DPC IV Plus DYNAMIC PROCESS CONTROLLER™

**GENERATOR**
- Patented Pulse-Width Modulation design delivers power more efficiently with substantially less stress on the electrical components for superior performance, reliability, and extended service life
- Unique Linear Ramp Soft Start accelerates the transducer and tooling up to operating amplitude eliminating mechanical and electrical starting stress
- AUTO-TRAC tuning using phase lock loop technology automatically locks the generator to the resonant frequency of the transducer and tooling even under varying conditions of temperature and loading
- Dukane exclusive FLOW-THROUGH COOLING provides on demand thermostatically controlled cooling system that separates electronic components from the cooling air flow chamber
- Electronic overload protection prevents component failure, reducing costly downtime

**MODELS**

<table>
<thead>
<tr>
<th>POWER / FREQUENCY</th>
<th>100 W</th>
<th>150 W</th>
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**DPC IV Plus Dynamic Process Controller™ (DPC)**

**DESIGN**
- Integrated power supply and process controller saves space, and simplifies setup and operation
- Modular component design maximizes product flexibility and cost effectiveness by allowing the selection of various power levels and process control features
- System upgradeability allows quick, simple field installation of control and/or user interface features not originally selected
- Retrofittable to existing ultrasonic press systems to bring precise process control and monitoring features to applications already in production
- 19” (48cm) rack mountable version for easy system integration at minimal cost
- Universal IEC 320 power cord receptacle accommodates most worldwide power requirements
- Networking capabilities for multthead and automated systems’ setup and monitoring through a single user interface available
- User interface options available for full-screen data entry and parameter viewing
- Compatible with current Dukane presses, thrusters, and probes

The easiest to use, yet most features-rich process controller available!

www.dukcorp.com/us  •  e-mail: ussales@dukcorp.com

Dukane Corporation • Ultrasonics Division • 2900 Dukane Drive • St. Charles, Illinois 60174 USA • TEL (630) 797-4900 • FAX (630) 797-4949

Intelligent Assembly Solutions
The DPC IV Plus lets you control and monitor every major parameter of the weld process faster and more accurately than ever before possible!

DYNAMIC PROCESS CONTROL
- Powerful 32-bit RISC microprocessor addresses more data in less time for superior performance
- Real-time, multitasking operating system simultaneously controls and monitors process parameters
- One millisecond sample rate samples cycle parameters one thousand times per second on a cycle-by-cycle basis for greater accuracy, consistency, and control
- Primary and secondary control functions offer total flexibility in process control, reducing rejects and increasing part consistency
- Unique Dual Pressure mode increases the clamp force for a better melt during the weld cycle, or a tighter assembly during the hold cycle
- For parts requiring more than one assembly operation and more than one set of process parameters, Sequencing mode automatically changes setups after a user-defined number of process cycles
- Data sampling mode allows user-selectable sample sizes and intervals for downloading or internal storage of up to 10,000 characteristics
- Nonvolatile memory stores 25 setups to eliminate repetitive setup procedures and conveniently accommodate multiple projects
- Built-in serial and parallel communications ports for real-time interfacing to external devices such as a printer for permanent documentation, an optional user interface for full-screen display, or another computer for additional data storage or statistical process control (SPC) analysis
- Self-diagnostic error messages simplify troubleshooting and correcting setup and programming mistakes

FRONT PANEL INTERFACE
- Four-line by twenty-character LCD display shows cycle data and setup information using terms that are easy to understand
- Twelve-button keypad with one touch “Hot Keys” makes programming and parameter entry, selection, or modification fast and easy
- System power output indicates normal or possible overload operating condition during the weld cycle

DISTANCE MODULE and LINEAR ENCODER
- Weld by distance mode controls the melt collapse distance to ensure that the same volume of material melts on each part so that the finished joint strength is consistent
- Weld by absolute distance mode controls the finished part height to yield uniform assemblies
- All distance parameters (downstroke, trigger delay, weld, hold, absolute weld, total weld, and total stroke distances) are monitored, with upper and lower limits for bad and suspect parts to verify quality and consistency
- High quality linear optical encoder with a one-micron resolution for excellent precision and repeatability
- Graphing capability for plotting a Distance vs. Time curve on every weld, either on an optional user interface or a serial or parallel printer

POWER and ENERGY MODULE
- Weld by peak power mode terminates ultrasound when the available joint material is completely melted, compensating for variations in the molded part
- Weld by energy mode delivers a specific amount of energy to the work to enhance process control
- Monitors all power and energy parameters with upper and lower limits for bad and suspect parts
- System power output indicates normal or possible overload operating condition during the weld cycle
- System status panel displays any of six self-diagnostic messages, including Fault, Input Test, Overload, On Line, Overtemperature, or Off Line
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**INTEGRATED PROCESS CONTROL SYSTEM**

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DPC IV Plus DYNAMIC PROCESS CONTROLLER™

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Form No. 11468-04-03

**DPC IV Plus Dynamic Process Controller™ (DPC)**

INTEGRATED PROCESS CONTROL SYSTEM

- Advanced transformer and inductor designs increase efficiency and reliability of electronic components
- Line regulation compensates for line fluctuations assuring consistent amplitude
- Load regulation assures constant amplitude at various loads improving assembly consistency
- Universal Voltage Input automatically compensates for line voltages between 90-130, or 180-260 volts
- Programmable phase adjust, startup frequency, and soft-start time to fine tune the generator to the acoustic tooling, if necessary

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