EcoFlow®

A ThermOmegaTech® product

THE PROBLEM

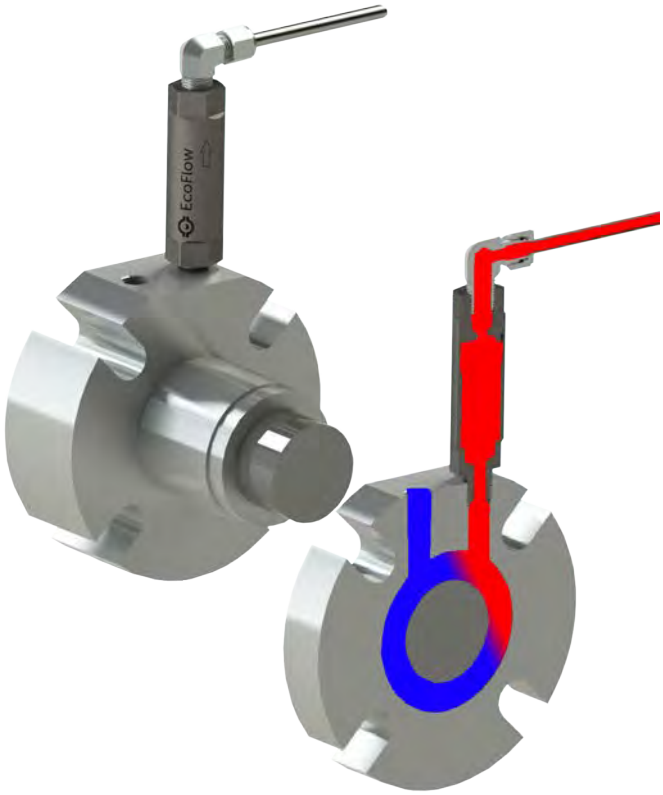
Many mechanical seals use water for cooling, lubrication and to keep seal faces clean. Most of the time this water is not monitored or controlled, wasting hundreds of thousands of gallons of water a year.

THE SOLUTION

By placing an EcoFlow® on the seal water outlet of your mechanical seal it will continuously control the seal water temperature. If the seal water should exceed your specified factory set point it will modulate open discharging the hot water, displacing it with cool water. This cooler water will cause the EcoFlow® to modulate closed. This cycle will continue to occur as long as excessive heat is being transferred to the seal water causing the water temperature to exceed its factory set point.

EcoFlow® contains a highly reliable, repeatable phase change actuator which is temperature sensitive and will open and close the valve depending on the temperature it is sensing.

TYPICAL INSTALLATION



BENEFITS

- Drastically decreases seal water consumption
- Increases water treatment efficiency
- Self-actuating valve only uses water when necessary
- Eliminates dry runs due to operator error
- Increases seal life by avoiding dry running the seals and ensuring an optimum seal environment
- Expands mechanical seal use to more applications
- Decreases operating cost
- Low Cost – rapid ROI
- Optional side port feature allows flushing debris from inside valve

DESIGN FEATURES

- Temperature response is unaffected by pressure variations
- 100% mechanical/self-operating, no outside power source of any kind.
- Corrosion resistant - long service life
- Ram-type plug for tight, reliable shutoff
- Ease of installation
- Operates in narrow temperature band
- Fail safe design

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SEAL SUPPORT SYSTEMS

CASE STUDY: A Major US Sugar Producer

A major US sugar producer has several hundred pumps throughout the plant using mechanical seals which require a water supply to cool and flush it. This water is usually either returned to a seal water tank or dumped to drain. Any water that ends up on the floor or in a drain finds its way back to process and must be evaporated (large cost) or sent to waste water (even larger cost). Any unnecessary water flow that can be cut from the recirculating systems is beneficial.

"The seal manufacturer states that we should need 2.6GPM to keep the seal below 180 degrees, though the 135 degree EcoFlow® is putting out about 3GPH. Also note that it needs no attention when the pump shuts off, it just dribbles until the seal cools off and shuts off."

"A pleasant side effect of this valve is the ability to leave the feed water on even while the pump is not running. It eliminates any possibility of starting the seal dry by our process people forgetting to turn on the water. That alone will save us several seals a year."

"We could not use a seal before because we could not allow more than a couple gallons an hour of water to the drain. Your valve dramatically decreases the water usage and as a result reduces the amount we send to drain."

- Maintenance Planner

WATER SAVINGS EXAMPLE

To illustrate the water savings from the case study above that can be realized with EcoFlow®, we've used a typical seal manufacturer's recommendations of 2.6GPM to be used to flush the seals versus EcoFlow®'s ~3GPH, operating 8 hours a day, 5 days a week (2080 hours per year).

MFR Recommended flow: 2080 hours x 2.6GPM = 324,480 gallons of water per year.

EcoFlow®: 2080 hours x 3GPH = 6,240 gallons of water per year.

In our calculation, EcoFlow® can save ~318,000 gallons of water per year

DIMENSIONS & CAPACITIES

Type	SIZE[1] (NPT)	D		L		Weight		C_V	Maximum Operating Pressure	Maximum Temperature
		in	mm	in	mm	Lb	Kg			
EcoFlow®	1/4"	1.1	28	3.6	91	0.7	0.3	0.5	400 PSIG (27.6 BAR)	250°F (121°C)
EcoFlow® w/ side port		1.7	43			1.3	0.6			

ORDERING

Part Number[1]	Description
241 - 100000 - XXX	1/4" EcoFlow® SS
241 - 100100 - XXX	1/4" EcoFlow® SS w/ side port

NOTES

1. Standard open temperatures "XXX" available: 040°F, 045°F, 050°F, 060°F, 070°F, 075°F, 085°F, 095°F, 100°F, 105°F, 110°F, 115°F, 120°F, 125°F, 130°F, 140°F, 150°F, 160°F, 170°F, 175°F, 180°F, 190°F, 200°F and 210°F.
   a. Note: Closing temperature is typically 10°F below opening temperature.
2. Warranty information disclosed at www.thermomegatech.com/terms-conditions/