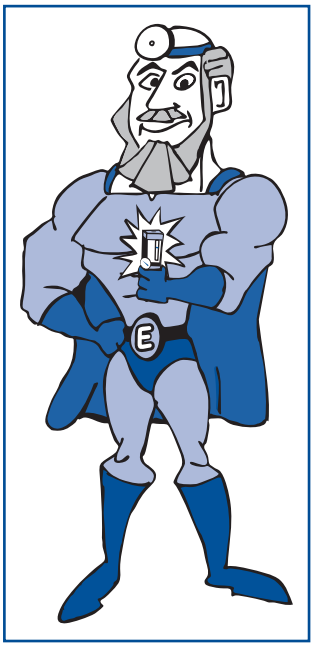
PCS COMPANY
Turn To The Industry Experts

SMARTFLOW® Dr. Eddy® Turbulent Flow Indicators with FCI Technology

Dr. Eddy diagnoses flow condition.

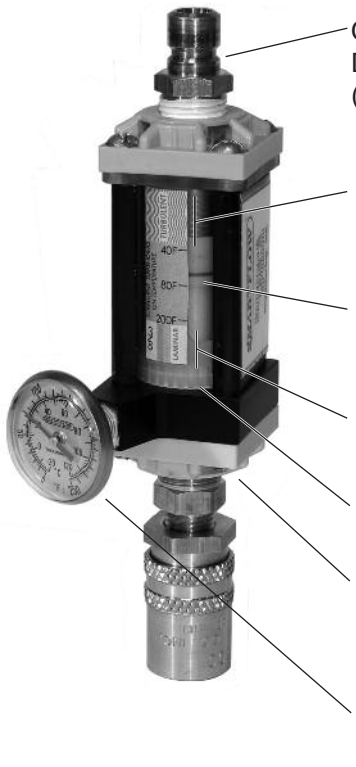


Using Fluid Characteristic Indication (FCI) technology, Dr. Eddy displays the condition of the water as it relates to cooling efficiency: laminar flow, transitional flow, or turbulent flow.

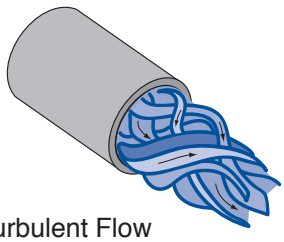
Dr. Eddy has four scales built into the meter: three scales for FCI and one scale for flow rate. FCI Scales are selectable and correspond to cooling line port size: 1/4", 3/8", or 1/2". Flow rate scale can be referenced quickly for additional functionality.

The flow scale displays flow rate in gallons or liters per minute depending on the model. A dual scale temperature gauge is standard on all models for process comparison to the FCI Scales.

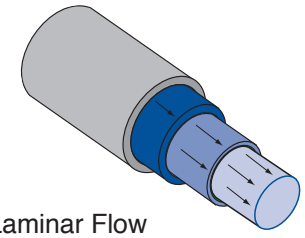
Dr. Eddy applies the science of heat transfer, diagnosing the condition of cooling water lines at a glance. Cooling water capacity can be conserved plant-wide by using the minimum amount of flow that will produce turbulence on all presses. It may be possible to delay costly water system upgrades by optimizing the flow effectivity.



U.S. Patent No. 7,549,348



Turbulent Flow



Laminar Flow

Turbulent Flow Basics

Turbulent water flow is much more efficient at removing heat in a cooling system than water flowing under laminar conditions. Once turbulent flow is achieved, increasing the flow rate does not significantly improve the cooling rate of the system.

In molding applications, many mold operators try to maximize the flow of water through their cooling systems to ensure turbulent flow. Doing so increases energy costs for pumping more water than necessary through the system. This practice may also limit the amount of cooling water available for cooling additional molds on the same cooling system circuit.

By insuring turbulent flow using FCI Technology, less water can be used in the molding process, saving precious resources.

Try our on-line Turbulent Flow Calculator:

www.SMARTFLOW-USA.com/turbulent-flow-rate-calculator

Turbulent Flow Facts

Flow is likely to be turbulent for Reynolds numbers above 4000.
Reynolds Number (Re) is a dimensionless quantity used to predict fluid flow patterns.
Re = (Velocity x Diameter) ÷ Kinematic Viscosity
Kinematic Viscosity of water at 20°C (68°F) = 1cSt.
Geometry and roughness inside flow passages will affect Turbulent Flow.

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