

Signet 2552 Magmeter – Frequently Asked Questions

Question #1: How can the 2552 Magmeter be installed into a pipe?

Answer: The 2552 Magmeter can be installed in two configurations: Standard or Hot Tap installation. The Standard installation configuration is installed by simply threading the sensor process threads directly into the pipe. The Hot Tap installation configuration is installed through a ball valve and can be installed while the pipe is full and under pressure.

Question #2: What is the largest pipe size in which the hot-tap sensor can be used?

Answer: The answer depends on the height of the “stack” which involves the weld-o-let, nipple and ball valve. Refer to Chart #1 below for the following example: If the “stack” height from the top of the pipe to the top of the hot-tap assembly is 152mm (6 in.) and the pipe size is DN500 (20 in.), the chart below indicates that a sensor with the part number 3-2552-2 should be used. On the other hand, if the “stack” height exceeds 152mm (6 in.), a longer sensor length needs to be used (and will be available in late 2007). Note that a typical “stack” height is 5.5 inches or larger.

Max. "A" Dimension		Pipe Size																					
		Inch	2	2.5	3 - 3.5	4	5	6 - 8	10	12 - 14	16	18	20	22	24	26 - 28	30 - 32	34	36 - 38	40 - 42	48	48 +	
mm	inch	DN	50	65	80 to 90	100	125	150 - 200	250	300 - 350	400	450	500	550	600	650 - 700	750 - 800	850	900 - 950	1000 - 1100	1200	1220+	
50.8	2		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
63.5	2.5		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
76.2	3		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4
88.9	3.5		1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	4
101.6	4		1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	2	4
114.3	4.5		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	4
127	5		1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	4
139.7	5.5		1	1	1	1	1	1	1	2	2	2	2	2	3	2	2	3	3	3	3	3	4
152.4	6		1	1	1	1	1	1	2	2	2	2	2	3	3	2	3	3	3	3	3	3	4
165.1	6.5		1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	4
177.8	7		1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	4
190.5	7.5		2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	4
228.6	9		2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
241.3	9.5		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
254	10		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4
266.7	10.5		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4
279.4	11		3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	4	4	4	4	4
292.1	11.5		3	3	3	3	3	3	3	3	3	3	3	4	4	3	4	4	4	4	4	4	4
304.8	12		3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4
317.5	12.5		3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4
330.2	13		3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
342.9	13.5		3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
355.6	14		3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
368.3	14.5		3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
381	15		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Legend:

1 = Use 3-2552-1, with maximum protrusion of 185mm (7.3 in.)

2 = Use 3-2552-2 with maximum protrusion of 236mm (9.3 in.)

3 = Sensor available late 2007

4 = Contact your local GF sales office for more information

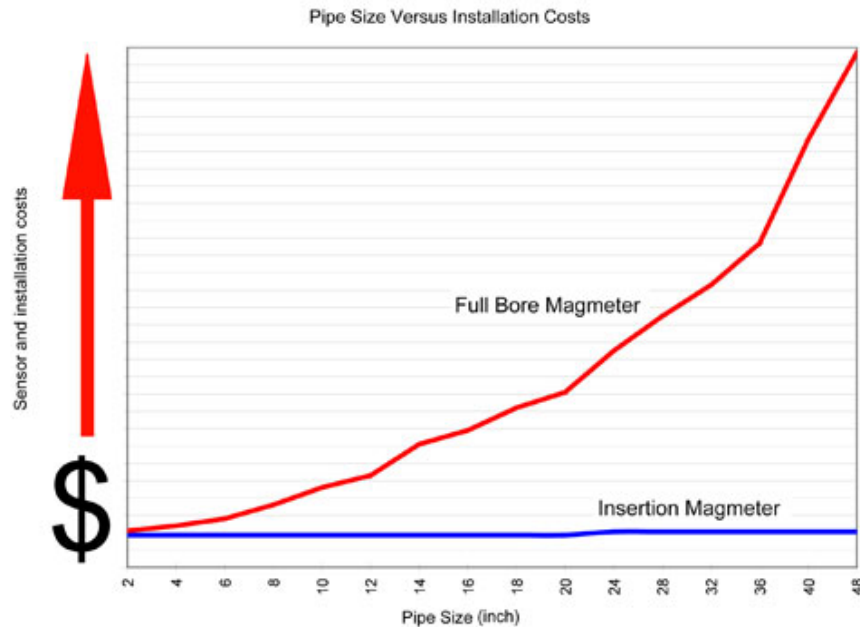
Question #3: What is the maximum pipe size in which the 2552 Magmeter can be installed?

Answer: The 2552 Magmeter is currently available for installation into up to 48 inch pipes. A version for larger pipe sizes will be available in late 2007.

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Question #4: Is an insertion magmeter a cost effective solution to a full bore magmeter?

Answer: For smaller pipe sizes, the cost of the 2552 insertion Magmeter can be comparable to other insertion and small full bore magmeters. However, as the pipe size increases, so does the cost of a full bore magmeter. The cost of the 2552 Magmeter remains constant because it adjusts to fit various pipes sizes and is, therefore, very competitively priced, especially in larger pipes. See Chart #2 below for comparisons.



Question #5: How much can my company save by installing the 2552 Magmeter in my DN500 (20 inch) pipe compared to the same size full bore magmeter?

Answer: The larger the full bore magmeter, the higher the cost compared to the Signet 2552 Insertion Magmeter. As the pipe size increases, so does the price of the full bore spool piece. In addition to sensor costs, installation costs must be taken into consideration. When a pipe is full and under pressure, a full bore magmeter can only be installed if the line is shut down and a pipe section is cut out to make room for the full bore spool piece. See Chart #2 above for price comparisons.

Question #6: The 2552 Magmeter can be hot-tapped...what does that mean?

Answer: Hot-tap is a term used for an assembly that can be installed, inserted, and removed from a full pipe without process shut-down. In the case of the 2552, the installation procedure of the hot-tap sensor would look something like this:

1. Weld a threadolet (weldolet) fitting onto the pipe; connect a nipple and install the ball valve
2. Use a special hot-tap tool to make a hole in the pipe; close off the ball valve as soon as the hot-tap tool is removed
3. Attach the sensor to the ball valve, open the valve, and insert the sensor

Question #7: Is there a limitation on mounting angles for the 2552 Magmeter?

Answer: No. However, sensors installed at the top of the pipe may experience air bubble interference. Sensors installed at the bottom of the pipe (inverted) may experience sediment build-up on the electrodes.

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Question #8: Why does the sensor have a minimum conductivity requirement of 20 μS ?

Answer: Magmeter technology is based on Faraday's Law which involves movement of a conductive liquid through a magnetic field. The sensor produces the magnetic field and relies on the conductivity of the process liquid to complete the measuring circuit. Below 20 μS , the level of conductivity gives out a weak signal and, therefore, the reading may be erratic.

Question #9: What is the Set-Up Tool and when do I need to use it for the 2552?

Answer: The set-up tool is a software program. When used in conjunction with the Signet 3-0232 Signal Converter, it allows you to customize the operational parameters of the 2552 Magmeter. The parameters that can be reset include K-factors, averaging and sensitivity, low flow cut-off, and 4 to 20 mA span.

Question #10: Can I replace a 2540 with a 2552 Magmeter?

Answer: Yes. Simply remove the 2540 paddlewheel, make sure that the hole is larger than 25mm (1.0 inch) in diameter, use an adapter to reduce the process thread size from 1.5 inches to 1.25 inches, and connect/insert the 2552 Magmeter. Please make note of the stack height of the weldolet, nipple, and ball valve before ordering the replacement 2552 Magmeter.

Question #11: What is the accuracy of the 2552 Magmeter?

Answer: Because this sensor is an insertion style sensor, accuracy can only be stated under "ideal installation" parameters. Therefore, the 2552 has the following accuracy:

< +/- 2% of measured value where the fluid is water at ambient temperature, the appropriate upstream and downstream distances are observed, the sensor is inserted at the correct depth, and there is a fully developed flow profile which is in compliance to ISO 7145-1982 (BS 1042 section 2.2)

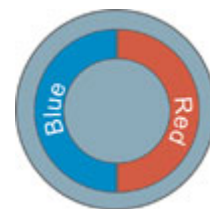
Question #12: What can interfere with the Magmeter performance?

Answer: Extremely dirty processes that coat the sensor. These include applications such as sewage waste streams with oils or lime slurries that produce deposits which build up on the sensor. Also, air bubbles, electrical noise, improper installation (not enough up or downstream pipe runs) and low conductivity may also interfere with the performance.

Question #13: The 2552 has blinking lights at the top of the sensor housing. What do they indicate?

Answer:

- No Lights: The power is off or the sensor is not connected
- Solid Blue: The power is on but there is no flow in the pipe
- Blinking Blue: Normal operation, blink rate is proportional to the flow rate
- Alternating Red-Blue: Empty pipe indication (electrodes are not wet)
- Blinking Red: System errors (electrical noise interference)
- Solid Red: Instrument error (defective electronics component)



Question #14: When does the Magmeter need to use the ground lug?

Answer: If the output is erratic or there is no output, the unit is in a noisy process liquid and should ground the Magmeter.

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Question #15: What is the allowed maximum pressure in the pipe during sensor installation or removal?

Answer: The maximum installation or removal pressure is 20.7 bar (300 psi) at 40°C (104°F)

Question #16: What tool is recommended for drilling a hole into a pipe that is full of process liquid?

Answer: A hot-tapping tool, such as one manufactured by Mueller, or similar is required for drilling a hole into a pressurized process pipe. Please note that hot-tapping requires a trained person who is qualified to use this specialized equipment.

Question #17: Can the 2552 Magmeter be used for batching applications?

Answer: Yes, just like the 2551 Magmeter. Here are a few tips that Signet recommends for this type of usage:

- Make sure that the sensor tip remains in liquid at all times.
- Purge all the air out of the piping system.
- Use the 3-0232 Set-Up Tool to change the factory settings in the unit. Go to http://www.gfsignet.com/TechTips/TT_3_batch_2551.htm for more information.