



PTFM 6.1 achieves accurate readings in farming and irrigation applications.

Overview

In the agricultural and farming industries, knowing the water consumption is important as many times the water comes from nearby water sources and is moved to many different locations. Many local authorities will require permits or compliance for abstraction from these sources, so having accurate and reliable flow measurement is crucial for businesses to be able to provide this information. An agricultural management company known as DSG contacted Pulsar Measurement's representatives in Chile, SFS Chile, and needed to find a flow measurement solution for measuring water consumption used for farming and irrigation.

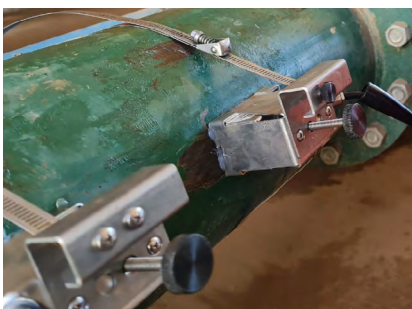
Finding a portable solution for clean and dirty water.

DSG needed to measure flow on several water lines and at different points. DSG had an existing inline flow

measurement solution, but they needed a solution that could be moved to various points to ensure each system was running smoothly. The most challenging part of this application was on a 200 mm (8 in) water intake pipe that carries clean water from a local dam. The issue was that this water does not always stay clean due to various weather conditions (heavy wind or rain) that move sediments and debris into the water and cause the clean water to have more suspended solids. The filters that are installed on these dams to reduce the suspended solids can only trap so much of the particulate and because of this, it sends the rest of the particulate into the running water course, making the water dirtier.

Since the water from the dam is usually clean, SFS Chile suggested testing the PTFM 6.1 Portable Transit-Time Flow Meter with SE16B transducers. The SE16B transducers would be the ideal solution with the PTFM 6.1 as they are recommended for 50 mm to 250 mm (2 in to 10 in) pipe sizes and are compatible with a wide range of pipe materials.

Although the application was within the specifications for the meter and transducer, their first attempt at measurement with the PTFM 6.1 resulted in no signal. Since the water occasionally runs turbid, they then decided to



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test the PDFM 5.1 Portable Doppler Flow Meter. The PDFM 5.1 uses doppler technology and is suitable for dirty water, and it didn't come as a surprise that there was a strong signal strength with this meter. Even though the PDFM 5.1 did prove to work well, SFS Chile wanted to give the PTFM 6.1 one more try. This time, however, the SE16C transducers were used as their lower operating frequency would perform well for the application.

Why transit-time instead of doppler in this case?

Doppler flow meters are used for flow measurement where there is suspended air or solids, or more simply referred to as dirt, because an acoustic pulse is reflected to the sensor from the particles or gases in the flowing liquid, allowing the PDFM 5.1 to show flow rate. The PDFM 5.1 is a great solution when needing to evaluate a system's performance, monitor or balance flow, or troubleshoot flow problems in full pipes. Since it is a portable, clamp-on solution, it is best used when a permanent flow meter is not required or to temporarily replace installed flow transmitters. It is also ideal for measuring the flow of closed pipes from 15 mm to 4.6 m (0.5 in to 15 ft) and can be installed in minutes with just a single clamp-on transducer design.

Transit-time flow meters are used for clean water applications with little or no suspended air or solids. Like the PDFM 5.1, the PTFM 6.1 is also a portable, clamp-on flow measurement solution that can be moved as needed to verify flow at different points. The SE16A, SE16B, and SE16C transducers that come with the meter allow you to measure flow on all common pipe materials with sizes ranging from 15 mm (0.5 in) to 1,200 mm (48 in). It also includes a 12-million-point data logger to store time and date-stamp flow readings from 10-second to 60-minute intervals. You can also view the convenient on-screen Flow Report where the daily total, minimum, maximum, and average flow rates are stored in a 24-hour summary for the last 365 days.

DSG's application was different in that they needed to verify the flow of water that could sometimes be clean and sometimes dirty. Having a meter that could easily be adjusted to the application's needs and still receive a strong signal was important as they wouldn't have to guess if the readings they were getting were correct or if the signal strength was sufficient. The three transducers that come with the PTFM 6.1 allow you to do just that, as you can switch out the transducers to accommodate the application or even apply a more powerful transducer like the SE16C in a range typically measured by the SE16B.

The PTFM 6.1 Transit-Time Flow Meter comes out on top!

As a great surprise, the signal from the PTFM 6.1 with the SE16C transducers was strong, and turned out to be just what DSG needed for their application. The PDFM proved there was a large concentration of suspended air or solids, but the ability of the new PTFM 6.1 to power through and maintain a good signal with accurate readings picked up on what the DSG team needed. The PTFM 6.1 is our newest upgrade to the PTFM portable transit-time flow meter, and SFS Chile agrees that this upgrade is just what the product needed! SFS Chile said, "Concerning this application, the PTFM 6.1 with the B and C transducers could measure in conditions that the PTFM 1.0 formerly could not."

After such a great trial of the PTFM 6.1, DSG decided to move forward and purchase one to continue to test the flow at various points on their dam.

More Information

PTFM 6.1: <https://pulsarmeasurement.com/ptfm-6-1>

PDFM 5.1: <https://pulsarmeasurement.com/pdfm-5-1>

SFS Chile: <https://sfschile.cl/>



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