sirius

FUSION 2

WE JUST

PUMPED UP

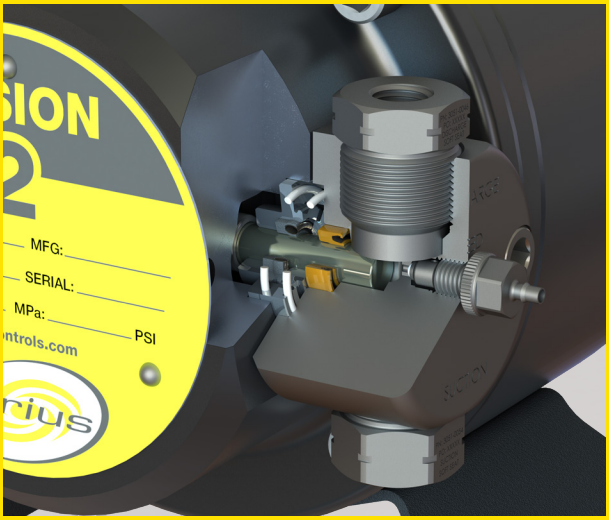
OUR GAME

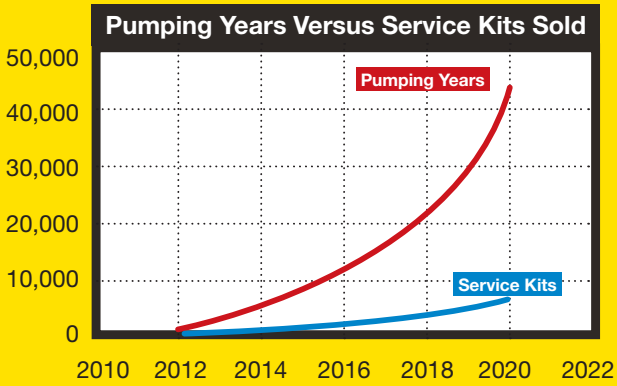
LOWEST COST OF OWNERSHIP

ENGINEERED FOR LONG LIFE AND LOW MAINTENANCE

(FIVE TIMES THE LIFE OF THE ORIGINAL FUSION TECHNOLOGY)

Unique dual-seal technology overcomes the many shortcomings of adjustable packing designs. Maintenance is greatly reduced and chemical capability improved.



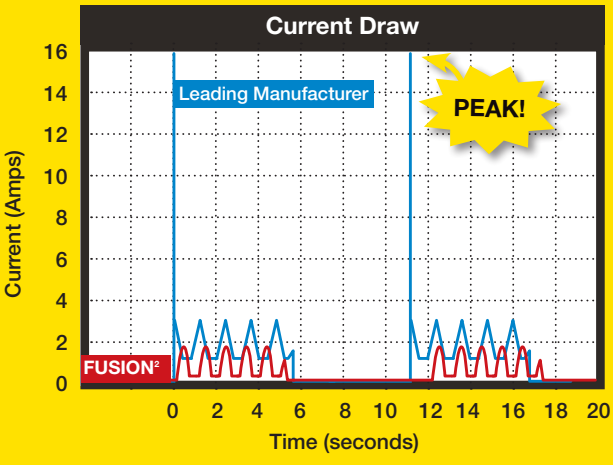


OVER 4 PUMPING YEARS PER REBUILD!
(ON AVERAGE)

SIMPLEST AND FASTEST REBUILD AVAILABLE

CARTRIDGE VALVES

NO SKILL REQUIRED



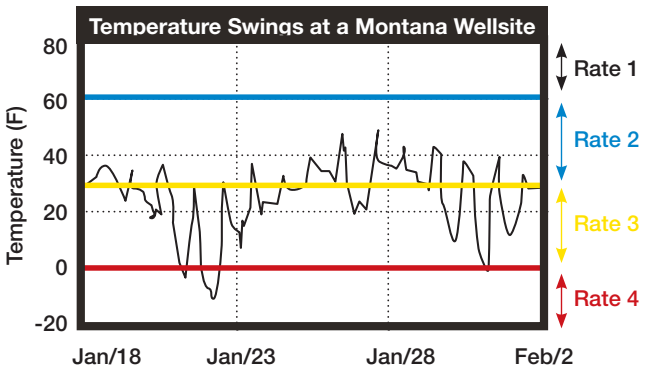
NO MORE MOTOR BRUSH FAILURES!

REDUCED SYSTEM MAINTENANCE AND REPAIR

The brushless, soft starting motor eliminates inrush currents which reduces mechanical stresses and extends motor, pump, and battery life. The Fusion² has 1/10 the start-up current of the leading pump provider, with 500,000 fewer current spikes per year

AUTOMATION AND CONTROLS

LIKE NO OTHER PUMP

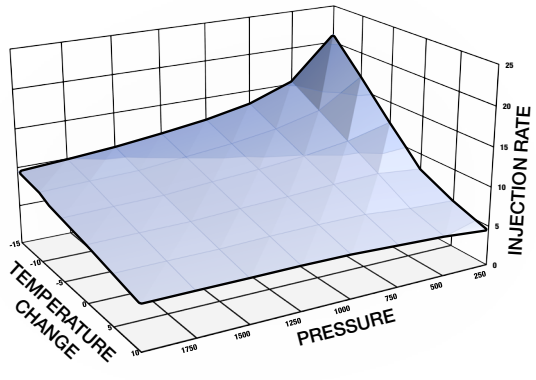


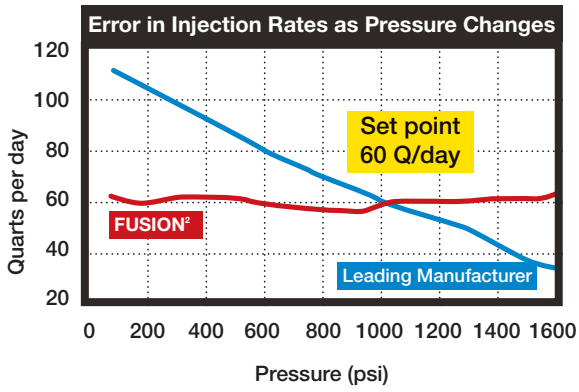
SIMPLE CONTROL

As an example, simple control can be used to conserve methanol on warmer winter days while preventing freeze ups on the coldest nights with Fusion^2's 4-zone temperature control. Flow rates automatically adapt to recurring temperature swings.

ADVANCED CONTROL

The Fusion^2 controller accepts many inputs for pump control, which can be as straightforward as a proportional rate control from an external sensor. A more sophisticated approach would be to use an equation driven hydrate curve analyses; such as, the Hammerschmidt or Gas Gravity method, along with multiple sensor inputs, to determine the variable injection rate.





AUTONOMOUS CONTROL

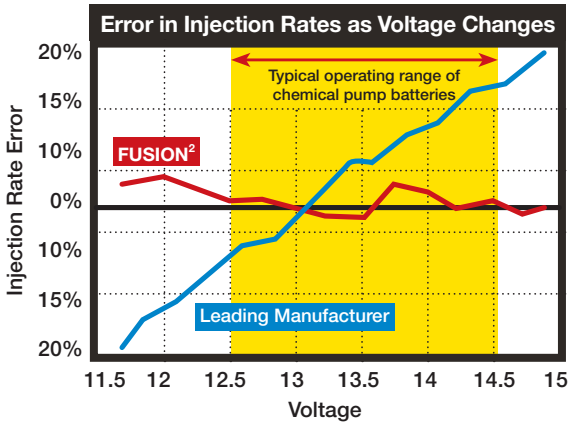
VARYING PROCESS PRESSURE CAN SIGNIFICANTLY AFFECT THE ACCURACY OF CHEMICAL INJECTED

Fusion^2 compensates for process pressure fluctuations using patented pressure sensing technology to maintain a steady flow rate. The graph to the left compares Fusion^2's performance against that of a leading pump manufacturers.

VOLTAGE FLUCTUATIONS AFFECT INJECTION RATE

Solar powered injection system will experience daily battery voltage fluctuation due to day/night cycles, as well as longer term voltage fluctuations with changing seasons, weather and cloud cover.

A typical pump's injection rate varies directly with voltage and under normal weather conditions can generate an error exceeding 25%. Fusion^2 keeps the rate consistent using the patent pending voltage compensation feature.

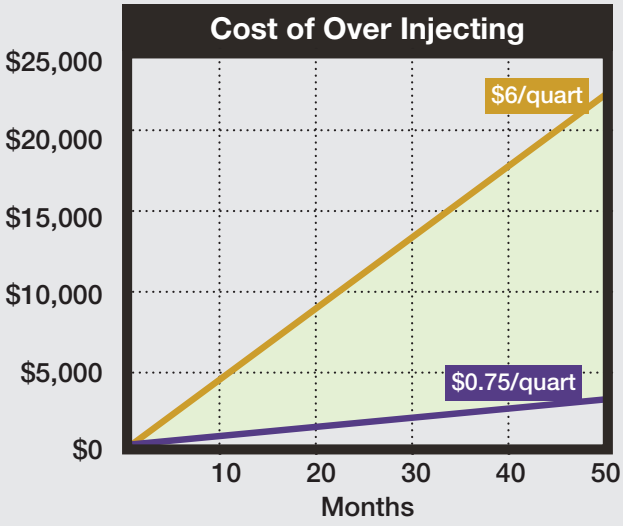


SAVE & MONEY

STOP OVER INJECTING

When you consider the cost of ownership of low dollar inaccurate pumps they are generally very expensive.

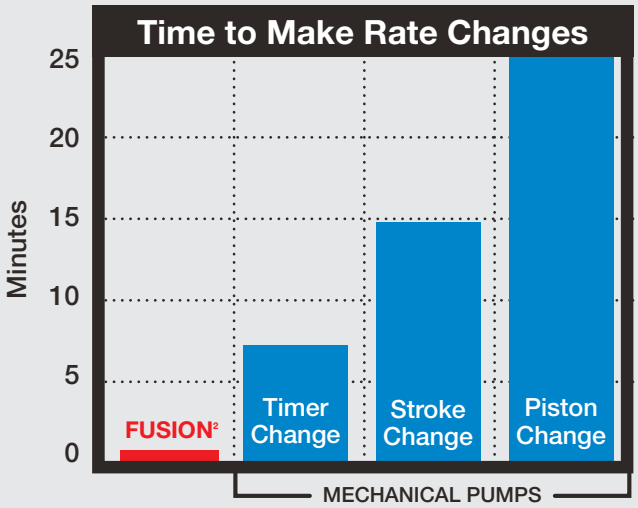
Inaccurate pumps force operators to over inject chemical by an estimated 20% to ensure that minimum safe injection rates are met. Using the Fusion² will provide the confidence to dial back the over-injection. Even at relatively low flow rates and chemical costs, Fusion²'s payback period is typically less than one year, not including the additional benefits.



SAVE & MONEY

REDUCE TIME ON SITE

- No mechanical adjustments are necessary
- A single button is used to make rate changes
- Self guided pump calibration



SAVE & MONEY

LOWER INVENTORY COUNT

The Fusion²'s wide operating range and AC/DC power capabilities reduces the need to carry inventory for multiple pump models. Maintenance is made simple with minimal need to carry multiple pistons, seals, and fluid ends.

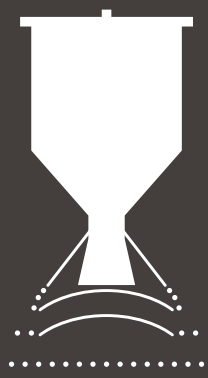
The Fusion²'s

CONTINUOUS INJECTION RATES

maximize

ATOMIZER EFFICIENCY

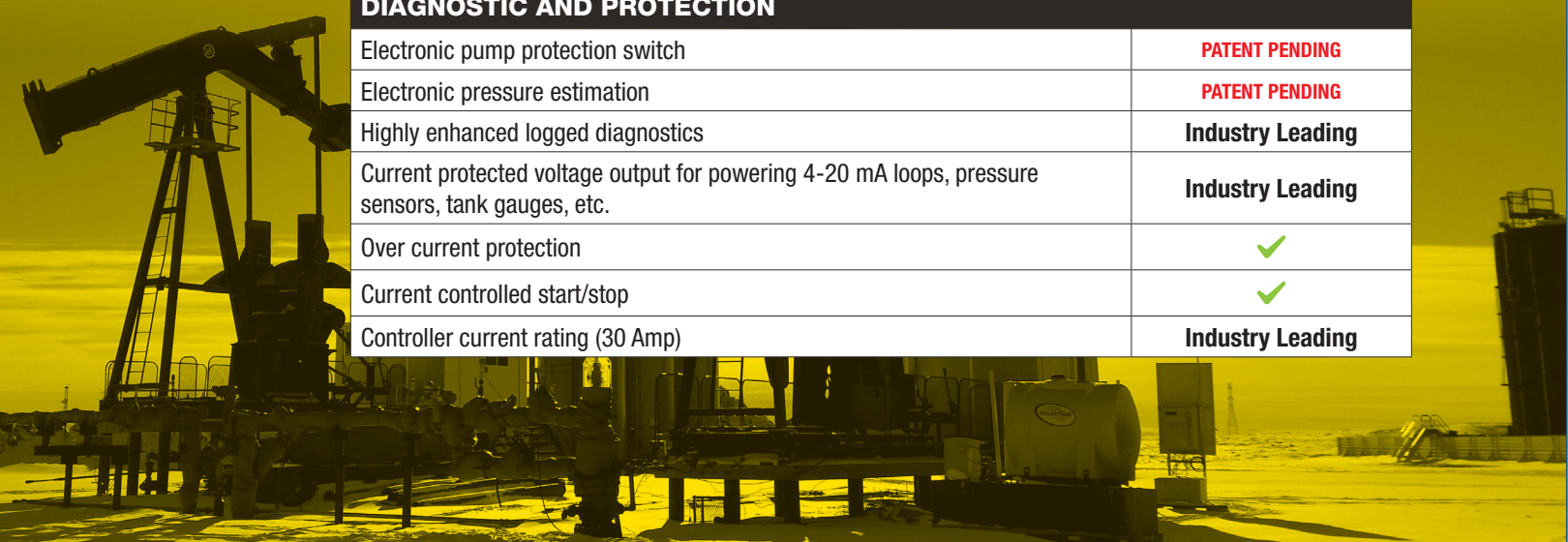
Proper Operation



Inconsistent Rate

FUSION2™ FEATURES

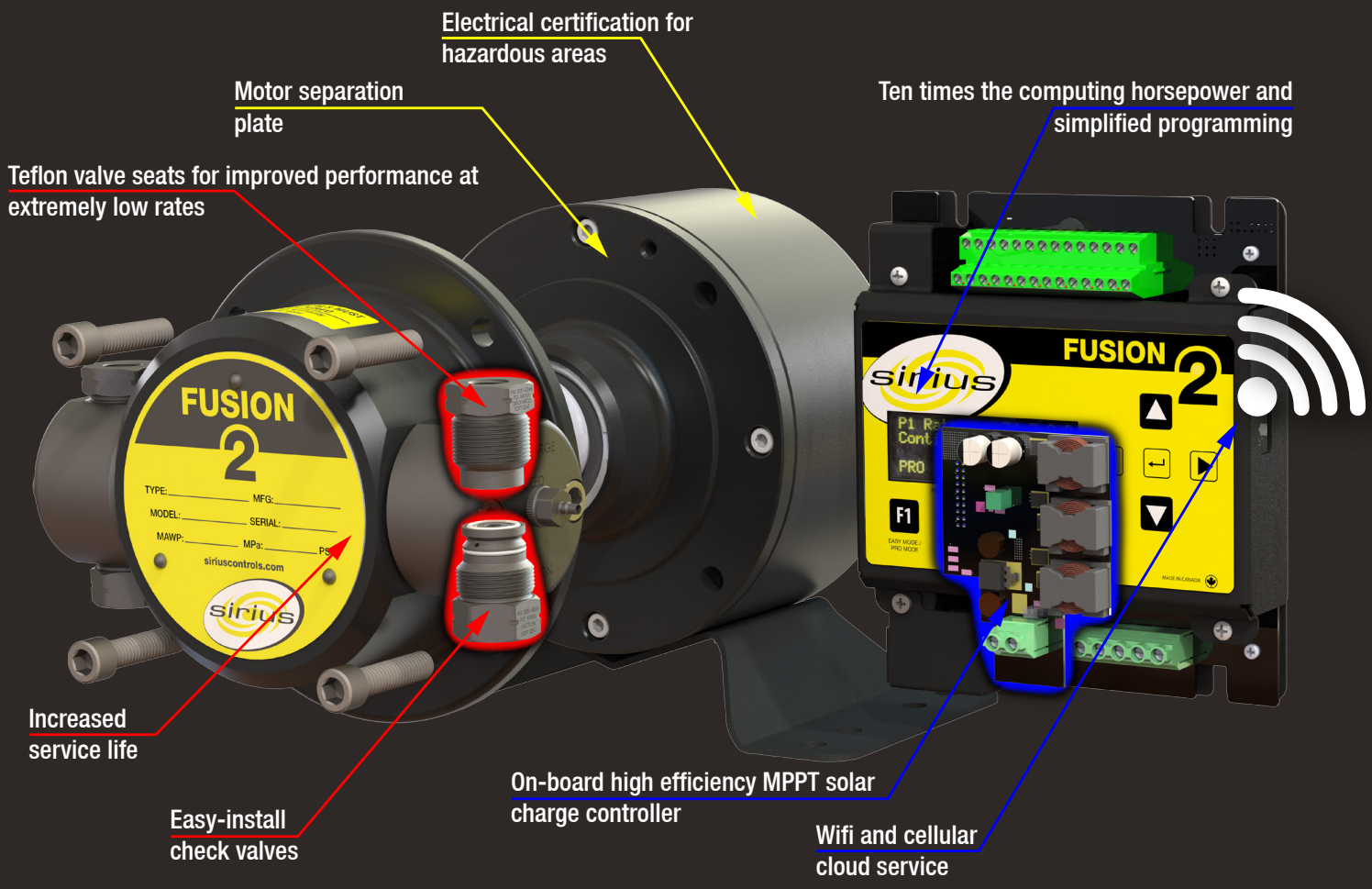
CLIENT VALUE	
On board MPPT high efficiency solar controller	**Industry Leading**
Rate control directly in volume per day (Q/day, L/day, G/day)	✓
Injection Totalizer used to verify volume, carbon credits etc.	✓
Ability to calibrate to volume per day	**Industry Leading**
Automatically adjusts flow rate for pressure fluctuations	**PATENT PENDING**
Batch injection	✓
Four temperature zones for varying rate control	**Industry Leading**
Dual flow rate control	✓
Independent multipoint rate control, up to 15 points	**Industry Leading**
Automatically compensates for voltage changes due to day night variation etc.	**PATENT PENDING**
One button easy rate change	✓
Real time flow rate measurement (with optional closed loop)	**Industry Leading**
In house firmware development and rapid customization	**Industry Leading**
Power Source is either AC or DC...same pump, motor, and controller	**Industry Leading**
Continuous and intermittent variable speed	**Industry Leading**
Auto transition from continuous injection to duty cycle rate control	**PATENTED**
Turndown Ratio 1000:1	**Industry Leading**
Area classification: General Purpose and Hazardous Location Rated	**Industry Leading**
Operating temperature -40°F (-40°C) to 131°F (55°C)	**Industry Leading**
COMMUNICATION AND CONTROL	
Wifi and cellular cloud service	**Industry Leading**
MODBUS communications, RS-485	✓
4-20 mA rate control	✓
Individual point enable/disable	✓
Three analog inputs for temperature	**Industry Leading**
Three analog inputs for pressure, tank level, etc	**Industry Leading**
Four digital inputs for injection enable	**Industry Leading**
Four digital inputs for batching	**Industry Leading**
Sixteen digital outputs for pump on, low battery, flow control	**Industry Leading**
Support for MODBUS TCP	✓
Communications watchdog (disable on comm fail)	✓
Flow verification alarm, tank level, low power etc.	**Industry Leading**
DIAGNOSTIC AND PROTECTION	
Electronic pump protection switch	**PATENT PENDING**
Electronic pressure estimation	**PATENT PENDING**
Highly enhanced logged diagnostics	**Industry Leading**
Current protected voltage output for powering 4-20 mA loops, pressure sensors, tank gauges, etc.	**Industry Leading**
Over current protection	✓
Current controlled start/stop	✓
Controller current rating (30 Amp)	**Industry Leading**



The Fusion2 is the industry's first injection system with

ONE BASIC PRODUCT ARCHITECTURE

that services both **AC** and **DC** solar powered sites, as well as **GENERAL PURPOSE** and **HAZARDOUS ENVIRONMENTS.** Users can move from site to site and always be familiar with the operation of the product.



PUMP TYPE	INJECTION RANGE	MAXIMUM OPERATING PRESSURE
Fusion² 100 (NEW)	0 – 1,300 Q/day (1,230 L/day)	1,000 psi (0.7 MPa)
Fusion² 150	0 – 100 Q/day (95 L/day)	1,500 psi (10.5 MPa)
Fusion² 300	0 – 360 Q/day (340 L/day)	3,000 psi (21 MPa)
Fusion² 500	0 – 240 Q/day (227 L/day)	5,000 psi (35 MPa

CONTACT

Contact Sirius for all your chemical injection requirements at **sales@siriuscontrols.com**
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www.siriuscontrols.com

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