

False Empty Pipe Detection: When Can It Happen and What Should Be Done

KEY POINTS

- The Issue of determining empty pipe without false indication
- Immediate solution
- What should be done with transmitter

APPLICATION

Magnetic Flowmeter False Empty Pipe Detection

CHALLENGE

The Issue

In rare cases (<1% of installations) the Rosemount 8712C/U and Rosemount 8732C transmitters will indicate Empty Pipe when the pipe is actually full. This false indication forces the analog output to 4mA for a short period of time ranging from a few seconds to several minutes. It then returns to the normal flow rate. This does not affect the 8742 or the 8712H transmitters. The issue is most likely seen in applications with plastic or lined pipe. Commonly the electrode material is something other than stainless steel. Several things, including electrical current in the process or piping can cause the false indication. Electrical noise is most likely in areas where electrical current is part of the process such as a chlorine skid.

SOLUTION

The Immediate Solution

The empty pipe function may be disabled if you experience a sudden drop to 4mA in the Analog Output or an “Empty Pipe” indication on the display. Based on the transmitter software revision outlined in Table 1 below, the Empty Pipe function can be turned off by placing a ‘7’ in the designated digit of the Flowtube Calibration Number. Other revisions do not detect empty pipe and are not susceptible to this issue. The software revision can be determined by viewing the display after cycling power, looking at the component side of the circuit board at the socketed chip with a white label on it, or by looking at the transmitter information via LOI or hand held communicator.

If you experience this problem, turn off the empty pipe function. If the transmitter needs a software upgrade, contact Rosemount Customer Central Technical Support at 1-800-999-9307. It will be shipped with instructions for replacing the chip on-site.

TABLE 1.

	Software Revision	Place a '7' in this digit of the Flowtube calibration number.
8712C, 8712U	5.9.1-5.9.2 5.8.2-5.8.2	Upgrade to Version 5.10.2. Empty Pipe will be off at power up. EP control via LOI or 275 menu.
	5.9.3/5.8.3	6th digit
	5.9.5/5.8.5	14th digit
8732C	5.10.2	EP control via LOI or 275 menu. EP off from Factory.
	5.7.5	14th digit
	5.7.7	EP control via LOI or 275 menu. EP off from Factory.

As of June 2001, all Series 8700 Transmitters have been shipped with the empty pipe function turned off. You can turn on the empty pipe detection via the 275 and the LOI via the menu structure if it is important to your application.

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