Proteus Industries Inc.

WeldSaver™

Coolant control and leak detection for robotic welding systems

RoHS COMPLIANT

» Sends alarm to weld controller in less than 0.4 seconds

» Shuts off water in less than 1 second after cap loss, hose burst or other catastrophic failure

» Patented cap-loss algorithm is independent of flow calibration

» Continuous indication of actual coolant flow rate directly in GPM or LPM

» User-selectable operating parameters and alarm settings

» Vortex or paddle wheel flow metering with metric or NPT connections

» Flow ranges from 0.5 to 13.0 GPM / 1.0 to 50 LPM

» DeviceNet, EtherNet/IP and Relay interface options

» Remote control of valve state

The Proteus WeldSaver™ is the leading coolant flow controller and leak detector for robotic welding applications. Whether monitoring coolant flow to weld guns or to the entire cooling circuit for a weld cell, the WeldSaver quickly and reliably detects losses in flow continuity created by cap loss, hose burst or other catastrophic event.

Intelligent Leak Detection

The WeldSaver's patented detection algorithm rapidly identifies subtle flow velocity changes that distinguish true leaks from pressure, temperature and motion-induced changes in flow rate.

In the event of a cap loss or other leak, the WeldSaver signals the controller to stop the weld cycle in less than 0.3 seconds—and shuts down all coolant flow in less than 1 second! This direct control of the shut-off mechanism significantly reduces reaction time, minimizing water loss and the associated mess and hazard.

Performance Characteristics

Flow Range	0.5 – 3.0 GPM 1.0 – 11 LPM	2.0 – 8.0 GPM 7.5 – 30 LPM	1.5 – 13 GPM 6.0 – 50 LPM
Connections	3/4″ FNPT • G 3/4 (BSPP)		
Pressure Drop	< 2.0 psig at 1.0 GPM < 15 kPa at 4.0 LPM	< 2.0 psig at 3.6 GPM < 15 kPa at 14 LPM	(PERFORMANCE TESTING IN PROGRESS)
Coolant Supply Pressure	83 – 620 kPa / 12 – 90 psig		
Coolant Return Pressure	70 – 350 kPa / 10 – 50 psig		
Differential Pressure	14 – 415 kPa / 2.0 – 60 psig		
Coolant Temperature	4.0° – 110°C / 39° – 230°F		
Operating Environment	4.0° – 50°C / 39° – 122°F		
Leak Response Time	~300 msec at most sensitive condition; ~1 sec at sensitivity setting "Faster"		
Low Flow Response	< 0.2 sec		
Reset / Override Response	< 1.0 sec		
Leak Detection	0.3 – 1.0 sec depending on response time setting		
Leak Sensitivity	Able to detect a loss of flow continuity from 1 to 20 balanced parallel flow paths		
Accuracy	± 3% of flow range		
Repeatability	± 1% of flow range from 0.1 to 1.0 × flow range		

Interface Capabilities

» DeviceNet

DeviceNet instruments operate as slaves on the DeviceNet network and support Explicit Messages, Polled I/O Messages, Change of State Messages and Cyclic Messages of the predefined master/slave connection set.

» EtherNet/IP

EtherNet/IP instruments offer the operational functionality of DeviceNet versions configured for communication over Ethernet networks. The WeldSaver can be operated from the weld controller or from a pendant or standard computer via a convenient web-browser based graphical user interface.

» Discrete / Relay

Relay instruments provide a Remote Reset control input and optional control of valve or bypass status from the weld controller, with relay outputs signalling Flow OK or Low Flow status. +24 VDC or isolated 0 VDC contact logic options can be selected by wire contacts during installation.

The WeldSaver EtherNet/IP can be operated directly from a pendant

About Proteus Industries

We have over 30 years of experience in developing and manufacturing hundreds of thousands of rugged and precise fail-safe flow control instruments, flow meters and flow switches. Our products are used worldwide to protect and monitor mission-critical processes and equipment in medical therapy systems, semiconductor fabrication, automotive welding and temperature-stabilized optical and mechanical systems.

Our world-class calibration capability allows us to deliver instruments that are NIST- and NMI-traceable for flow, temperature, pressure and other units of measure. Our assured accuracy is the foundation of your success!

Need a Customized Solution?

Contact WeldSaver Applications Support at weldsaver@proteusind.com or (650) 964-4163 and let our experts create a product configured to your exact requirements!

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