically actuated by the float through the chamber wall. These switches provide a low-cost, reliable alarm and control action without making additional cutouts in the vessel. The external mounting clamps make it easy to adjust the set point or service the switch anytime without interrupting the process. They are also easily added after gauge installation.



All switches may be wired for rising or falling level and NC or NO operation. Each switch has approximately 1/2 inch deadband to eliminate chattering and all have "break before make" action.

Series 1220 Level Switches

NS-200EX & NS-200EX/2

Type: Electrical
 Volts: 150 VAC / VDC
 Current: 1.0 Amps
 Power: 25 Watts
 Contacts: SPDT or DPDT
 Deadband: 1/2 inch
 MAWT: -40°F to +800°F
 Enclosure: NEMA 4X
 Connection: 3/4" FNPT

NS-700EX & NS-700EX/2

Type: Electrical
 Volts: 125/250 VAC
 Current: 10.0 Amps
 Power: 2500 Watts
 Contacts: SPDT or DPDT
 Deadband: 1/2 inch
 MAWT: -40°F to +600°F
 Enclosure: NEMA 4X
 Connection: 3/4" FNPT



NS-500EX & NS-500EX/2

Type: Electrical
 Volts: 500 VAC / VDC
 Current: 3.0 Amps
 Power: 100 Watts
 Contacts: SPDT or DPDT
 Deadband: 1/2 inch
 MAWT: -40°F to +600°F
 Enclosure: NEMA 4X
 Connection: 3/4" FNPT

NS-900EX & NS-900EX/2

Type: Electrical
 Volts: 125/250 VAC
 Current: 15.0 Amps
 Power: 3750 Watts
 Contacts: SPDT or DPDT
 Deadband: 1/2 inch
 MAWT: -40°F to +600°F
 Enclosure: NEMA 4X
 Connection: 3/4" FNPT

Stainless Steel Enclosures Available for All Switches

Electrical Area Classification: Class I, Division I, Groups B, C, D

NSP-100

Non bleed Pneumatic Switch
 Type: Non bleed Pneumatic
 Supply Pressure: 30 - 200 PSIG
 Deadband: 1/2 inch
 MAWT: 0°F to 200°F
 Enclosure: 316 SS
 Connection: 1/4" FNPT



ATEX

Insulation

Norriseal recommends insulation when gauges are to be used under extreme temperature conditions. In high-temperature applications, Norriseal can provide factory installed, removable insulation blankets (32°F to 600°F; see below left). Norriseal also provides electrical freeze protection (see below right) to prevent “icing” and flashing for fluids with low boiling points.



Heat Tracing

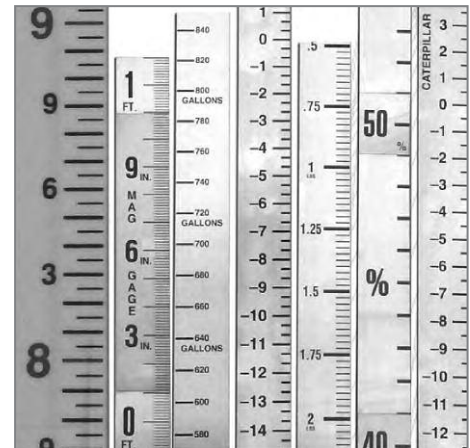
Norriseal offers a wide variety of both electrical and steam heat tracing options. Heat tracing can be used for freeze protection or to maintain the process temperature of molten materials. Electrical tracing is engineered to customer specifications and can be provided with controllers.

Scales

In addition to the standard stainless steel scale, graduated in feet and inches; other scale options are available.

- Inches Only
- Negative/Positive (Boiler Service)
- Metric (meters, centimeters)
- Decimal feet (0.1 ft. or 0.01 ft. divisions)
- Offset zero (plus and minus scale divisions)
- Percent (0 to 100)
- Volumetric (gallons, liters)*

* Given that the characteristics of every vessel are different, drawings or strapping tables must be supplied. A one-time charge for artwork may be required.



Testing

Norriseal performs hydrostatic pressure tests on 100% of all level gauges we manufacture at no additional charge. All materials are supported by material traceability reports, (MTR) available upon request. Both NACE-0175 and NACE-103 are available as well as dual NACE stamping if required. All peripheral bolts, nuts and fittings are ANSI B31.1/ B31.3 compliant. Further testing and documentation are available upon request. This includes: dimensional (as built) drawings, positive material identification (PMI), X-ray and dye penetration.

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Why you can depend on genuine Norriseal products

- In-house engineering and technical support
- In-depth applications experience
- Award-winning innovation and ongoing product development
- ISO 9001:2008 certified manufacturing
- Over five decades of industry service
- Compliance with all industry standards and specifications
- Responsive service and prompt delivery
- Field support available worldwide

Please contact your Norriseal representative for more details and assistance in specifying the optimal solution for your application.



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