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PENBERTHY PMT™ Series Magnetostrictive Transmitter
MODELS PMT Magnetostrictive Transmitter / In-Tank PMT Magnetostrictive Transmitter

FEATURES

- 4-20 mA loop powered; 12.5 to 36VDC
- HART Protocol Communication NEW! HART 7
- Sensing lengths from 12 inches (305mm) to 360 inches (9 meters)
- Process Temperature -300ºF to 700ºF (-185ºC to 372ºC) (Insulation Safeguards Required over 350ºF [176ºC]) - Gage Mount
- Process Temperature -40ºF (-40ºC) to 285ºF (140ºC) - Tank Mount
- Dual Float Functionality (Interface and Total Level)
- ETL approved for USA, Canada, ATEX and IECEx (Explosion/Flame Proof, Intrinsic Safety)
- Dual Compartment NEMA 4X; IP66 Enclosure
  - Epoxy Coated Aluminum Standard
  - 316SS optional
- One-Touch Waveform Graphical Display

PMT Series Magnetostrictive Transmitter

The PMT Series magnetostrictive transmitter represents a significant advancement in level measurement technology. The integration of Penberthy's signal capture technology sets it apart with its superior signal-to-noise ratio, ensuring highly accurate level readings even in challenging environments. The dual-entry enclosure design enhances its functionality by offering both safe and convenient access to the HMI on the front and easy access to power connections in the back. The HMI enhances user interaction by offering instant access to vital information, such as current level readings and device settings, all at the touch of a button. The real-time waveform graph is an especially useful tool for monitoring and diagnostics, offering a visual representation of the process in action.

Compatibility with HART 7 makes the PMT highly versatile and easy to integrate into existing systems, facilitating seamless communication and control. The transmitter is also designed with user-friendliness in mind, from installation to setup, ensuring that it can be quickly and efficiently deployed in various applications. In line with Penberthy's reputation for reliability, the PMT complements our established range of flag indicators, floats, and switches, adding a robust solution for continuous level control.

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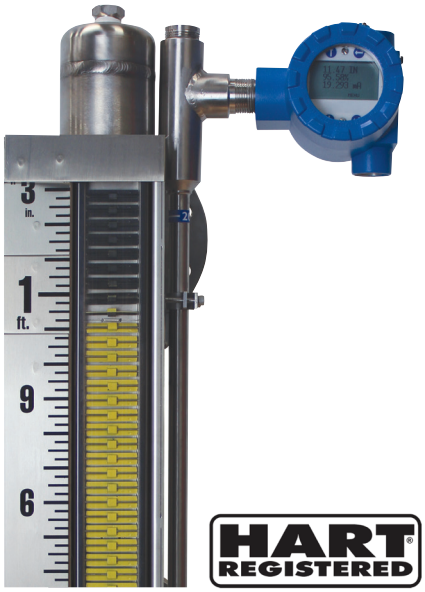
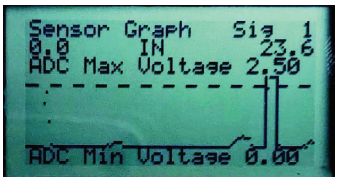
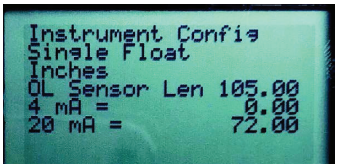




- View Full waveform, including trigger level and # of peaks
- LIVE View of signal, noise condition



- Quickly Display Current Device Parameters
- Verify Range, URV, LRV
- Verify SN, Tag#

Explosion Proof

ETL (USA, Canada)

- Class I, Div. 1 and 2, Groups B, C, D; T6
- Class 1, Zone 1, AEx db IIB+H2 T6
  Ex db IIB+H2 T6 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

ATEX

- II 2 G Ex db IIB+H2 T6 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

IECEx

- Ex db IIB+H2 T6 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

Intrinsic Safety

ETL (USA, Canada)

- Class I, Div. 1 and 2, Groups C, D; T4
- Class 1, Zone 1, AEx db IA IIB T4 GB
  Ex db IA IIB T4 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

ATEX

- II 2 G Ex db IA IIB T4 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

IECEx

- Ex db IA IIB T4 Gb
- -40ºC ≤ Ta ≤ +60ºC
  (-40ºF ≤ Ta ≤ +140ºF)

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How to Specify PMT Magnetostrictive Transmitter

PMT G – A2 A– ### / 03650– S S 1

Mounting Style

Code	Description
G	Gage Mount 316L/316SS Sensor Housing
T	Tank Mount 316/316SS Sensor

Housing

Code	Description
A2	Aluminum Dual Compartment
S2	Stainless Steel Dual Compartment

Transmitter Orientation

Code	Description
A	Top Left Hand (Standard)
B	Top Right Hand
C	Bottom Right Hand
D	Bottom Left Hand

* Tank Mount only available with selection A or B

Max Sensing Range

12” to 360” (304.8mm to 9144mm)
In 1-Inch Increments (Example: 48” = 048)
(Determined by manufacturer)

Measuring Range

Order Length: 12” to 360” (305mm to 9144mm)
On 1-Inch Increments, In Hundredths of an Inch (Example: 36.5” = 03650)

Area Classification

Code	Description
0	Ordinary Location (IP66/Type 4X)
1	North American Explosion Proof/Flame Proof (IP66/Type 4X)
2	North American Intrinsic Safety (IP66/Type 4X)
3	ATEX / IECEx Flame Proof (IP66/Type 4X)
4	ATEX / IECEx Intrinsic Safety (IP66/Type 4X)

Level

Code	Description
S	Single Level
D	Dual Level

Process Temperature (A-Z)

Code	Description
S	Standard
H	High Temperature (Insulation Blanket Required for Processes over 350ºF [176ºC]
C	Cold Temperature (Thermowell Included - Insulation Safeguards Required)
V	Vibration (Special Mounting)

*Tank Mount only available with selection S

See following page for Tank Mount Connection Kit

Specifications

Electronics

Supply Voltage:	12.5 - 36 Vdc (12.5 V @ 20mA)
Repeatability:	.005% of full scale or .010”, whichever is greater
Non-Linearity:	.01% of full scale or .030”, whichever is greater
Damping:	1 to 32 Seconds
Operating Temp:	-50°C to 85°C (-58°F to 185°F)
RFI Guide:	SAMA PMC 31.1-5.1 20 to 1000 Mhz to 30 V/m
Humidity Guide:	SAMA PMC 31.1-5.2

Housing

- Dual compartment explosion proof housing
- 3/4” NPT conduit entry
- Epoxy coated aluminum (Standard); 316SS (Optional)
- Nema 4X; IP66

Sensor Probe Specification

Gage/Tank Mount Materials:	316L/316SS Standard
Vibration Guide:	SAMA PMC 31.1-5.3

See Sales Drawing A35152-G-PB-SALES for BOM and Dimensional Information

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PMT In-Tank Process Connection & Accessory Kit

Example Model Code: PMT T-A2A-048/03650-SS1+ TA – 20 – F 1 – 0

Float(s) / Application
XX 2-Character Float Code for Single (Overall) Level (Table 1)
XXX 3-Character Code for Single (Interface) Level (Table 2)
XXXX 4-Character Code for Dual (OAL+IF) Level (Table 3)

Options
0 Omitted (None) - Stop Collar Only
C225 Centering Disc 2.25" OD (Suitable for Float Codes Starting with TA, TB, & TC)
C375 Centering Disc 3.75" OD (Suitable for Float Codes Starting with TD)
S[1-4] Stilling Well + Centering Disc (Hole Spacing is 60" (Overall Level) or 8" (IF or Dual))

Process Connection Class
0 Omitted (Threaded)
1 150#
3 300#
6 600#

Process Connection Style
T Threaded, MNPT
F Flanged
W Flanged, Seal Welded

Process Connection Size
05 0.5 (Threaded Only)
20 2.0 (Threaded or Flanged)
25 2.5 (Flanged Only)
30 3.0 (Flanged Only)
35 3.5 (Flanged Only)
40 4.0 (Flanged Only)
50 5.0 (Flanged Only)
60 6.0 (Flanged Only)

Table 1 - Float Code: Single (Overall) Level

	Mat'l	316SS			
	OD	1.85	2.06	2.05	3.60
	PSIG	400	750	350	300
Min SG	0.73	**TA**	---	---	---
	0.84	---	**TB**	---	---
	0.68	---	---	**TC**	---
	0.49	---	---	---	**TD**

Table 2 - Float Code: Single (Interface) Level

Material (Parts In Contact):	316SS
Float Outside Diameter:	2.05" / 52.1mm
Max Operating Pressure:	350 PSIG / 24.1 Bar

SG Sinks Thru	0.60	0.70	0.80	0.90	1.00	1.10	1.20
SG Floats On	0.70	0.80	0.90	1.00	1.10	1.20	1.30
Float Code	TC1	TC2	TC3	TC4	TC5	TC6	TC7

Table 3 - Float Code: Dual (OAL+IF) Level

		Float Code, Interface						
		TC1	TC2	TC3	TC4	TC5	TC6	TC7
Float Code, OAL	TA	TAC1	TAC2	TAC3	TAC4	TAC5	TAC6	TAC7
	TB	TBC1	TBC2	TBC3	TBC4	TBC5	TBC6	TBC7
	TC	TCC1	TCC2	TCC3	TCC4	TCC5	TCC6	TCC7
	TD	TDC1	TDC2	TDC3	TDC4	TDC5	TDC6	TDC7

Notes:
1 - Available with Process Connection Style 'F' or 'W', for Process Connection Size '25', or larger.
2 - Stilling Well OD is either 2.5" or 4.0" (nominal). Smallest OD, larger than float OD, shall be used.
3 - Centering disc OD matched to stilling well.
4 - Not Available for float(s) with larger OD's.

Fill out specification form PB200.08 to accommodate for storage vessel geometry (required).

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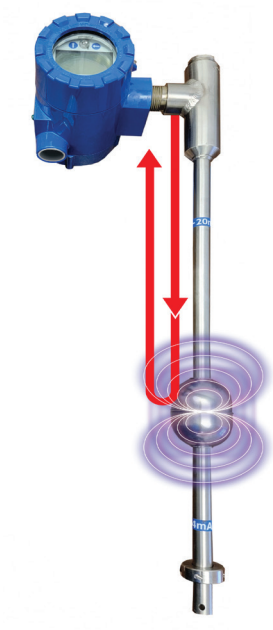
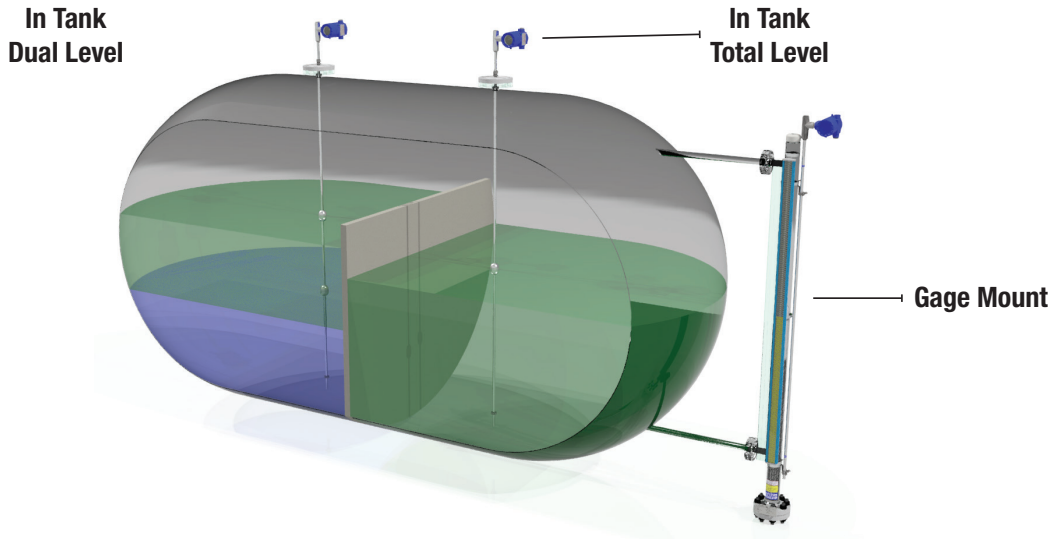


PMT Method of Operation

The on-board electronic module sends a low-power pulse down the sensing wire of the transmitter. The float, which is designed to reside precisely at the fluid level, contains internal magnets outwardly projecting a strong magnetic field. Where the float's magnetic field intersects the sensing wire, a torsional return "pulse" results, and travels back towards the electronics, where it is measured. The "time of flight" is used to determine the position of the float.

Mounting Styles

The PMT Magnetostrictive Transmitter can be mounted via direct Insertion into a storage vessel, or externally to a Magnetic Level Gage with a variety of connection types. When installed to the Penberthy Magnicator, the unique magnetic arrangement allows for almost any chamber combination, including Schedule 160, without sacrificing reliability. A highly reliable and accurate means to add continuous level measurement to almost any application.



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