



Secure optimal conditions



Process instrumentation for maximum growth

Irrigation

Answers for industry.

SIEMENS



Benefits

Water metering is essential for the irrigation industry. As governments turn increasing attention towards the environment and how to protect valuable natural resources, new legislation targets water consumption in order to secure a reliable supply of water in the future.

For the irrigation industry, keeping a close eye on water consumption is more important than ever. It is necessary for several reasons, such as custody transfer, leakage protection, distribution purposes and much more.

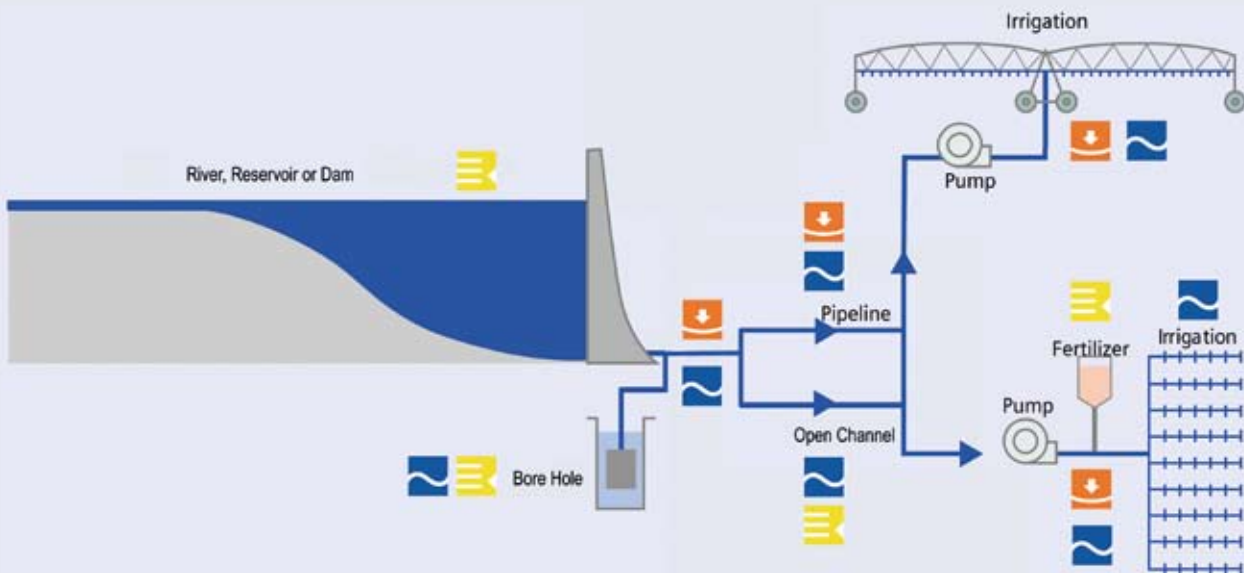
As a dependable partner in the irrigation industry, Siemens has developed a broad range of instrumentation for precise measurements of flow, level and pressure.

By using Siemens instrumentation solutions, you can easily optimize the daily management of the irrigation cycle or district water supply. Efficient and reliable metering has the potential to provide cost benefits as processes are optimized and water use and waste are reduced.

- **Reliable.** Siemens instruments are truly fit-and-forget solutions for long term reliable measurement of our valuable water resource.
- **Single supplier.** With multiple technologies and solutions that meet all the needs of the irrigation industry, Siemens is a one-stop-shop for metering instrumentation.
- **Low total cost of ownership.** An investment in process instrumentation from Siemens pays off in the long run, as each meter is designed for longevity, precision and reliability.
- **Interface options.** Siemens meters have easy-to-use interface options that allow connection to third party GSM and satellite solutions.
- **Low flow metering.** Unlike mechanical meters that typically measure very low flow inaccurately or not at all; electronic meters from Siemens can easily handle such flow rates.
- **Siemens has global presence.** With offices and production spread around the world, we provide local sales and services close to where you are.

One supplier is all you need

Designed for ease of use and lifelong reliability an investment in Siemens instrumentation equipment is an investment in the future.



Level



Pressure



Flow

As legislation constantly targets water consumption and the protection of valuable natural resources, knowing how much water is consumed is imperative for the district water and irrigation industries.

Efficient metering demand reliable products that do not get in the way of daily business. Customers want solutions that are easy to install and use.

Whether a need exists at the reservoir, field, or residential level, Siemens has an efficient and reliable solution that ensures precise metering with direct impact on your bottom line.

With our complete range of instrumentation devices including electromagnetic flow, ultrasonic flow, open channel flow, ultrasonic level and pressure technologies, Siemens has an answer for all of your irrigation needs.

Regardless of pipe type or size and the number of devices, we offer instruments for a wide range of applications, projects and installations throughout your irrigation network, including:

- large intake pipes
- distribution pipes
- individual pumps
- pumping stations
- on-farm metering

Contact your local sales office to see the difference Siemens instrumentation equipment makes.

Water management made easy



SITRANS F M MAG 8000

Battery or mains powered electromagnetic flowmeter. Specially engineered for stand-alone applications, including revenue metering and irrigation.

SITRANS F M MAG 5100 W

Electromagnetic pulsed sensor for all water and wastewater applications. Increased low flow accuracy for water leakage detection.

SITRANS FUS880

Battery or mains powered meter with battery as an optional backup. Underground (buried) installation with a remote readout display possible.

SITRANS F US SONOKIT

Ultrasonic retrofit flowmeter available in a robust enclosure that can withstand rough environments. Wetted transducers assure superior accuracy and performance on steel and concrete pipes.

SITRANS FUP1010

Clamp-on ultrasonic flowmeter solution offered as a standard portable or rugged submersible portable enclosure. It is often

used as part of infiltration and inflow field studies and for verification of new or existing irrigation installations.

SITRANS FUS1020

Basic but versatile clamp-on ultrasonic flowmeter. Compact design for easy installation. Available in single or dual channel configurations.

SITRANS Probe LU

2-wire loop powered ultrasonic transmitter for level, volume and flow monitoring of liquids in open channels.

HydroRanger 200

Ultrasonic level controller for up to six pumps. Provides control, differential control and open channel flow monitoring.

SITRANS P Series Z and ZD

Series Z is a compact, single range transmitter for measuring pressure with accurate monitoring of feed pump and pressure pump control. As an extra feature, the ZD series also has an integral LCD display and a settable span via local push buttons.




Ease of use was decisive for irrigation operators

When the National Water Commission of Mexico set out to find a reliable flowmeter manufacturer to supply equipment for Celaya, Guanajuato, one of the country's most important agricultural regions one feature was a deal breaker: the meter had to be easy to use. After various evaluations and tests including small training courses, product presentations and the completion of a validation

program, it was found that the MAG 8000 was just that. Another deciding factor was the data logger which can be used to check and monitor the actual water consumption and to easily create usage reports and statistics. In Celaya, the MAG 8000 is primarily used to measure the water consumed by individual farmers through pipes typically ranging from DN 80 to 250 (3" to 10") in size.



Flow




			
Product name	SITRANS F M MAG 8000	SITRANS F M MAG 5100 W	SITRANS FUS880
Product category	Electromagnetic	Electromagnetic	Ultrasonic in-line
Sensor Size	DN 25 to 600 (1" to 24")	DN 25 to 1200 (1" to 48")	DN 200 to 1200 (8" to 48")
Accuracy	±0.4% of flow rate	±0.25% of flow rate	±0.5-1.5% of flow rate
Power Supply	Mains powered Battery powered	12-24 V AC/DC 115-230 V AC	Mains powered Battery powered
Enclosure Rating	IP68 (NEMA 6P)	IP67 (NEMA 4x/6) IP68 (NEMA 6P)	IP67 (NEMA 4X/6)
Data Output	2 pulse MODBUS RTU	1 current 1 digital 1 relay	2 pulse MODBUS RTU
Sensor/Pipe Material	Steel Concrete PVC	Steel Concrete PVC	PVC Concrete
Approvals	All water approvals OIML R49 MI-001	All water approvals OIML R49 MI-001	n/a

Simple and quick installation with FUS880

500 kilometers (310 miles) South West of Cairns, Australia, water from an abandoned mining dam is transported to farmers for irrigation purposes. With a water supply in such a remote location, a stable and reliable water meter with an internal battery is vital because maintenance is expensive and time-consuming. After reviewing a variety of options it was decided to install a two-

track FUS880 retrofit flowmeter. The installation was considered unique in that it did not involve cutting and welding the pipeline to install the transducers. This option was considered hazardous because of the dry conditions. Instead, they were mounted onto the DN 600 (24") steel pipe by gluing them on with a special composite material.



		
SITRANS F US SONOKIT	SITRANS FUP1010	SITRANS FUS1020
Ultrasonic in-line	Ultrasonic clamp-on	Ultrasonic clamp-on
DN 200 to 4000 (8" to 160")	DN 6 to 9000 (1/4" to 360")	DN 6 to 9000 (1/4" to 360")
Typically ±0.5-1.5% of flow rate	±0.5-2% of flow rate	±0.5-1% of flow rate
24 V AC/DC 110-230 V AC	Battery powered	9 -36 V DC 100-240 V AC
IP67 (NEMA 6) IP68 (NEMA 6X)	IP67 (NEMA 4X/6) IP40 (NEMA 1)	IP65 (NEMA 4)
HART Profibus PA	2 current 2 voltage 2 temperature	2 current 1-2 relays (optional)
Steel Concrete PVC	All materials	All materials
n/a	UL ULc CE	UL ULc

Reliability and accuracy behind Siemens choice

Reliability with good accuracy, local after-sales support and free on-site product training proved convincing arguments to choose Siemens instrumentation devices for a comprehensive pump station renovation project by the East Columbia Basin Irrigation District in the state of Washington, USA. The task included the construction of new pump stations and making existing ones more

efficient, modernizing pipe distribution lines, and improving canal levels and open channel flows. A combination of MAG 5100, MAG 6000, MAG 8000 flowmeters and HydroRanger 200 level controllers were installed to monitor the water supply in the 152,000 acre district that services small to large farms as well as residential customers.



Level and Pressure



SITRANS Probe LU	HydroRanger 200	SITRANS P Series Z and ZD
Ultrasonic level	Open channel flow	Pressure
2" NPT and 2" BSPT	n/a	1/2" FNPT
± 0.15% of range	±0.25 of range	Typically ±0.25%
24 V DC	12-30 V DC 100-230 V AC	10-36 V DC
IP67 (NEMA 6) IP68 (NEMA 6)	IP54 (NEMA 3) panel version IP65 (NEMA 4X) wall version	IP65 (NEMA 4X)
HART, 4-20 mA PROFIBUS PA	Up to 6 relays 4-20 mA Modbus RTU	2 wire, 4 to 20 mA 3 wire, 0 to 10 volts
PVDF ETFE	Kynar	316 stainless steel Ceramic diaphragm
Intrinsically safe Non-incendive General purpose	Class 1 Div 1 ATEX Zone 1	n/a

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