JUPITER® 200

Magnetostrictive
Level Transmitter

DESCRIPTION

The Jupiter® 200 transmitter is a loop-powered, 24 V DC liquid-level transmitter and utilises the effect of a magnetic field on the magnetostrictive wire. Jupiter® is available as a direct insertion transmitter or as an external mounted transmitter onto the Atlas® Magnetic Level Indicator. The unit can be designed for liquid level and/or liquid-liquid interface measurement.

The innovative enclosure is a first in the industry, orienting dual compartments (wiring and electronics) in the same plane and angled to maximize ease of wiring, configuration, set-up and data display.

The high safety level of the Jupiter is demonstrated by a Safe Failure Fraction > 90%.

FEATURES

* High precision and repeatable level measurement:
  • accuracy up to ± 0,4 mm (0.015")
  • repeatability of ± 0,13 mm (0.005").
* Easy bench configuration – no need for level simulation.
* Two – wire, intrinsically safe loop powered level transmitter.
* Dual compartment with separate housing for wiring and electronics.
* Two-line, 8 character LCD and 3 button keypad.
* Process temperature up to +450 °C (+850 °F) (external mount) / +260 °C (+500 °F) (direct insertion).
* Process pressure up to 26,2 bar (380 psi) – custom floats up to 117 bar (1700 psi).
* Probe lengths up to 5,70 m (19 ft).
* Float failure reporting.
* Suited for SIL 1 or SIL 2 loops (full FMEDA report available).

APPLICATIONS

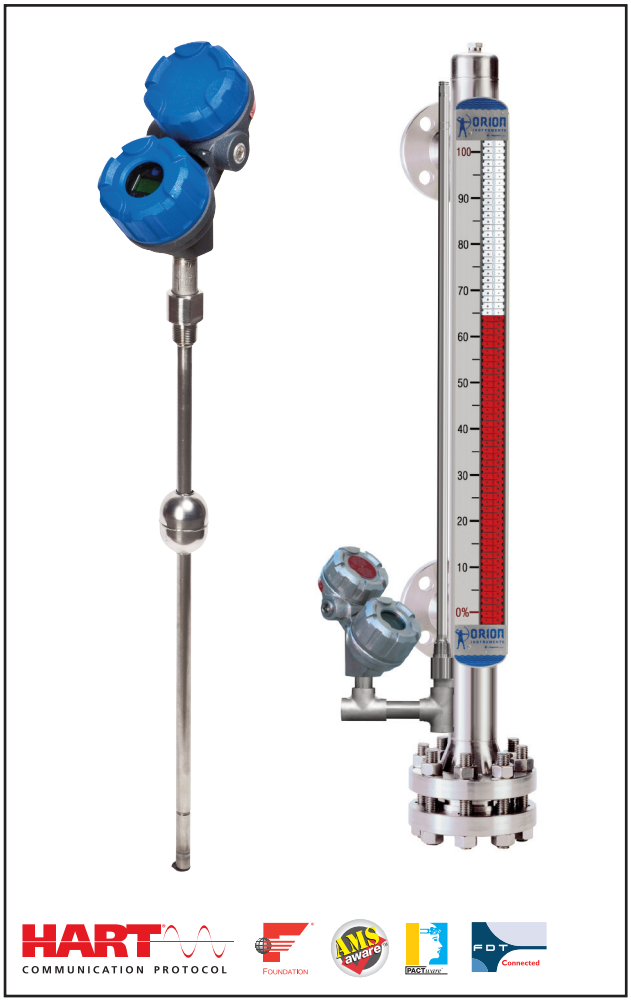
MEDIA:

- Highly recommended for use in liquids with enhanced foam development.
- Interface measurement where the upper liquid layer has a higher dielectric than the lower liquid layer.

CONDITIONS:

- Suited for use in a turbulent liquid environment as the float remains in contact with the liquid surface whilst emitting its signal.

Measures «LEVEL» and «INTERFACE»

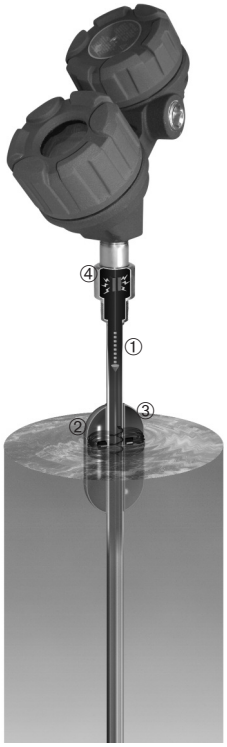


AGENCY APPROVALS

Agency	Approvals
ATEX	II 1 G Ex ia IIC T4 Ga, intrinsically safe II 1 G Ex ia IIC T4 Ga, FISCO – intrinsically safe① II 1/2 G Ex d IIC T6 Ga/Gb, flameproof enclosure
IEC	Ex ia IIC T4 Ga, intrinsically safe Ex ia IIC T4 Ga, FISCO – intrinsically safe① Ex d IIC T6, flameproof enclosure
LRS	Lloyds Register of Shipping (marine applications)
FM/CSA②	
Russian Authorisation Standards②	
Other approvals are available, consult factory for more details	

① Foundation Fieldbus™ units.
② Consult factory for proper model numbers and classifications.

TECHNOLOGY



The Enhanced Jupiter transmitter utilises the engineering principle of magnetostriction and the effect of a magnetic field on the magnetostrictive wire as the basis for operation of the instrument. The primary components are the probe assembly containing the wire and the electronics assembly.

① A low energy pulse which is generated by the electronics travels the length of the magnetostrictive wire.

② A return signal is generated from the precise location where the magnetic field of the float intersects the wire.

③ Interaction between the magnetic field, electrical pulse and magnetostrictive wire causes a slight mechanical disturbance in the wire that travels back up the probe at the speed of sound.

④ A timer precisely measures the elapsed time between the generation of the pulse and the return of the mechanical or acoustic signal. This is detected by the acoustic sensor located below the electronics housing. The software is set up to measure the time-of-flight data and to display and convert to level and/or liquid-liquid interface measurement.

PACT*ware*™ PC SOFTWARE PROGRAM

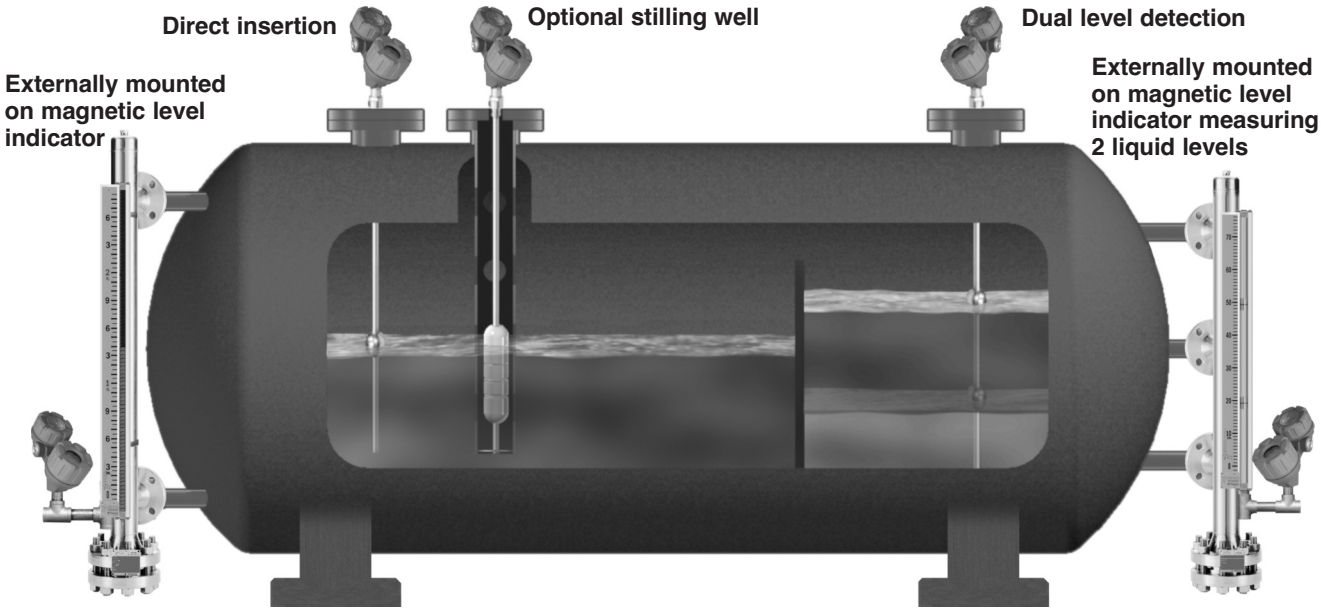
FDT technology provides an open communication interface between field instruments of various communication protocols and the host/ DCS system. The DTM driver is typical for one type of instrument and delivers the full functionality of the device added with graphical user interface via a laptop or PC. Magnetrol transmitters use the free shareware PACTware™ software to support DTM drivers and the FDT functionality. Via PACTware™ it becomes easy to configure, monitor and diagnose a Magnetrol transmitter from distance or even to call for factory assistance over the internet via the supply of screenshots of echo curves and trending graphs. Magnetrol DTM library HART® has passed the dtmINSPECTOR, the official FDT interoperability test and certification tool. The Magnetrol DTM's are free of charge and can be downloaded from www.magnetrol.com.

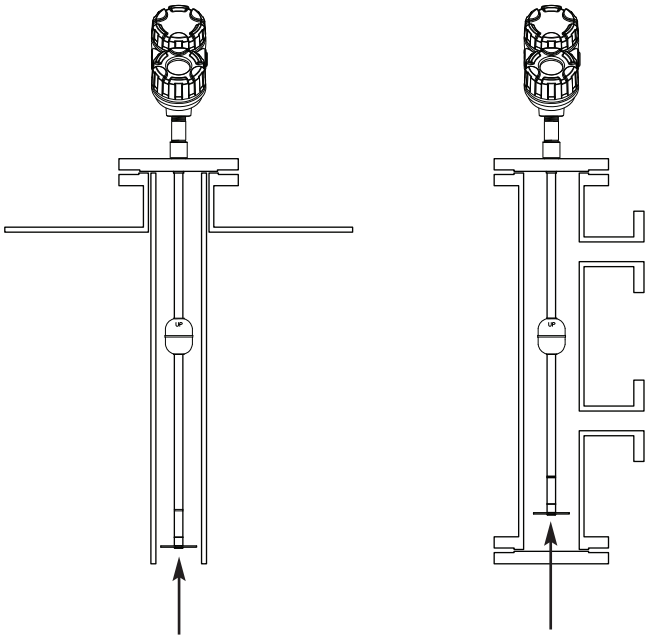
HART COMMUNICATION PROTOCOL

Magnetrol recommends the VIATOR® USB HART® Interface from MACTek® Corporation.

APPLICATIONS

As direct insertion model: Jupiter can be mounted inside a bridle, stillwell, external cage or directly inside the vessel.
As external mount model: Jupiter can be mounted on a new ordered magnetic level indicator.

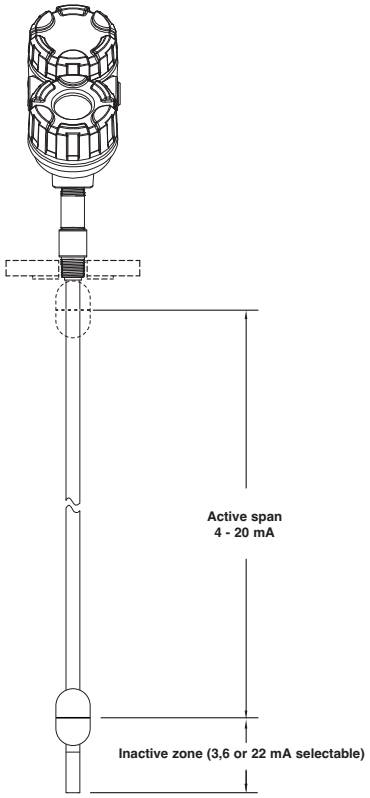




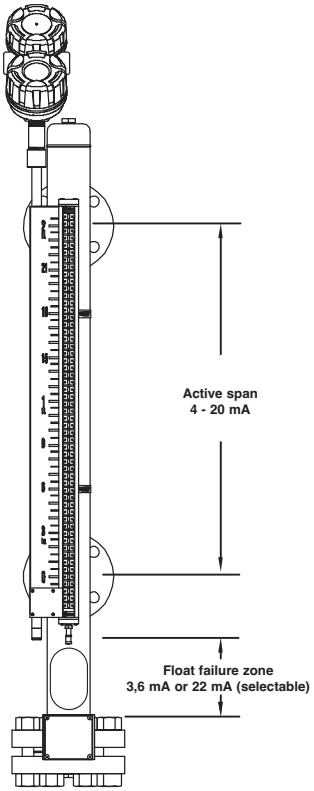
Units mounted in stilling wells or chambers are optionally provided with centering disc at the base of the probe, guaranteeing free movement of the float.

FLOAT FAILURE IDENTIFICATION

The Jupiter® 200 with SIL enhanced electronics is either using a probe with inactive zone or an extended MLI cage to identify a sinking or collapsed float as a float failure. Jupiter® 200 with SIL enhanced electronics are equipped with one float for measuring either the top level or the interface level.



Direct insertion



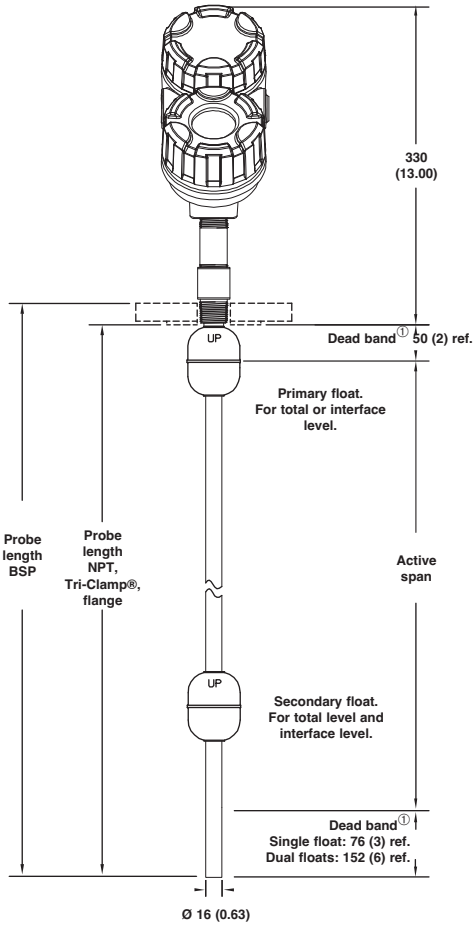
External mount

SELECTION DATA

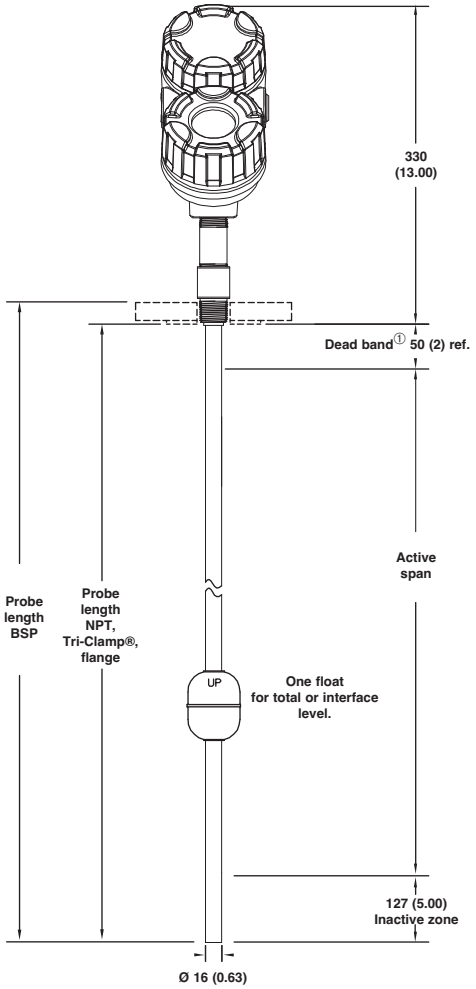
A complete measuring system consists of:

1. Jupiter® 200: transmitter and probe (MLI or cages as shown in this bulletin are not included).
2. OPTION: ATLAS®. Magnetic level indicator for use with Jupiter 200, external mount model. Consult bulletin BE 46-138.
3. Free of charge: Jupiter® 200 DTM (PACT*ware*™) can be downloaded from www.magnetrol.com.
4. OPTION: MACTek Viator USB HART® interface: order code: **070-3004-002**

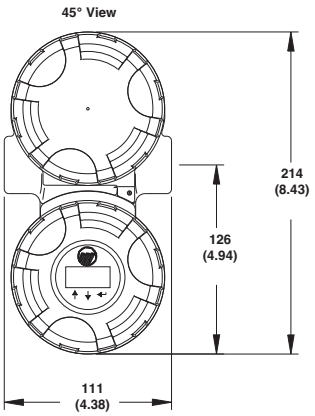
DIMENSIONS in mm (inches) – direct insertion Jupiter® 200



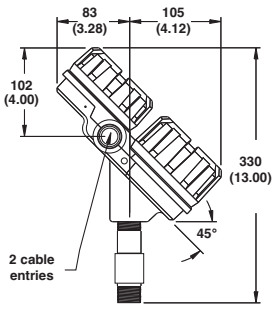
Standard electronics



SIL enhanced electronics



**Jupiter Housing,
(45° View)**



Jupiter Housing

① Values are float dependent and for reference only.

1 Order code for direct insertion Jupiter® 200

BASIC MODEL NUMBER

2 4	Magnetostrictive transmitter with standard HART® electronics	for total level or interface
2 5	Magnetostrictive transmitter with Foundation Fieldbus electronics	for total level or interface
2 6	Magnetostrictive transmitter with SIL enhanced HART® electronics	for total level or interface
2 7	Magnetostrictive transmitter with standard HART® electronics	for total level and interface①
2 8	Magnetostrictive transmitter with Foundation Fieldbus electronics	for total level and interface①

① Total level and interface measurement requires 2 floats.

HOUSING MATERIAL / MOUNTING / CABLE ENTRY

1	Cast aluminium, integral mount with 3/4" NPT cable entry
2	Cast aluminium, integral mount with M20 x 1,5 cable entry
3	316 SST, integral mount with 3/4" NPT cable entry
4	316 SST, integral mount with M20 x 1,5 cable entry

APPROVAL

1	FM/CSA, intrinsically safe, non-incendive
3	FM/CSA, explosion proof
A	ATEX flameproof enclosure
E	ATEX intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)
J	IEC flameproof enclosure
K	IEC intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)
L	INMETRO flameproof enclosure
M	INMETRO intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)

CONFIGURATION

D	Direct insertion

MOUNTING CONNECTION

Float to be mounted from the inside of the tank for small process connections.
Refer to sizing chart for chambers and stilling wells on the next page.

Threaded

1 1	3/4" NPT
4 1	2" NPT
2 2	1" BSP (G 1")

Tri-Clamp® ①

5 P	3"	Tri-Clamp®
6 P	4"	Tri-Clamp®

① Only in combination with material code D or E.

ANSI flanges

2 3	1"	150 lbs	ANSI RF
2 4	1"	300 lbs	ANSI RF
2 5	1"	600 lbs	ANSI RF
2 7	1"	900/1500 lbs	ANSI RF
3 3	1 1/2"	150 lbs	ANSI RF
3 4	1 1/2"	300 lbs	ANSI RF
3 5	1 1/2"	600 lbs	ANSI RF
3 7	1 1/2"	900/1500 lbs	ANSI RF
4 3	2"	150 lbs	ANSI RF
4 4	2"	300 lbs	ANSI RF
4 5	2"	600 lbs	ANSI RF
4 7	2"	900/1500 lbs	ANSI RF

5 3	3"	150 lbs	ANSI RF
5 4	3"	300 lbs	ANSI RF
5 5	3"	600 lbs	ANSI RF
5 6	3"	900 lbs	ANSI RF
6 3	4"	150 lbs	ANSI RF
6 4	4"	300 lbs	ANSI RF
6 5	4"	600 lbs	ANSI RF
6 6	4"	900 lbs	ANSI RF

EN (DIN) flanges

E A	DN80	PN16	EN 1092-1 Type A
E B	DN80	PN25/40	EN 1092-1 Type A
F A	DN100	PN16	EN 1092-1 Type A
F B	DN100	PN25/40	EN 1092-1 Type A

SEE NEXT PAGE

	2			–		D			–				–		

complete order code for JUPITER® 200: direct insertion model

X = product with a specific customer requirement

MATERIAL OF CONSTRUCTION

Max Process Temp: +95 °C (+200 °F)

1	316/316L (1.4401/1.4404) SST (standard)
2	Hastelloy® C (2.4819)
3	Monel® (2.4360)

Max Process Temp: +260 °C (+500 °F)

A	316/316L (1.4401/1.4404) SST (standard)
B	Hastelloy® C (2.4819)
C	Monel® (2.4360)
D	Hygienic 316/316L (1.4401/1.4404) SST 0,5 µm Ra (20 Ra) mechanically polished surface finish①
E	Hygienic 316/316L (1.4401/1.4404) SST 0,4 µm Ra (15 Ra) electropolished surface finish①

① Only in combination with hygienic service float and corresponding Ra value.

DIRECT INSERTION FLOAT(S)

See next page for standard floats.
Consult factory regarding floats not listed for your application(s).

INSTALLATION CONSIDERATIONS

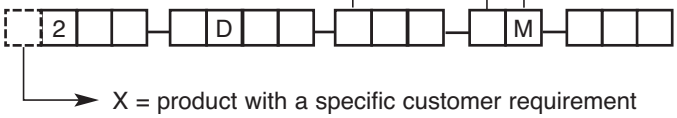
A	Transmitter to be mounted in vessel **without** stilling well
B	Transmitter to be mounted in chamber, bridle, or stilling well

UNIT OF MEASUREMENT

M	Insertion length in cm

PROBE LENGTH – Specify per cm (0.39") increment
See page 5 for probe length versus active span

0 3 0	min 30 cm (12")
5 7 0	max 570 cm (224")



complete order code for JUPITER® 200: direct insertion model

X = product with a specific customer requirement

Sizing chart for chambers & stilling wells

Reference the chart below to identify an appropriate chamber or stilling well size for your application. Adequate clearance is recommended to ensure proper operation.

Float Diameter mm (inches)	Probe lengths ≤ 366 cm (144")						Probe lengths > 366 cm (144")	
	3" sch. 5/10	3" sch. 40	4" sch. 5/10	4" sch. 40	4" sch. 80	4" sch. 160	4" sch. 10	4" sch. 40
47 (1.85)	•	•	•	•	•	•	•	•
51 (2.0)	•		•	•	•	•	•	•
57 (2.25)			•	•	•		•	
64 (2.5)			•	•				
76 (3.0)								

DIRECT INSERTION FLOATS

The floats listed below are suitable for most applications. Select the appropriate 2-digit float code and place it in the Jupiter® model number (location 9 & 10). Consult factory for custom floats or to consult about your specific application.

Direct insertion total level float (uppermost liquid layer)

Minimum liquid specific gravity	316/316L SST	Titanium	Hastelloy® C	Hygienic service 316/316L SST 0,5 µm Ra (20 Ra)	Hygienic service 316/316L SST 0,4 µm Ra (15 Ra)
≥ 0,86	**AA** Ø 51 mm (2.0")	**BA** Ø 51 mm (2.0")	**CA** Ø 47 mm (1.85")	**DA** Ø 51 mm (2.0")	**FA** Ø 51 mm (2.0")
≥ 0,83	**AA** Ø 51 mm (2.0")	**BA** Ø 51 mm (2.0")	**CB** Ø 57 mm (2.25")	**DA** Ø 51 mm (2.0")	**FA** Ø 51 mm (2.0")
≥ 0,7	**AB** Ø 58 mm (2.3")	**BA** Ø 51 mm (2.0")	**CB** Ø 57 mm (2.25")	**DB** Ø 58 mm (2.3")	**FB** Ø 58 mm (2.3")
≥ 0,68	**AB** Ø 58 mm (2.3")	**BB** Ø 57 mm (2.25")	**99** consult factory	**DB** Ø 58 mm (2.3")	**FB** Ø 58 mm (2.3")
≥ 0,64	**AC** Ø 64 mm (2.5")	**BB** Ø 57 mm (2.25")	**99** consult factory	**DC** Ø 64 mm (2.5")	**FC** Ø 64 mm (2.5")
≥ 0,52	**99** consult factory	**BB** Ø 57 mm (2.25")	**99** consult factory	**99** consult factory	**99** consult factory
< 0,52	**99** consult factory	**99** consult factory	**99** consult factory	**99** consult factory	**99** consult factory

Direct insertion interface level float (lower or middle liquid layer) ①

Minimum liquid specific gravity upper / lower	316/316L SST	Titanium	Hastelloy® C	Hygienic service 316/316L SST 0,5 µm Ra (20 Ra)	Hygienic service 316/316L SST 0,4 µm Ra (15 Ra)
sinks through / floats on **≤ 0,89 / ≥ 1,00**	**MA** Ø 51 mm (2.0")	**NA** Ø 51 mm (2.0")	**PA** Ø 47 mm (1.85")	**QA** Ø 51 mm (2.0")	**RA** Ø 51 mm (2.0")
sinks through / floats on **≤ 1,00 / ≥ 1,12**	**MB** Ø 51 mm (2.0")	**NB** Ø 51 mm (2.0")	**PB** Ø 47 mm (1.85")	**QB** Ø 51 mm (2.0")	**RB** Ø 51 mm (2.0")

① Consult factory for other S.G. values.

PRESSURE/TEMPERATURE RATINGS FOR STANDARD FLOATS

Temp °C (°F)	Pressure rating (includes 1,5 x safety factor) bar (psi)				
	AA, AB, AC, MA, MB, DA, DB, DC, QA, QB, FA, FB, FC, RA, RB	**BA, NA, NB**	**BB**	**CA, PA, PB**	**CB**
20 (70)	30,3 (440)	51,7 (750)	27,6 (400)	23,4 (340)	22,1 (320)
40 (100)	27,8 (403)	49,6 (719)	26,4 (383)	22,7 (329)	21,4 (310)
95 (200)	26,3 (381)	45,2 (656)	24,1 (350)	22,0 (318)	20,6 (299)
120 (250)	25,3 (367)	39,9 (578)	21,2 (308)	21,4 (310)	20,1 (292)
150 (300)	24,3 (352)	34,5 (500)	18,4 (267)	20,9 (303)	19,7 (285)
175 (350)	23,2 (337)	30,7 (445)	16,4 (238)	20,1 (292)	19,0 (275)
200 (400)	22,3 (323)	27,0 (391)	14,3 (208)	19,4 (281)	18,2 (264)
230 (450)	21,7 (315)	24,3 (352)	13,0 (188)	18,8 (273)	17,7 (257)
260 (500)	21,2 (308)	21,6 (313)	11,5 (167)	18,3 (266)	17,2 (250)

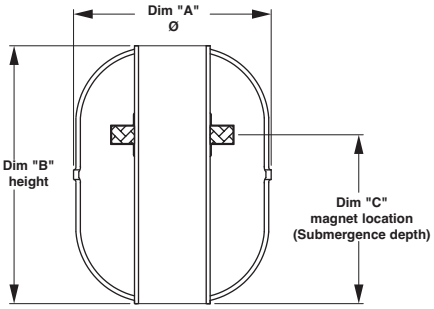
Two floats for total level and interface measurement

Code	Total	Interface
11	AA	MA
12	AB	
13	AC	
21	AA	MB
22	AB	
23	AC	
31	BA	NA

Code	Total	Interface
32	BB	NA
41	BA	NB
42	BB	
51	CA	PA
52	CB	
61	CA	PB
62	CB	

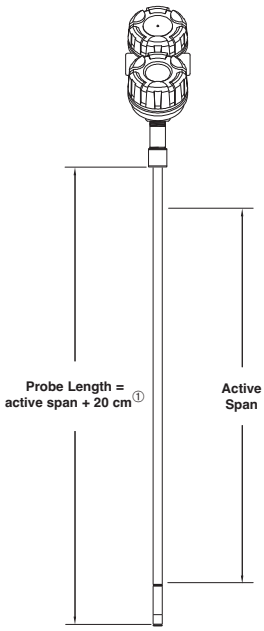
when utilizing two floats to measure total and interface liquid levels, reference the chart on the left to determine the appropriate float code to insert into the Jupiter® model number.

PHYSICAL DIMENSIONS

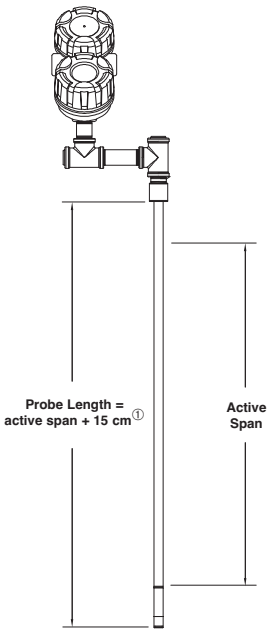


Float Code	Dim. A mm (inch)	Dim. B mm (inch)	Dim. C mm (inch)
AA, DA, FA	51 (2.0)	69 (2.7)	47 (1.84)
AB, DB, FB	58 (2.3)	76 (3.0)	51 (2.0)
AC, DC, FC	64 (2.5)	76 (3.0)	54 (2.14)
BA	51 (2.0)	71 (2.8)	50 (1.98)
BB	57 (2.25)	76 (3.0)	53 (2.08)
CA	47 (1.85)	76 (3.0)	52 (2.06)
CB	57 (2.25)	109 (4.3)	76 (3.01)
MA, QA, RA	51 (2.0)	69 (2.7)	34 (1.35)
MB, QB, RB	51 (2.0)	69 (2.7)	34 (1.35)
NA	51 (2.0)	71 (2.8)	36 (1.4)
NB	51 (2.0)	71 (2.8)	36 (1.4)
PA	47 (1.85)	76 (3.0)	38 (1.5)
PB	47 (1.85)	76 (3.0)	38 (1.5)

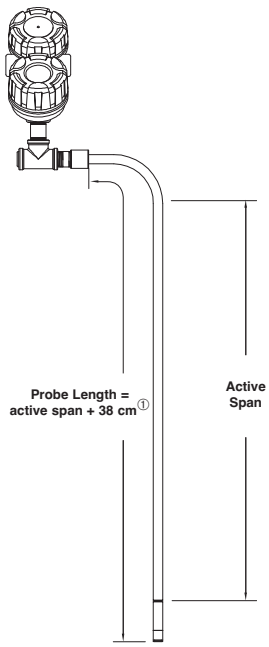
DIMENSIONS in mm (inches) – external mount Jupiter® 200



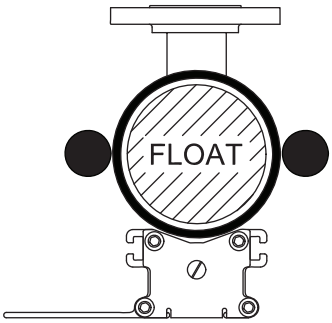
External mount
Top mount



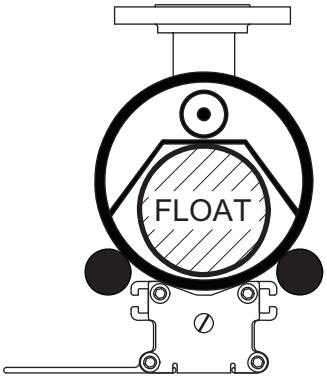
External mount
Top mount with offset



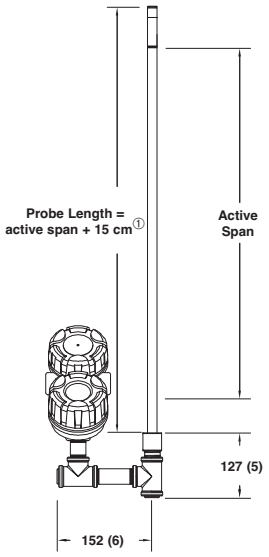
External mount
Top mount - high temp.



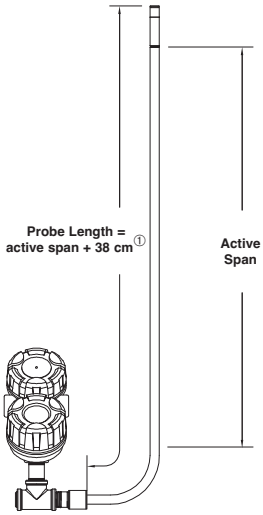
Probe mounting positions on
Atlas™, Vector™ and Gemini™



Probe mounting positions on
Aurora®



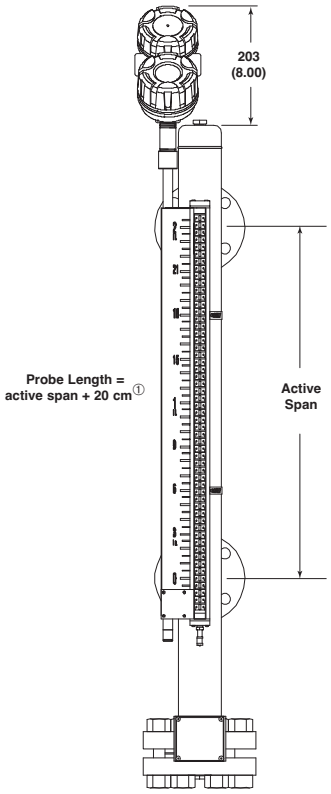
External mount
Bottom mount with offset



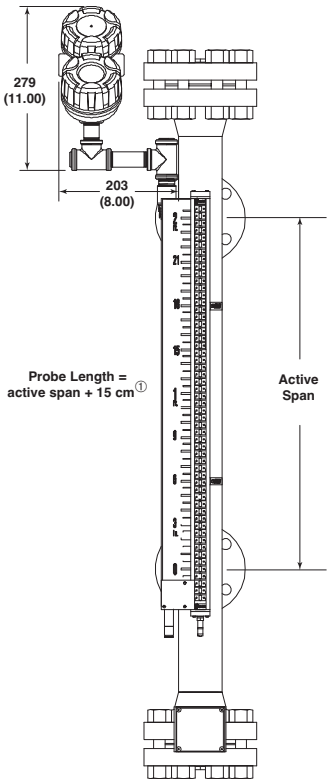
External mount
Bottom mount - high temp.

① Add additional 5 cm for SIL enhanced electronics

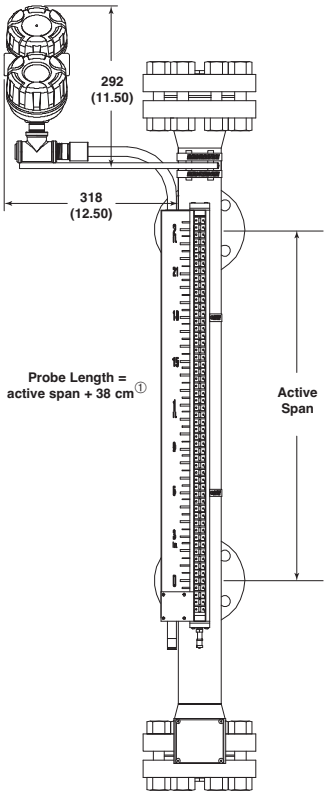
DIMENSIONS in mm (inches)



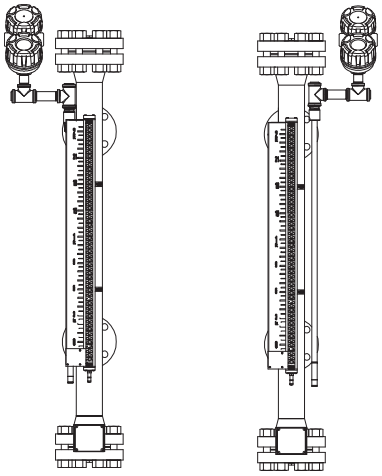
Top mount



Top mount offset

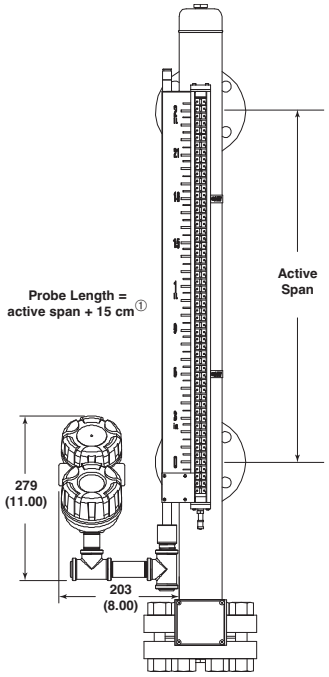


Top mount offset
High temperature bend

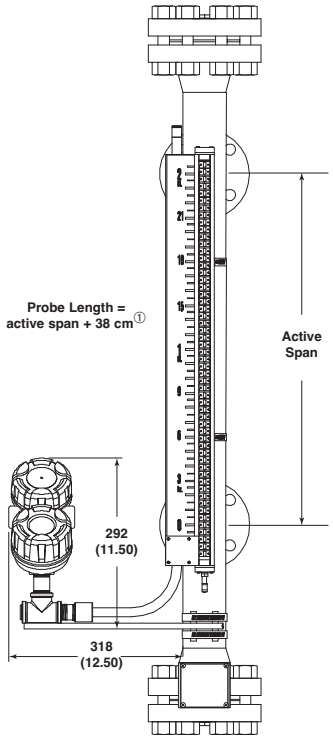


Left side mount (standard)

Right side mount



Bottom mount offset



Bottom mount offset
High temperature bend

Note: When specifying the mounting location, be aware of other accessories that may also mount on the magnetic level indicator (i.e. switches, heat tracing, etc). **Choose left side mount whenever possible.**

① Add additional 5 cm for SIL enhanced electronics

1 Order code for external mount Jupiter® 200

BASIC MODEL NUMBER

2 4	Magnetostrictive transmitter with standard HART® electronics	for total level or interface
2 5	Magnetostrictive transmitter with Foundation Fieldbus electronics	for total level or interface
2 6	Magnetostrictive transmitter with SIL enhanced HART® electronics	for total level or interface
2 7	Magnetostrictive transmitter with standard HART® electronics	for total level and interface①
2 8	Magnetostrictive transmitter with Foundation Fieldbus electronics	for total level and interface①

① Total level and interface measurement requires 2 floats, consult factory for magnetic level indicator (MLI)

HOUSING MATERIAL / MOUNTING / CABLE ENTRY

1	Cast aluminium, integral mount with 3/4" NPT cable entry
2	Cast aluminium, integral mount with M20 x 1,5 cable entry
3	316 SST, integral mount with 3/4" NPT cable entry
4	316 SST, integral mount with M20 x 1,5 cable entry

APPROVAL

1	FM/CSA, intrinsically safe, non-incendive
3	FM/CSA, explosion proof
A	ATEX flameproof enclosure
E	ATEX intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)
J	IEC flameproof enclosure
K	IEC intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)
L	INMETRO flameproof enclosure
M	INMETRO intrinsically safe (digit 2 = 4, 6 or 7) / ATEX FISCO (digit 2 = 5 or 8)

CONFIGURATION

E	Top mount, probe material code 1 only
F	Top mount offset, probe material code 1 only
G	Top mount offset, high temperature, probe material code A only
H	Bottom mount offset, probe material code 1 only
J	Bottom mount offset, high temperature, probe material code A only

MOUNTING LOCATION

0 0	External mount on MLI or chamber, left side (standard)
0 1	External mount on MLI or chamber, right side

PROBE MATERIAL OF CONSTRUCTION

1 0 0	316/316L (1.1401/1.4404) stainless steel (standard), +120 °C (+250 °F) maximum
A 0 0	316/316L (1.1401/1.4404) stainless steel (high temp), +260 °C (+500 °F) maximum; +450 °C (+850 °F) with factory-installed fiberglass insulation

CHAMBER MOUNTING CODE

Without high-temp chamber insulation		**With** high-temp chamber insulation	
1	MLI with a 2" ANSI chamber	E	MLI with a 2" ANSI chamber
2	MLI with a 2½" ANSI chamber	F	MLI with a 2½" ANSI chamber
3	MLI with a 3" ANSI chamber	G	MLI with a 3" ANSI chamber
4	MLI with a 4" ANSI chamber	H	MLI with a 4" ANSI chamber
5	MLI is a top mount design	J	MLI is a top mount design
0	None (if clamps already exist)	0	None (if clamps already exist)

UNIT OF MEASUREMENT

M	Probe length in cm

PROBE LENGTH – Specify per cm (0.39") increment
See pages 9 & 10 for probe length versus active span

0 3 0	min 30 cm (12")
5 7 0	max 570 cm (224")

	2					0			0	0		M			

complete order code for external mount JUPITER® 200

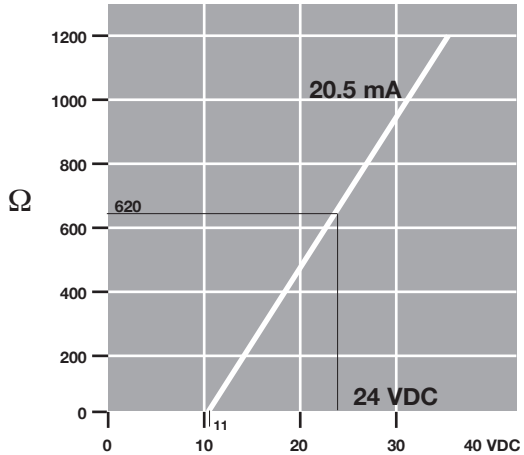
→ X = product with a specific customer requirement

FUNCTIONAL/PHYSICAL

Description		*Specification*
Power (at terminals)	HART®	ATEX & IEC flameproof enclosure: 12 to 32 V DC ATEX & IEC intrinsically safe: 12 to 28,4 V DC
	Foundation Fieldbus™	ATEX & IEC flameproof enclosure: 9 to 32 V DC ATEX & IEC FISCO: 9 to 17,5 V DC
Power consumption		0,7 W
Output		4-20 mA with HART®, 3,8 mA to 20,5 mA useable (meets NAMUR NE 43) or Foundation Fieldbus™ H1
Resolution		Analog: 0,01 mA Display: 0,1 units
Loop Resistance (see table below)		620 Ω @ 20,5 mA - 24 V DC
Damping		Adjustable 0-25 s
Diagnostic Alarm		Selectable 3,6 mA, 22 mA or HOLD last output
User Interface		HART® communicator, AMS® or PACT*ware*™, Foundation Fieldbus™ and/or 3-button keypad
Display		2-line x 8-character LCD. Displays level (cm/inches), mA and % of level.
Menu Language		English/Spanish (Foundation Fieldbus™: English)
Housing Material		IP 66/Aluminium A356T6 (< 0.20 % copper) or stainless steel
Approvals		ATEX II 1 G Ex ia IIC T4 Ga, intrinsically safe ATEX II 1 G Ex ia IIC T4 Ga, FISCO - intrinsically safe① ATEX II 1/2 G Ex d IIC T6 Ga/Gb, flameproof enclosure IEC Ex ia IIC T4 Ga, intrinsically safe IEC Ex ia IIC T4 Ga, FISCO - intrinsically safe① IEC Ex d IIC T6, flameproof enclosure LRS - Lloyds Register of Shipping (marine applications) Other approvals are available, consult factory for more details
SIL② (Safety Integrity Level)	Standard electronics	Functional safety to SIL 1 as 1oo1 / SIL 2 as 1oo2 in accordance to IEC 61508 – SFF of 83,7 % – full FMEDA reports and declaration sheets available at request
	Enhanced electronics	Functional safety to SIL 2 as 1oo1 in accordance to IEC 61508 – SFF of 90,7 % – full FMEDA reports and declaration sheets available at request
Electrical Data		Ui = 28,4 V, Ii = 120 mA, Pi = 0,84 W (HART®) Ui = 17,5 V, Ii = 380 mA, Pi = 5,32 W (Foundation Fieldbus™)
Equivalent Data		Ci = 2,2 nF, Li = 3 μH (HART®) Ci = 3 nF, Li = 3 μH (Foundation Fieldbus™)
Environmental protection		EN 60654-1
Drop protection		EN 50178
Surging protection		EN 61326 (1000V)
Net weight	Cast aluminium	2,7 kg (6.0 lbs) – transmitter head / electronics only
	Stainless steel	5,7 kg (12.6 lbs) – transmitter head / electronics only
Foundation Fieldbus™	ITK Version	4.61
	H1 Device Class	Link Master (LAS) – selectable ON/OFF
	Function Blocks	1 x RB(s), 2 x AI (s) and 1 x TB (c)
	Execution time	15 ms
	Quiescent current draw	15 mA
	DD/CFF files	Available at www.fieldbus.org

① Foundation Fieldbus™ units.
② Not applicable for Foundation Fieldbus™ units.

POWER CONSUMPTION



PERFORMANCE

Description	*Specification*
Accuracy	± 0,4 mm (0.015")
Repeatability	± 0,005 % of full span or 0,13 mm (0.005") – whichever is greater
Linearity	± 0,020 % of full span or 0,79 mm (0.031") – whichever is greater
Max fill / drain rate	15 cm/second (6"/second)
Response Time	< 0,1 second
Warm-up Time	< 5 seconds
Ambient Temp.	-40 °C to +70 °C (-40 °F to +160 °F) Display: -20 °C to +70 °C (-5 °F to +160 °F)
Humidity	0-99 %, non-condensing
Electromagnetic Compatibility	Meets CE requirements (EN 61326: 1997 + A1 + A2)

PROBE SPECIFICATIONS

Description		*Specification*
Materials	Probe	316/316L (1.4401/1.4404) standard, mechanically polished or electropolished surface finish Hastelloy C® (2.4819) or Monel® (2.4360)
	Float	316/316L (1.4401/1.4404), Titanium or Hastelloy C® (2.4819)
	Process seal	None, welded construction
Probe diameter		16 mm (0.63")
Probe length		Min 30 cm (12") – max 570 cm (224")
Dead band①	Upper	Direct insertion model: 50 mm (2"). External mount model: depending configuration.
	Bottom	76 mm (3") – for units with standard electronics and single float 152 mm (6") – for units with standard electronics and dual floats
Inactive zone - bottom		127 mm (5") – for units with SIL enhanced electronics
Process temperature	Direct insertion	-40 °C to +95 °C (-40 °F to +200 °F) – standard probe -40 °C to +260 °C (-40 °F to +500 °F) – high temperature probe
	External mount	-40 °C to +120 °C (-40 °F to +250 °F) – standard -40 °C to +260 °C (-40 °F to +500 °F) – high temperature without factory insulated MLI -196 °C to +450 °C (-320 °F to +850 °F) – high temperature with factory insulated MLI
Max. process pressure (direct insertion)		117 bar @ +40 °C (1700 psi @ +100 °F), limited to the pressure rating of the selected float and process connection
Vacuum service		Full vacuum

① Values are float dependent and for reference only.

Direct Insertion - Jupiter Level Transmitter

Customer name: . . . . . .

Quote reference #: . . . . . .

Email address: . . . . . .

Jupiter Model Number

2 ☐☐ – ☐☐☐☐ – ☐☐☐ – ☐☐ – ☐☐☐

Process media: . . . . . .

Media specific gravity: . . . . . .

Maximum operating pressure: . . . . . .

Maximum operating temperature: . . . . . .

Low level set point (4 mA / 0 %): . . . . . .

High level set point (20 mA / 100 %): . . . . . .

Measurements from tip of sensor tube.
If mounted in chamber or bridle, specify "C/L of process connection"

General information

Is pre-existing chamber or stilling well present?: ☐ Y / ☐ N

Inner diameter: . . . . . .

Is moderate vibration present?: ☐ Y / ☐ N

Please describe: . . . . . .

. . . . . .

Is turbulence or flow present?: ☐ Y / ☐ N

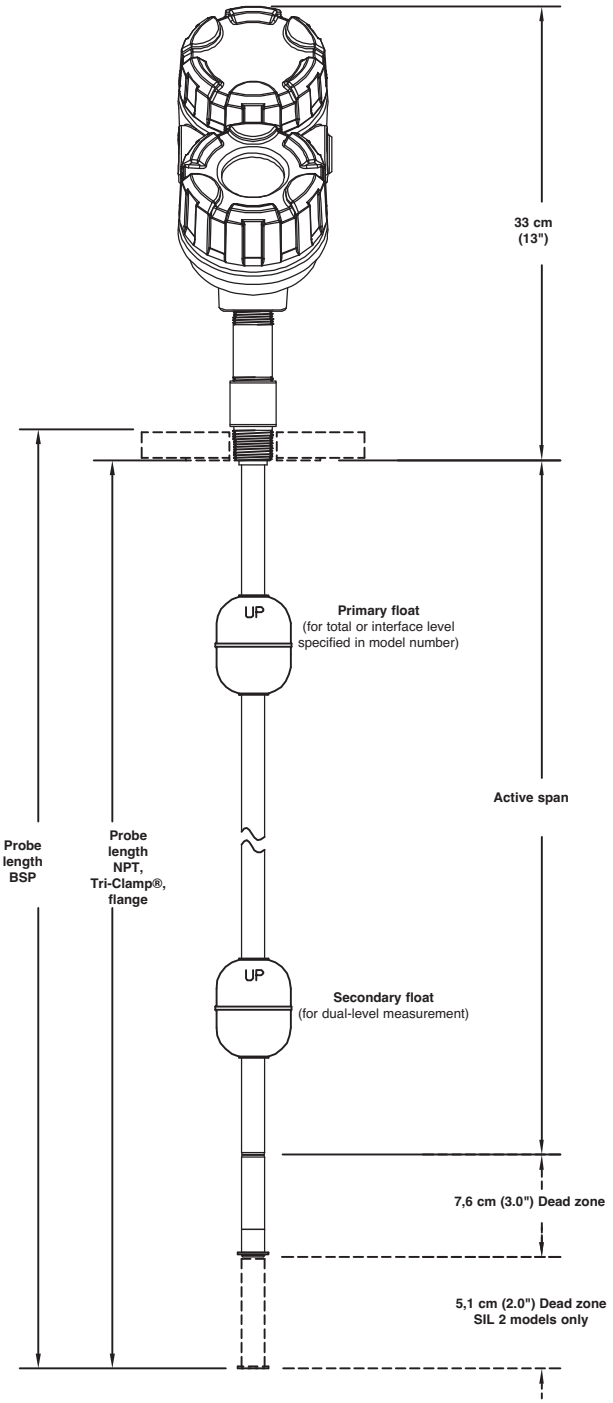
Please describe: . . . . . .

. . . . . .

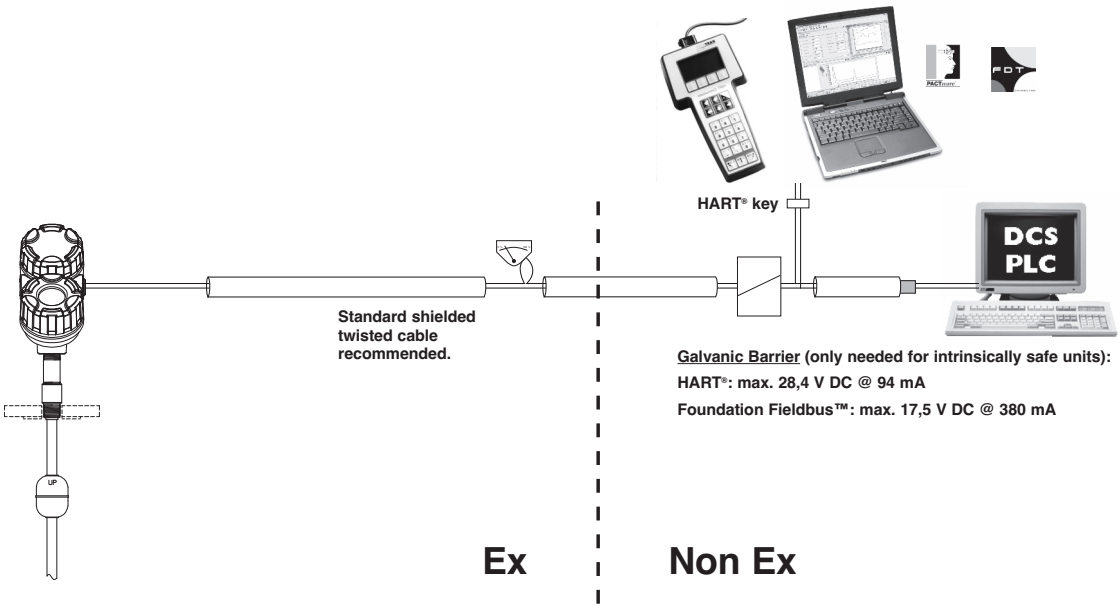
Important information regarding SIL 2 compliant models

If SIL 2 construction is required, an additional 5,1 cm (2") inactive section must be added to the base of the probe in order for the float to travel out of the active span in the event of a failure.

The 12,7 cm (5") dimension is standard for all standard floats offered in the Jupiter sales literature. Exceptions may require a longer inactive dimension. Consult factory.



If SIL 2 is not required, disregard the additional 5,1 cm (2") dead zone when specifying the probe order length


HART® key
DCS
PLC
Standard shielded
twisted cable
recommended.
Galvanic Barrier (only needed for intrinsically safe units):
HART®: max. 28,4 V DC @ 94 mA
Foundation Fieldbus™: max. 17,5 V DC @ 380 mA
Ex
Non Ex

ISO-9001:2008 REGISTERED FIRM
DNV Certification B.V., THE NETHERLANDS
Accredited by the RvA

QUALITY ASSURANCE - ISO 9001:2008

THE QUALITY ASSURANCE SYSTEM IN PLACE AT MAGNETROL GUARANTEES THE HIGHEST LEVEL OF QUALITY DURING THE DESIGN, THE CONSTRUCTION AND THE SERVICE OF CONTROLS.
OUR QUALITY ASSURANCE SYSTEM IS APPROVED AND CERTIFIED TO **ISO 9001:2008** AND OUR TOTAL COMPANY IS COMMITTED TO PROVIDING FULL CUSTOMER SATISFACTION BOTH IN QUALITY PRODUCTS AND QUALITY SERVICE.

PRODUCT WARRANTY

ALL JUPITER® 200 LEVEL CONTROLS ARE WARRANTED FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE FULL YEAR FROM THE DATE OF ORIGINAL FACTORY SHIPMENT.
IF RETURNED WITHIN THE WARRANTY PERIOD; AND, UPON FACTORY INSPECTION OF THE CONTROL, THE CAUSE OF THE CLAIM IS DETERMINED TO BE COVERED UNDER THE WARRANTY; THEN, MAGNETROL INTERNATIONAL WILL REPAIR OR REPLACE THE CONTROL AT NO COST TO THE PURCHASER (OR OWNER) OTHER THAN TRANSPORTATION.
MAGNETROL SHALL NOT BE LIABLE FOR MISAPPLICATION, LABOR CLAIMS, DIRECT OR CONSEQUENTIAL DAMAGE OR EXPENSE ARISING FROM THE INSTALLATION OR USE OF THE EQUIPMENT. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED, EXCEPT, SPECIAL WRITTEN WARRANTIES COVERING SOME MAGNETROL PRODUCTS.

Magnetrol

BULLETIN N°: BE 46-148.3
EFFECTIVE: AUGUST 2015
SUPERSEDES: April 2012

UNDER RESERVE OF MODIFICATIONS

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