

PULSWELD®

Precision Welding Power Source



LIBURDI®

Table of Contents

Product	Page
Quality, Features, and Applications	1
History of the Company	2
Current Sources / Specifications	3
GTAW and PAW Power Sources.....	5
Arc Starters	6
Plasma Pilot Arc Current Sources	7
Variable Polarity Switching Units.....	8
Variable Polarity Switching Unit Specifications.....	9
Accessories	10
LCX (Universal Weld Controller).....	11
Computer Interface and Specifications.....	12
Typical Welding Current Source Configurations.....	13

Quality

When you choose Puls weld products for your Gas Tungsten Arc Welding (GTAW) and Plasma Arc Welding (PAW) applications, you're choosing the industry's highest quality, most versatile and reliable power sources for computer-controlled arc welding. Unlike other power sources that have computer interfaces added in as an afterthought, Puls weld power sources are specifically designed for computer control applications.

Computer compatibility isn't the only reason why Puls weld products are superior. Our products deliver a consistent, precise, and pure DC output current needed to provide a quality weld. If you need more consistent and reliable welds, Puls weld products are the answer.

Puls weld products feature sub millisecond current rise and fall times. This provides superior cleaning action and improved arc force. It also allows users to consistently pulse current from a low to high level with programmable frequency and duty ratio. Older generation power sources simply cannot provide the same welding consistency.

Puls weld's TIG and Plasma welding power sources, available for both straight and variable polarity, are the most advanced welding power supplies available in the world today.

Puls weld has remained dedicated to uncompromising quality, performance, and innovation for more than 20 years and stands behind all of its products with a one year parts and labor warranty.

Features

Puls weld offers a wide range of products and innovative features, including:

- Computer control for automatic operation.
- Single power sources for GTAW and PAW applications.
- Pure, clean output current for consistent results.
- Sub-millisecond rise times for superior welding quality.
- Accurate current settings for consistent results.
- Modular expandability for future growth.
- Pilot arc, arc starter and reverse polarity units.

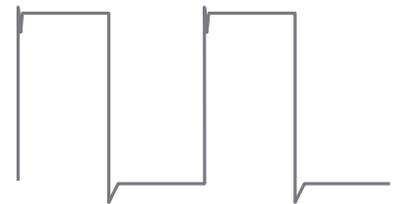
The hallmark of Puls weld power sources is versatility. As a result, Puls weld products offer the industry's broadest output range: 2 to 200 amps in a single unit. This versatility means you can use the same system for micro plasma, plasma, or GTAW welding. Conventional power sources simply don't offer this broad output current range.

An innovative, modular design further adds to the versatility of Puls weld products. This modularity allows the paralleling of several power sources, as well as the addition of optional accessories as your applications require. Each power module has a maximum current rating of 200 amps, with a maximum average output power of 10 kilowatts which is ideally suited for continuous use at full output.

Two or more modules can be connected in parallel, providing virtually unlimited current.

Applications

Computer inputs control weld current. A signal from your computer's digital-to-analog converter sets the current level. To ensure optimum performance, Puls weld has isolated computer inputs and telemetry output lines that virtually eliminate electrical noise. Furthermore, the Puls weld arc starters coexist with computers, whereas other types of arc starters can generate noise that interferes with sensitive computer equipment operation.



Pulse Wave from 10-100 Amps

History of the Company

In 1994 Liburdi acquired Puls weld Corporation. Puls weld Corporation was founded in May 1991 when it purchased the Welding Products Division of Venable Industries, Inc. The company's products have a long-standing history of performance and reliability that dates back more than three decades.

The company's first product was a compact power source developed for automated welding in a nuclear environment.

This power source contained three motor drivers, was easily transportable, and offered an extremely precise 150 amp current source with built-in pulsing and timing controls. Over the years, the company's product line has expanded steadily. Today Puls weld offers 200, 400, and 600 amp power sources. In addition, Puls weld has branched out from its early specialization in Tungsten Inert Gas (TIG) welding applications. Today, its product line includes both plasma welding and the very latest in variable polarity welding units for critical aluminum weldments. These variable polarity units are available in both TIG and plasma versions with ratings up to 400 amps.

A dedication to quality - and our customers

Puls weld provides high quality, precision welding current sources to customers in the manual, automatic, and robotic welding fields. Our products are typically rack-mountable, easily interfaced to computers or other controllers, and designed to minimize interference with host controllers, especially during the arc start phase.

Puls weld takes great pride in being one of the industry's leading sources of power electronics products and expertise. As a result, our customers understand that the Puls weld name is synonymous with state of the-art quality, precision, and reliability. By using Puls weld products, our customers have the ability to perform repeatable, reliable welds, thus improving the quality of their products.



Current Sources

Gas Tungsten and Plasma Arc Welding

Models P200-004 and P200-007 Puls weld Series Current Sources are designed to transform and rectify prime power, producing a well regulated, electronically controlled welding current output across a torch-work gap of a TIG or Plasma welding system.

Variable Polarity Power Source Configurations

Model P200-005 and P200-006

The Puls weld Current Source is designed for use in a 100 amp Variable Polarity configuration. This unit transforms and rectifies prime power, producing a well regulated, electronically controlled welding current.



The Puls weld P200-006 current source is designed for use in Variable Polarity configurations greater than 100 amps. This unit is designed to accept DC power from a Puls weld Power Console, such as a T400.

Both the Puls weld P200-005 and P200-006 Current Sources produce a well regulated, electronically-controlled welding current output across a torch-work gap of a Variable Polarity TIG or Plasma (VPPA) welding system.

Miscellaneous Specifications Chart

PART NUMBER	EXTERNAL DC		REQ'D FOR VP APP.	REQUIRES EXTERNAL CONTROLLER
	ARC START	GAS VALVE		
P200-004				X
P200-005			X	X
P200-006		X	X	X
P200-007		X		X

Current Sources Specifications



Front View

Side View

Rear View

Electrical Specifications Chart

PART NUMBER	OPEN CIRCUIT VOLTAGE (DC)		RATED WELDING POWER (WATTS)	FRONT PANEL CIRCUIT BREAKER	*INPUT POWER REQUIREMENTS AND AMPERAGES		
	MAX	TYP.			1 PH., AC, 60 HZ		DC
					240V	480V	65-75V
P200-004	75	65	3,000	X	20	10	
P200-005	75	65	3,000	X	20	10	
P200-006	75	65	10,000				150
P200-007	75	65	10,000				150

*INPUT VOLTAGES NOTE: Internal taps for the various input voltages are provided.

Signal Specifications Chart

PART NUMBER	TELEMETRY		CURRENT COMMAND	CURRENT ENABLE	ARC-ON STATUS
	CURRENT	ARC VOLTAGE			
P200-004	X	X	X	X	X
P200-005	X	X	X	X	X
P200-006	X	X	X	X	X
P200-007	X	X	X	X	X

Current Telemetry: 0-10 VDC analog signal representing 0-100% of full rated current amperage

Arc Voltage Telemetry: 0-10 VDC analog signal representing 1/10 of the actual Torch-to-Work voltage (4/10 in - A units)

Current Command: Input 0.1-10 VDC analog command = 2-200 AMPS

Current Enable: 5-15 VDC enabled

Arc On Status: Relay contact closed = Arc On

Electrical

CURRENT RATING: 200 amps maximum

RIPPLE: Maximum of 1% of rated full scale

DUTY: Continuous

PARALLEL CAPABILITY: No practical limit (ie. 400 amps, 600 amps, etc)

Mechanical

COOLING: Air cooled using internal fan

DIMENSIONS: Fits standard 19" rack

Height: 8.75"

Width: 17"

Depth: 24" (28" including handles and connectors)

WEIGHT:

P200-004, P200-005, 88 lbs. (156 lbs. shipping)

LT200, LP100,

LTP100:

P200-006, P200-007: 43 lbs. (111 lbs. shipping)

LP100

The unique Liburdi Puls weld current source technology produces superior welds for the demanding alloys used in aerospace and advanced manufacturing applications. The 50 Amp delivers precision current pulsing for low heat-input welding.



Electrical Specifications Chart

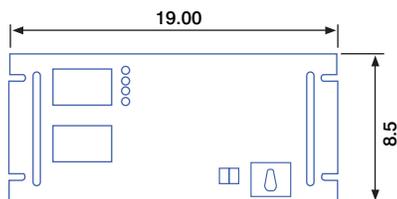
PART NUMBER	OPEN CIRCUIT VOLTAGE (DC)		RATED WELDING POWER (WATTS)	*INPUT POWER REQUIREMENTS & AMPERAGES	
	MAX	TYP.		1 PH., AC, 50/60 HZ	
LP100-001	65	65	1.5 kw	230V	10A

Electrical

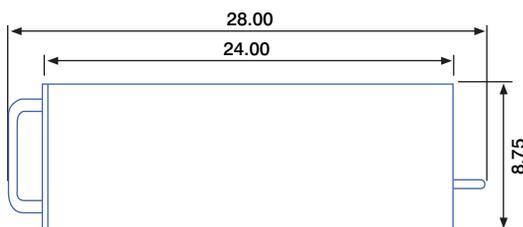
CURRENT RATING: 0.1 to 50 Amps (Transfer) + 1-19A (Pilot)
 POWER: 1.5 Kw
 DUTY: Continuous (100%)
 ARC STARTER: Built-in

Mechanical

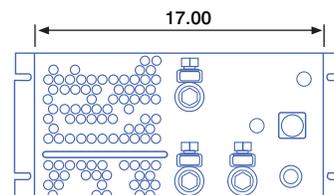
DIMENSIONS
 Height: 8.50"
 Width: 19"
 Depth: 24"
 Weight: 80 lbs



Front View



Side View



Rear View

LA600 Arc Starters

Pulsweld Arc Starters are "Impulse Style" modules used between the welding torch and the other modules of a Pulsweld welding system.

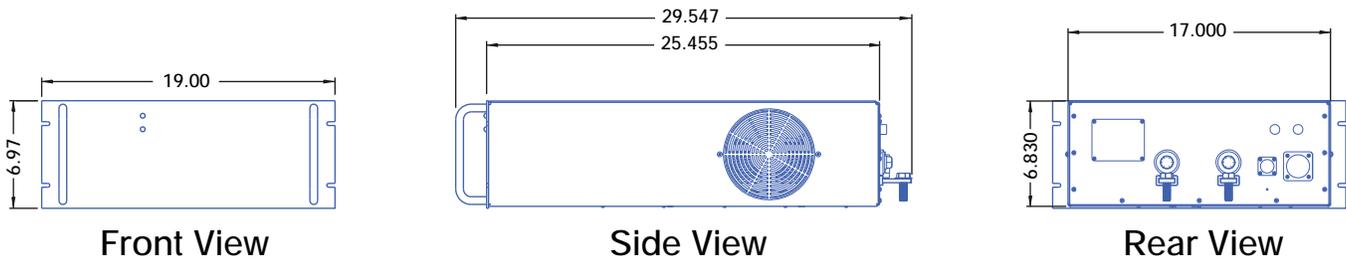
These arc starter units provide the high voltage potential needed to initiate a welding arc. Because of their "impulse" design, Pulsweld Arc Starters do not create the computer interference generated by most high frequency arc starters.

Pulsweld Arc Starters are capable of starting arcs with electrode-to-work distances in the 1/6" to 1/4" range under typical welding operations.

A high voltage potential is pulsed to the electrode work gap at the prime power frequency, typically 50 or 60 Hz.



Once the welding arc is established, the arc starter is disabled and does not operate during the remainder of a normal welding process. An Arc Starter typically is not required for applications employing Plasma Pilot Arc Current Sources such as a PC30-VP model.



Electrical

INPUT POWER REQUIREMENT: High voltage AC power from the Pulsweld system welding power supply 120 VAC from standard 15 amp AC service main.

CONTROL SIGNALS: Enable command from another Pulsweld system module 5-15 volt enable command supplied by user's system.

Mechanical

COOLING: Air cooled using internal fan

DIMENSIONS: Fits standard 19" rack

Height: 6.97"

Width: 19"

Depth: 25.45" (29.54" including handle and connectors)

WEIGHT: 27 lbs. (32 lbs shipping)

Plasma Pilot Arc Current Sources

Puls weld Plasma Pilot Arc current sources are designed to supply a constant current across the electrode-orifice gap of a plasma welding torch.

This unit features a built-in "impulse" style pilot arc starter, as well as a tap selectable voltage input range from 240 or 480 VAC, single phase.

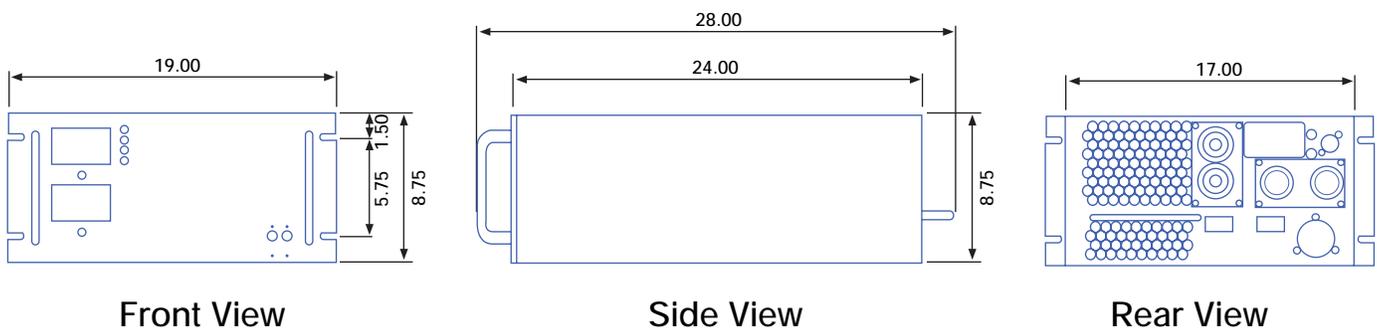
The Puls weld Pilot Arc current is regulated and programmable from 1 amp to 29 amps in 1 amp increments.



Arc Starters, such as the LA600, typically are not required in applications employing plasma torches.

Amperage Rating Chart

PART NUMBER	AMPERAGES RATING	
		29 Amps
PC30-VP		X



Electrical

INPUT POWER REQUIREMENT:

AC VOLTAGE: 240/480V
(Transformer taps manually adjusted internally)

FREQUENCY: 50-60 Hz

PHASE: Single

AC CURRENT: 10 amps maximum
(Actual demand varies with the voltage level of the AC mains and the required arc current level)

CONTROL SIGNALS:

ARC CURRENT ADJUST: Adjustable from front panel in one (1) amp increments from 1A to 29A.

ENABLE: 5-15 VDC enabled

Variable Polarity Switching Units

Pulsweld Polarity Reversal Units are current-steering modules which connect to the output of P200-006 current sources to provide a flexible combination of straight and reverse current during the welding cycle.

In applications involving high quality welding of aluminum, the pulses of reverse current use the principle of cathodic etching to remove the oxides from the weld surface. The advantage of variable polarity welding over AC welding of aluminum is that the time, frequency, and magnitude of the reverse pulse can be precisely tailored to minimize degradation of the tungsten during the weld. Heat input and the width of the heat-affected zone are also minimized.

Pulsweld Variable Polarity Welding Systems are available for both Gas Tungsten Arc Welding (GTAW) and Plasma

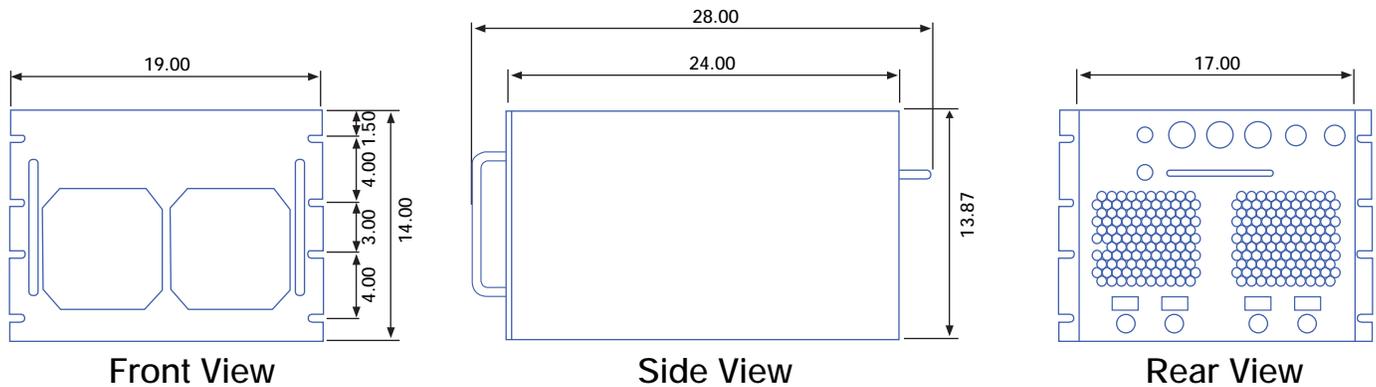


Arc Welding (PAW) applications. Weld current can be freely programmed for any current between the minimum and the maximum ratings of the system in either polarity. The unit has sufficient power to assure reliable operation in all common welding applications.

Selection Guide

PART NUMBER	AMPERAGE RATING				POWER SOURCE REQUIRED
	100	200	300	400	P200-006
VP400-001		X		X	X (1 or 2)

Variable Polarity Unit Specifications



Electrical

INPUT POWER REQUIREMENT:

VP400: DC welding current provided from one or more P200-005 or P200-006 current sources; AC local bias requirements provided from the system power console (T400).

MAX OPEN CIRCUIT VOLTAGE: 300 VDC

CONTROL SIGNALS

INPUT:

DCEN (straight): 0.1-10 VDC = 1-100% of full rated amps

DCEP (reverse): 0.1-10 VDC = 1-100% of full rated amps

FREQUENCY: 0.1-10 VDC = 1-100 Hz

DUTY: 0.0-10 VDC = 0-100% DCEN (straight)

ENABLE: 5-15 volt main system arc enable command

Mechanical

COOLING: Air cooled using internal fans

DIMENSIONS: Fits standard 19" rack

Height: 14"

Width: 17"

Depth: 24" (28" including handle and connectors)

WEIGHT: 80 lbs. (148 lbs shipping)

A number of accessories are available for various components of Puls weld welding systems. Although not a complete list, these accessories include:

Racks and System Integration

Welding systems, which require a number of components, may be purchased mounted and integrated in racks of appropriate height. System integration includes the rack, all cables, additional cooling if required, and system calibration.

Trim Cases

Smaller cases are available for single independent units, such as the LTP100-001, LCX with remote pendant controls. This improves the appearance of the unit and makes it more portable.

Cables

Cables can be custom designed and built to the customer's requirements to speed the integration process at the customer's facility.

Remote Control Pendant

A pendant is available for programming, starting and stopping the weld cycle in the LTP 100-001, LCX current source.

Foot Pedal

Foot pedals are available for some models. The foot pedal allows the operator to manually control current during the weld. Pressing the foot pedal automatically initiates weld cycle start. In reverse polarity systems, the foot pedal proportionally controls both straight and reverse current.

Computer Interface Assembly

Wintube/Fireview/Fireview Pro

Resistive Load

Resistive loads are available for calibration and test of systems.

Calibration Station

Custom calibration station is available for customer self calibrations.

Options/Services

Onsite factory calibration services available by certified Liburdi Technicians. Fully equipped factory calibration and repair services are available.

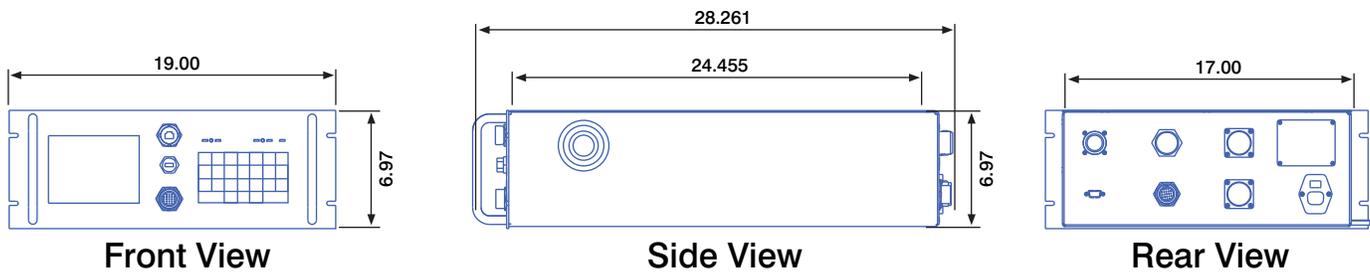
LCX™ Universal Weld Controller

Liburdi's universal weld controller is the only one of its kind. LCX™ allows you to work seamlessly with a variety of industry power supplies, including our own line. In conjunction, the LCX™ is fully compatible with Liburdi Dimetrics Gold Track pipe welding systems.

Liburdi's universal weld controller is expandable to 8 servo axes (Tachometer, back-emf, or encoder feedback). Pulse up to 10,000 Hz with a duty cycle resolution of 1 micro-second. Plenty of spare digital and analog controls for external welding supplies and accessories; MFC's, solenoids and flow switches.



LCX™ allows you to work seamlessly with a variety of industry power supplies, including our own line. In conjunction, the LCX™ is fully compatible with Liburdi Dimetrics Gold Track pipe welding systems.



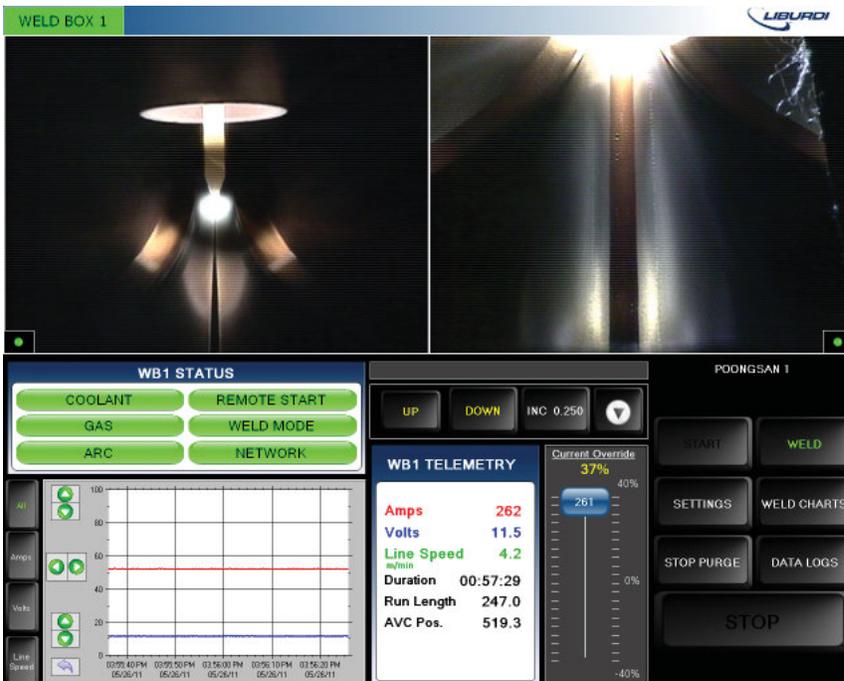
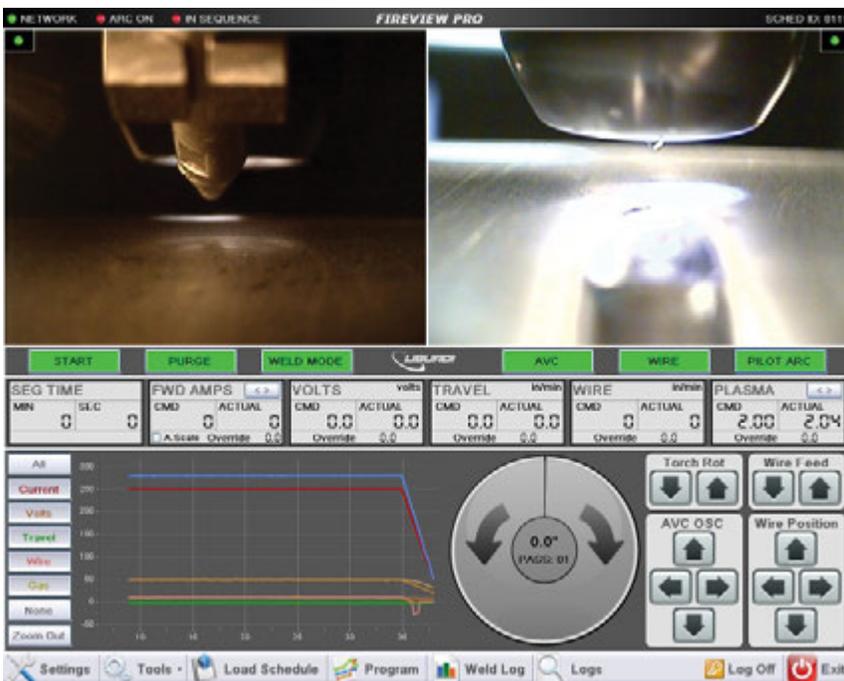
Computer Interface and Specifications

Fireview Pro™ and WinTUBE™ software platforms are the main two options that system users can use to interface with the Puls weld power sources.

Fireview Pro™ offers three main interfaces:

- 1) a weld monitor panel for overriding and viewing the weld in real-time.
- 2) a graphical programming panel for full schedule generation,
- 3) a datalog panel for reviewing strip charts of all recorded welding parameters.

WinTUBE™ offers full integration of Puls weld power sources into tube mills. It offers weld viewing, proportional linespeed-to-amperage schedules, real-time overrides and datalogging. Gas and torch cooling integration. Realtime line speed adjustments using supplied ecoder leading and trailing views of the torch.



Typical Welding Current Source Configurations

TIG Current Sources

200 AMP 1 ea P200-004 LA600 LCX	400 AMP 2 ea P200-004 LA600 LCX	600 AMP 3 ea P200-004 LA600 LCX	800 AMP 4 ea P200-007 LA600 LCX	1000 - 1200 AMP 5-6 ea P200-007 LA600 LCX
---	---	---	---	---

Plasma Current Sources

50 AMP 1 ea LP100-001 PC30-VP	200 AMP 1 ea P200-004 PC30-VP LCX	400 AMP 2 ea P200-004 PC30-VP LCX	600 AMP 3 ea P200-004 PC30-VP LCX
--	---	---	---

TIG/Plasma Current Sources

200 AMP 1 ea P200-004 LA600 PC30-VP LCX	400 AMP 2 ea P200-004 LA600 PC30-VP LCX	600 AMP 3 ea P200-004 LA600 PC30-VP LCX
--	--	--

Variable Polarity TIG Current Sources

200 AMP 1 ea P200-6 VP400-2 LA600 T400 LCX	400 AMP 2 ea P200-6 VP400-2 LA600 T400-2 LCX
--	--

Variable Polarity Plasma Current Sources

200 AMP 1 ea P200-6 VP400-2 PC30-VP T400 LCX	400 AMP 2 ea P200-6 VP400-2 PC30-VP T400-2 LCX
--	--

Variable Polarity TIG/Plasma Current Sources

200 AMP 1 ea P200-6 VP400-2 LA600 PC30-VP T400 LCX	400 AMP 2 ea P200-6 VP400-2 LA600 PC30-VP T400-2 LCX
---	---

WARRANTY:

One Year Parts and Labor
Contact factory for complete warranty details.

PULSWELD[®]



For more information, please contact us at:

Liburdi Automation
1230 South Service Road
Stoney Creek, Ontario
L8E 5C4, Canada

tel 1(905) 689-0734
fax 1(905) 689-0739
liburdi@liburdi.com
www.liburdi.com