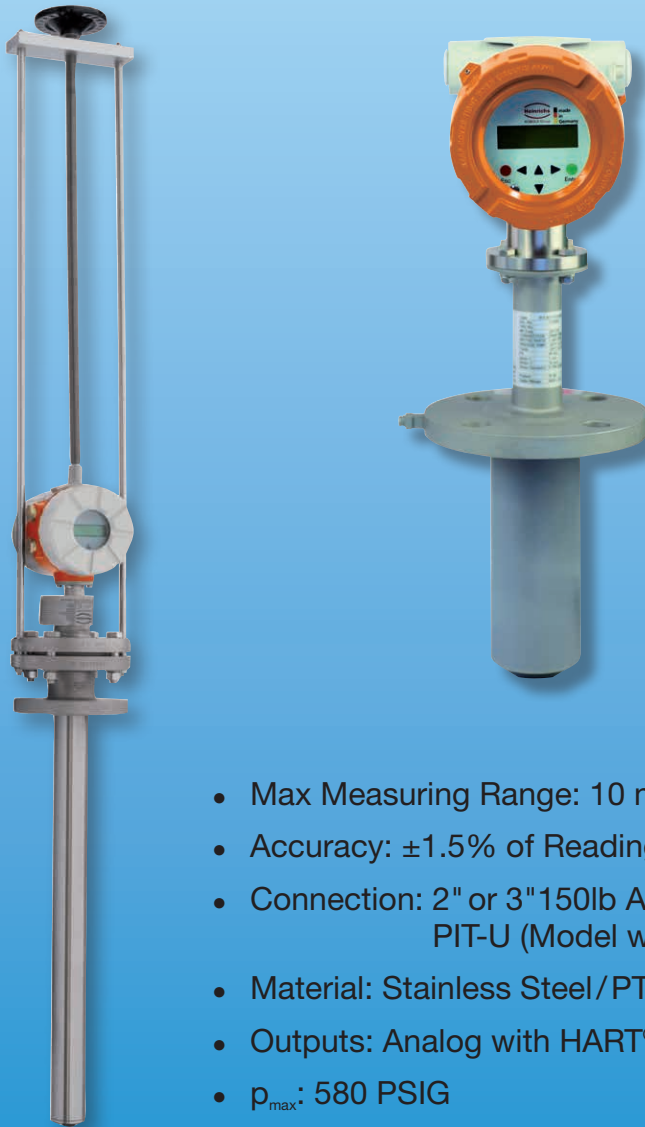


# Insertion Magnetic Inductive Flowmeter for Conductive Liquids



measuring  
•  
monitoring  
•  
analyzing

PIT



- Max Measuring Range: 10 m/s (32.8 ft/sec)
- Accuracy:  $\pm 1.5\%$  of Reading  $\pm 0.5\%$  of Full Scale
- Connection: 2" or 3" 150lb ANSI or DN 40 PN 40 for PIT-U (Model with Extraction Device)
- Material: Stainless Steel/PTFE or PFA-Coated
- Outputs: Analog with HART®, Pulse and Status
- $p_{\max}$ : 580 PSIG
- $t_{\max}$ : 284 °F



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**Description**

An electrically conductive media flowing through an oriented magnetic field, in accordance to Faraday's law of induction, will induce a voltage proportional to the media flow velocity and hence the volumetric flow. The PIT-sensor is available with an integral or remote mount transmitter. A retracting device for installing and uninstalling under process conditions is available. The magnetic-inductive PIT flow velocity sensor is used to measure or monitor the volume flow of liquids, slurries, and other electrically conductive media while minimizing pressure drop. Pressure, temperature, density, and viscosity do not affect the volume measurement. Solid particles and small gas pockets should be avoided.

**Advantages:**

- Variety of wetted materials
- Electrodes in Hastelloy®, Tantalum, and Platinum (Other materials upon request)
- Retracting device for use under process conditions

**Technical Details**

**Sensor Versions:** PIT-S (Stainless Steel/PTFE), PIT-A (PFA-Coated), PIT-U (With Extraction Device)

**Electrodes:** Hastelloy®, Tantalum, Platinum (Other Materials upon Request)

**Wetted Parts**

**Outer Sensor Tube:** Stainless Steel/PTFE (PIT-S), PFA (PIT-A), Stainless Steel/PTFE (PIT-U)

**Measuring and Grounding**

**Electrodes:** Standard: Hastelloy® C4  
Special: Tantalum, Titanium

**Non-Wetted Parts**

**Sensor Flange:** Stainless Steel

**Welding Socket and Flange:** Stainless Steel

**Sensor Neck:** Stainless Steel

**Terminal Box for Remote Mounted**

**Sensor/Transmitter:** Aluminum Pressure Casting, Painted  
**Connection:** ASME B16.5, Flanges Acc. EN 1092, DIN 2512 (Special Connections on Request)

**Nominal Pressure:** 232 PSIG, ANSI Class 150 (PIT-S)  
580 PSIG, ANSI Class 150 (PIT-A)  
232 PSIG, DN 40 (PIT-U)  
(Higher Pressures on Request)

**Process Temp:**

**Compact Version:** -4...176 °F (PIT-S, PIT-A, PIT-U)

**Remote Version:** -40...212 °F (PIT-S, PIT-U)  
-40...284 °F (PIT-A)

**Ambient Temp:** -40...140°F



**Range of Application for Sizes:**

5" ...80" (PIT-S),  
5" ...24" (PIT-A),  
5" ...80" (PIT-U)

**Accuracy:**

± 1.5 % of Reading plus  
± 0.5 % Adjusted Full Scale  
(Under Reference Conditions)

**Repeatability:**

± 0.75 % of Reading  
± 0.25 % Adjusted Full Scale  
(Under Reference Conditions)

**Conductivity:**

≥ 20 µS/cm (50 µS/cm for  
Demineralized Water)

**Communication:**

HART®

**Range Values**

**Standard:** 3.28...32.8 ft/sec (1 ... 10 m/s)  
**Optional:** 1.64...16.4 ft/sec (0.5 ... 5 m/s)

**Protection**

**Standard:** IP 67  
**Optional:** IP 68 (EN 60529)

**Transmitter**

**Mounting:** Compact or Remote  
**Power Supply:** 115/230 V<sub>AC</sub>, 24 V<sub>DC</sub>

**UMF2**

**Output Code F:** Current Output: 4-20 mA  
Pulse Output: Passive U<sub>m</sub> = 24 V<sub>DC</sub>  
Status Output: Passive U<sub>m</sub> = 24 V<sub>DC</sub>  
**Output Code G:** Current Output: 4-20 mA with HART®  
Pulse Output: Passive U<sub>m</sub> = 24 V<sub>DC</sub>  
Status Output: Passive U<sub>m</sub> = 24 V<sub>DC</sub>

**Ambient Temp:** -4...140 °F

**Approval:** General Purpose  
(ATEX Version upon Request)



**Order Details Sensor** (Example: PIT-S 206R 163 H 0 1 0 0 0K)

Model	Process Connection Flange	Sensor Length	Electrode Material	Measuring Range/Media Velocity
<p>PIT-S<sup>1)3)</sup>.. = SS Version</p> <p>PIT-A<sup>2)3)</sup>.. = PFA Coated Version</p>	<p>..206R.. = 2" ANSI Class 150 RF</p> <p>..208R.. = 3" ANSI Class150 RF</p>	<p>..163.. = 163 mm (Up to Diameters 24")</p> <p>..XXX.. = Special Length, 3 Digits in mm                      PIT-S:                      28"...48" = 263,                      56"...80" = 363                      PIT-U:                      Sensor Length must be Calculated (See Manual)</p>	<p>..H.. = Hastelloy® C-4</p> <p>..T.. = Tantalum (Only for Model PIT-A)</p> <p>..N.. = Platinum (Only for Model PIT-A)</p>	<p>..0.. = 3.28...32.8 ft/s (1...10 m/s)</p> <p>..L.. = 1.64...16.4 ft/s (0,5 - 5 m/s)</p>
<p>PIT-U<sup>1)3)4)</sup>.. = Version with Extraction Device</p>	<p>..317B.. = DN40 PN40 Form B1 DIN EN 1092-1 (Standard)</p>			

<sup>1)</sup> Without Grounding Electrode    <sup>2)</sup> With Grounding Electrode    <sup>3)</sup> Include Gasket SIL C-4400 (Klinger)  
<sup>4)</sup> Model including Installation/Extraction Device, Mounting Adaptor and Valve: Welding Socket PIT-60019917, Valve Lock PIT-EVVS and Pressure Screw Set PIT-1G or PIT-1A (See Accessories and Spare Parts for description)

**Order Details Sensor** (Continued)

Sensor Configuration	Approvals	Certificates	Special Design
<p>..1.. = Compact Transmitter, IP67</p> <p>..4.. = Remote Transmitter, IP67 (Junction Box on Sensor)</p> <p>..5.. = Remote Transmitter, IP68 (Grouted Junction Box on Sensor)</p>	<p>..0.. = Without</p>	<p>..0.. = Without</p> <p>..1<sup>2)</sup>.. = Certificate of Compliance with the Order 2.1 According to EN 10204:2004</p> <p>..2<sup>1)2)</sup>.. = Test Report 2.2 According to EN 10204:2004</p> <p>..B<sup>1)2)</sup>.. = Inspection Certificate with Material Certificate 3.1</p> <p>..C.. = Inspection Certificate with Material Certificate 3.2</p>	<p>..0K = Without</p> <p>..XK = With (Separate Specification Needed)</p>

<sup>1)</sup> Only on Model PIT-S or PIT-U  
<sup>2)</sup> No discount for each additional exact same device (Consolidated Certificate)



## Insertion Magnetic Inductive Flowmeter Model PIT

### Order Details Transmitter UMF2 (Example: UMF2- A 1 1 F0BK)

Model	Transmitter Layout/ Cable Entry	Display/ Interface Board	Power Supply	Output	Interconnecting Cable for Remote Versions
UMF2--	..A.. = Compact Transmitter IP67 / ½" NPT (f)	..1.. = Integrated	..1.. = 230 V <sub>AC</sub> (+10%, -15%), 50/60 Hz	<b>..F0BK</b> = Current Output: 4-20 mA (Passive)  Pulse Output: Passive U <sub>m</sub> = 24 V <sub>DC</sub>  Status Output: Passive U <sub>m</sub> = 24 V <sub>DC</sub>	<b>IP67</b> (Cable Prefabricated on Transmitter) ..0 = 2.5 m (Standard) ..1 = 5 m ..2 = 10 m  <b>IP67</b> (Junction Box on Transmitter) ..3 = 15 m ..4 = 20 m ..5 = 30 m ..6 = 40 m ..7 = 50 m
	..B.. = Compact Transmitter IP67 / M20x1.5				
	..C.. = Remote Transmitter IP67 Including Pipe-Wall Mounting Bracket/ ½" NPT (f)				
	..D.. = Remote Transmitter IP67 Including Pipe-Wall Mounting Bracket/ M20x1.5				
	..G.. = Remote Transmitter IP68 Including Pipe-Wall Mounting Bracket/ ½" NPT (f)				
..H.. = Remote Transmitter IP68 Including Pipe-Wall Mounting Bracket / M20x1.5		..2.. = 115 V <sub>AC</sub> (+10%, -15%), 50/60 Hz	..4.. = 24 V <sub>DC</sub> (±15%)	<b>..G0BK</b> = Analog Output: 4-20 mA with HART®  Pulse Output: Passive U <sub>m</sub> = 24 V <sub>DC</sub>  Status Output: Passive U <sub>m</sub> = 24 V <sub>DC</sub>	<b>IP68</b> (Junction Box on Transmitter) ..A = 2.5 m (Standard) ..B = 5 m ..C = 10 m ..D = 15 m ..E = 20 m ..F = 30 m ..G = 40 m ..H = 50 m

### Accessories and Spare Parts

#### Order Details Welding Socket (Item Included as Standard with PIT-U)

Order Number	Description
PIT-60018833	316-Ti SS/316L SS, 2" Class 150 RF ASME, Standard Length
PIT-60019025	316-Ti SS/316L SS, 3" Class 150 RF ASME, Standard Length
PIT-60019917	316-Ti SS/316L SS, DN65 PN 16, Standard Length, (included with base model PIT-U)

Screws on Request

#### Order Details Installation/Extraction Device (Item Included as Standard with PIT-U)

Model	Description
PIT-EVVS	Valve Lock 1.4408 (Ball Valve + Fitting Adapter), DN40 PN40 (Sensor Side) to DN65 PN 16 (Process Side, Valve)
PIT-1G	Pressure Screw Set for use with Compact Transmitter. Length = 40" or less
PIT-1A	Pressure Screw Set for use with Remote Transmitter. Length = 40" or less

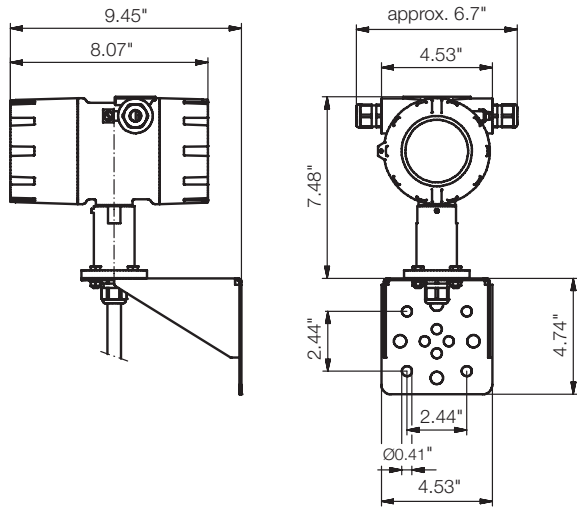




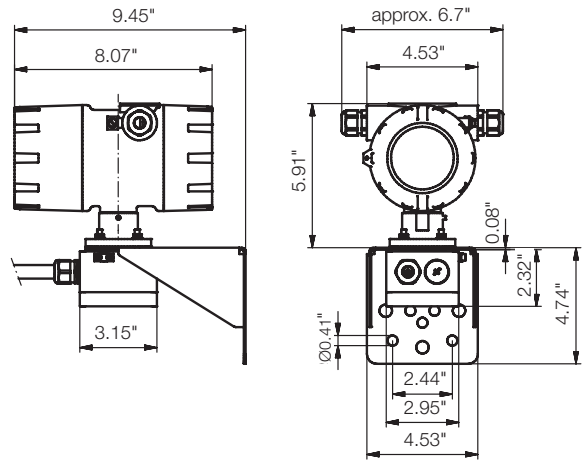
# Insertion Magnetic Inductive Flowmeter Model PIT

## Dimensions (Continued)

UMF2 - Remote Transmitter with Directly Connected Cable (For Cable Length < 10 m)



UMF2 - Remote Transmitter with Terminal Box (For Cable Length > 10 m)



UMF2 Transmitter Weight: 6.17 lbs