H2O | SPCS
Smart Pump Control System
H2O-TECHNOLOGIES.COM

Saves money, extends equipment life and meets all health code requirements for flow.

SPCS EkoFlex

ENERGY SAVING SOLUTIONS

For Pool and Fountain Circulation Pumps

Offering the most common required and specified features for circulation pump applications in commercial and educational swimming pools as well as fountains, splash pads and water features; *SPCS EkoFlex* is ideally suited for applications involving:

- Swimming Pool Circulation Pumps
- Splash Pad Circulation Pumps
- Water Slide Pumps
- Decorative Fountains
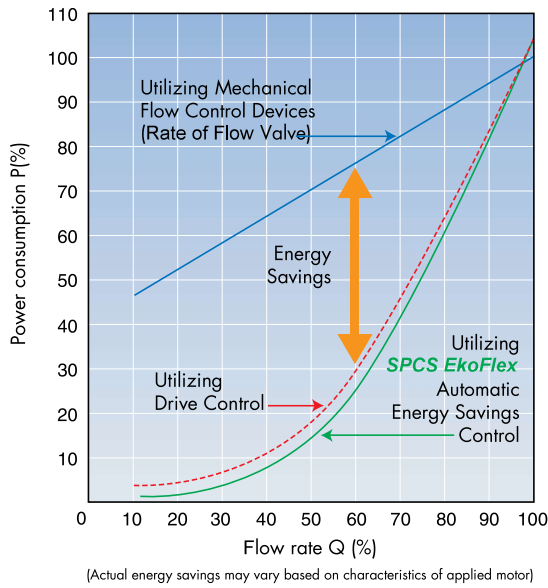- Spas
- Filtration
- Pressure Boosting

SPCS EkoFlex Features

- NEMA 1 Steel Enclosure
- 3 Contactor Full ByPass
- Control Transformer with Fused Protection
- Integrated Motor Branch Circuit Protection, up to 100kA Short Circuit Current Rated Packages
- 3% Line Reactor for Reducing Harmonics
- Soft-Switching PWM Drive Output
- Catch-a-spinning Motor Functionality
- Enhanced Automatic Energy Savings, Reduces Power Consumption of Both the Motor and Drive
- Simple Construction Leads to Ease of Maintenance
- LCD and LED Keypad, also Functions as a Copy Unit
- 110v Motor Running Output
- Power Monitoring from the Drive's Keypad or Software
- Built-in E-Stop Protection
- Communication Protocols: Modbus RTU, Metasys® N2, & APOGEE® FLN are built-in the Drive
- PC Software for Drive Set-Up & Monitoring

Lower Energy Bills & CO_2 Emissions

Utilizing Mechanical
Flow Control Devices
(Rate of Flow Valve)

Energy
Savings

Utilizing
SPCS EkoFlex
Automatic
Energy Savings
Control

Utilizing
Drive Control

Power consumption P(%)

Flow rate Q (%)

(Actual energy savings may vary based on characteristics of applied motor)

Energy savings is achieved by matching the pump performance to the filter load as it dynamically changes during the filter cycle. By applying the Affinity Laws for centrifugal loads, we can calculate the cost of operation of a conventional starting method and operation with an SPCS EkoFlex

Energy Savings Example:
Replacing a valve controlled pump system with an across the line motor starter to an SPCS EkoFlex system while maintaining the Health Department mandated flow for 8,736 hrs/yr, and operated by a 25Hp motor.

Energy required by using valve control: 168,287kWh/yr
Energy required by using drive control: 100,396kWh/yr
Energy Savings by using the SPCS EkoFlex: **67,890kWh/yr**

Energy savings achieved by using drives can correlate to reducing the amount of carbon dioxide (CO_2) emitted into the environment from power generation plants.

CO_2 Emission Reduction Example:
Using the Energy Savings previously calculated at 67,890kWh/yr and a CO_2 Emission factor of 1.36lbs/kWh[1]

Estimated reduction of CO_2 emissions: 92,330lbs/yr

Valve Control   **Drive Control**

CO_2 Emission Reduction
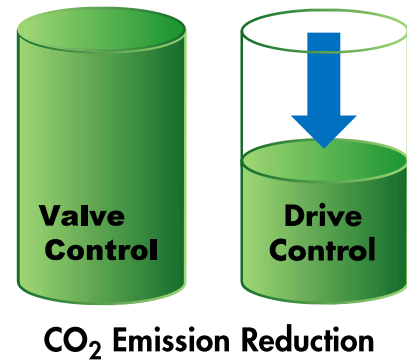
Reduce Maintenance Cost & Ambient Noise

Drives inherently soft-start the motor, reducing wear and tear on the attached mechanical components, resulting in reduced maintenance.

Pool circulation pumps controlled by valves can produce undesirable ambient noise. A reduction in ambient noise can be accomplished by applying the *SPCS EcoFlex* drive system.

	SPCS EF
Ratings	
Horsepower & Voltage	2 - 60Hp, 208/230V 2 - 200Hp, 460V
NEMA Type 1 Enclosure	S
NEMA Type 3R Enclosure	O
Ambient Temperature	-10° to 40° C
Features	
Input Disconnect & Branch Circuit Protection	Standard Circuit Breaker
Electronically & Mechanically Interlocked Drive and ByPass Conactors	S
Motor Overload Realy	Class 20
DC Link	Standard
3% Line Reactor	S
5% Line Reactor	O
Control Power Transformer with Fuses	S
Control Power Transformer with Mini Circuit Breakers	N/A
Power On Indication	S
Drive Run Indication	S
Energy Efficient Mode Indication	N/A
Fault Indication	S
ByPass Run Indication	S
Drive-Off Bypass Selector Switch	S
BecSys- Off-Bypass Selector Switch	N/A
Isolate-Normal Selector Switch	S
110v Powered Interlock Output	S
Run Command Input	S
E-Stop	S
Analog Speed Input	4-20mA
Automatic Bypass with low voltage	O
Access drive via Internet	O
Communication Protocols	
Modbus RTU	S
Metasys® N2	S
APOGEE® FLN (P1)	O
LonWorks®	O
BACnet	O
Profibus DP	O
DeviceNet	O
Ethernet	O
Codes & Standards	
UL & cUL	S
Applicable NEMA & NFPA Standards	S

S = Provided As Standard

O = Optional

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LonWorks is a registered trademark of Echelon Corporation.

Metasys is a registered trademark of Johnson Controls, Inc.