

Data Sheet

Overview

The BayDrive is a remotely operated farm ditch gate actuator that makes surface irrigation less labor-intensive and more flexible so you can improve yields and reduce water use. Now you have the freedom to irrigate without someone having to be on site and the peace of mind that comes with being able to get notified or make changes remotely.

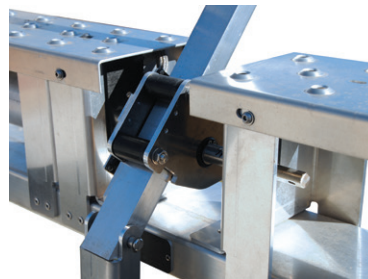
BayDrives are operated remotely using flexible software which features easy to use tools for monitoring crop water demand and managing irrigation. And because the software is web based, BayDrives can be operated from a smartphone or any device with an internet connection.

Irrigation sequences can be set-up to precisely time the opening and closing of a series of BayDrives. Precisely timed operation combined with the BayDrive's ability to actuate high-flow gates up to 10 feet wide makes it an essential component of a high-performance surface irrigation system.

The BayDrive has been designed from the ground up to automate surface irrigation. It combines robust engineering with integrated solar power supply and radio communications in a single unit for reliable operation year after year.

Gate control technology

The BayDrive uses the same robust gate control technology used in Rubicon's TCC® products, including the FlumeGate™. The BayDrive arms are driven by Rubicon's CableDrive™ system. Designed for high duty cycle operation, CableDrive provides positive drive in both the raise and lower directions, enabling the gate to open and close in high flow, high head pressure environments.



Robust CableDrive mechanism.

Remote operation

The BayDrive's secure pole mounted housing contains the electronics, high-capacity power system and wireless communications for remote operation. Each BayDrive communicates through a FarmConnect Gateway* installed in the field which is connected to a cellular network and then the internet, enabling remote management using FarmConnect Software*. GPS positioning ensures each BayDrive is accurately displayed on a Google Maps interface making remote opening, closing, programming and monitoring simple.



Remote operation using web-based software.

*Sold separately.



Highlights

- Ideal for actuating rubber flap gates used as:
 - check gates to control flows in farm ditch delivery systems
 - outlets in head ditches for applying water to fields
- Remote operation of gates from 3ft to 10ft wide
- Engineered and manufactured for long life
- Solar power supply for low cost operation
- Integrated GPS receiver for fast set-up and easy mapping
- Email and SMS text alerts to track irrigation progress

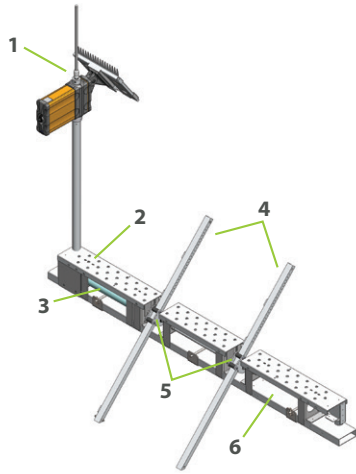
A FarmConnect® product

The BayDrive is part of the FarmConnect product range for farmers. FarmConnect's modular hardware and software enables precisely-timed application of water to crops using high-flow, high-performance surface irrigation. With FarmConnect, farmers can grow higher-value crops using less labor, water and energy.



BayDrive™ components

1. Housing with radio, antenna and solar panel
2. Top cover plate
3. Motor
4. Actuator arms
5. CableDrive mechanisms
6. Base beam



Typical applications and installations



Ditch check

Box culvert

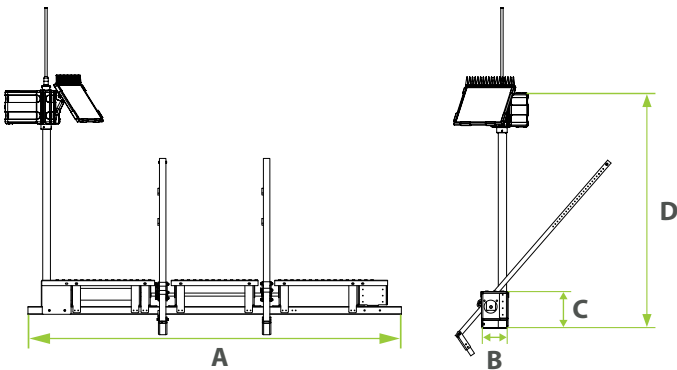
Ditch-to-pipe

Bay outlet

BayDrive™ sizes and dimensions

Model	Maximum gate size		A	B	C	D	Arms	Weight
	width (ft)	depth (in)	in	in	in	in	no.	lbs
3ft BayDrive	3	27	49.0	6.3	8.7	56.5	1	66
4ft BayDrive	4	24	61.8	6.3	8.7	56.5	1	73
6ft BayDrive	6	19	95.5	6.3	8.5	56.5	2	93
10ft BayDrive	10	15	Contact Rubicon for availability					

Contact Rubicon for additional sizes.



BayDrive™ specifications

General	
Control	Local via toggle switch or remote via FarmConnect software (sold separately)
Drive mechanism	CableDrive™ stainless steel wire rope and cable drum assembly
Electronics	Power management and control technology housed in the radio unit. Each unit passes a 12hr heat soak pre-stress and 100% functional test.
Typical weight	Refer to the BayDrive sizes and dimensions table
Motor	12V DC with electrical brake
Typical stroke time	Less than 1 minute
Actuation options	12V DC powered (solar)
Event-driven operation	Can be programmed to open and close based on sensor inputs, including ditch water level information from Rubicon's MicronLevel® sensor (sold separately)
Material	
Top cover plates, base beam, actuator arm, housing pole	Structural grade aluminum
Hardware, shafts	Structural grade stainless steel
Power	
Power supply	12V DC self-contained battery charged from solar panel
Solar panel	10W monocrystalline
Battery	(1) 12V sealed gel lead acid with temperature sensor (~5yr life, provides ~5 days of operation without solar power)
Communications	
Protocols	Modbus, analog/digital I/Os, USB
Data communications	ZigBee (international wireless communication standard)
ZigBee radio frequency	2.4GHz
Gateway (sold separately)	A FarmConnect Gateway provides the interface to cellular networks and can link up to 120 BayDrives. Additional gateways enable unlimited expansion.
Transmission range	0.6 mile (1km) between BayDrives. A BayDrive can reach the Gateway over much larger distances by passing data through intermediate BayDrives (called self-meshing).
Environmental	
Operating temp	14°F to 140°F (-10°C to 60°C)
Operating humidity	0% to 100%
Water temperature	33.8°F to 122°F (1°C to 50°C)

Specifications subject to change.

About Rubicon Water

Rubicon Water delivers advanced technology that optimizes gravity-fed irrigation, providing unprecedented levels of operational efficiency and control, increasing water availability and improving farmers' lives. Founded in 1995, Rubicon has more than 15,000 gates installed in TCC systems in 10 countries.



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