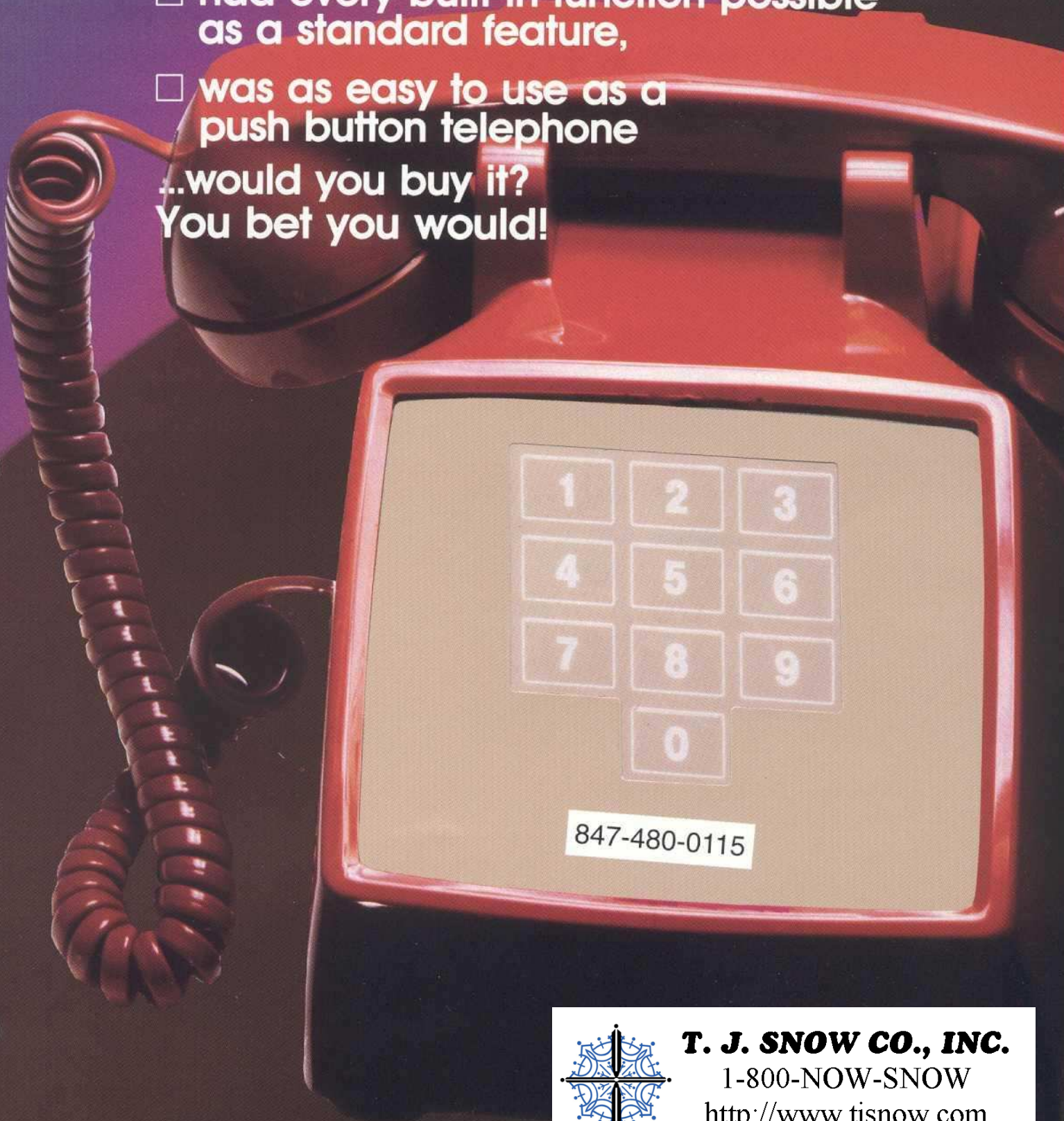


**If there was a low-cost  
resistance welding control that:**

- stored up to 75 schedules,
- had every built-in function possible  
as a standard feature,
- was as easy to use as a  
push button telephone

**...would you buy it?  
You bet you would!**



**T. J. SNOW CO., INC.**

1-800-NOW-SNOW

<http://www.tjsnow.com>

T.J. Snow is an Authorized Unitrol Distributor.

Introducing the

# UNITROL SOLUTION<sup>®</sup>

Welding Control

It helps you solve *all* of your  
welding problems

Has something for everyone:

- Welding engineer
- Welding foreman
- Plant manager



The first low-cost, full-featured resistance welding control  
that will take you virtually anywhere you want to go...

• 1Ø • 3Ø Frequency Converters • 3Ø DC •  
Feedback brazing • Cascade systems •  
Comes with everything you need already built-in.

Automatic  
Voltage  
Compensation

75  
Schedule  
Memory

Electronics  
Parts  
Counter

Dual Heat

Tip Force  
Calculator

Water  
Saver

Impulsation

Repeat  
Mode

Squeeze

Weld

Hold

Preheat

Upslope

Downslope

Postheat

Quench  
and  
Temper



Control Pendant, actual size

# The Unitrol Solution...

helps solve 4 big welding problems:

- 1. Repeatability** The Unitrol Solution® uses the most advanced digital electronics available – your guarantee of absolute timing accuracy and consistent heat control. It lets you set your machine and be confident of an accurate weld without the worry of constant adjusting, tweaking and fiddling associated with older type controls. Uniform, predictable, consistent welds repeated over and over again – that's what the Unitrol Solution® is all about.
- 2. Reliability** The Unitrol Solution® is designed and built for continuous trouble-free production. Every unit is tested on a production welder before shipment to guarantee effectiveness of the high quality components utilized in each control. All functions have built-in trouble shooting indicators that save you valuable time and hours of guesswork.
- 3. Flexibility** The Unitrol Solution® lets you say goodbye to inaccurate hard-to-understand, out-dated controls that put limitations on your existing equipment. It's accurate, simple, and gives you the ability to do more with your equipment than any other control on the market! It also includes all NEMA functions (slope, impulse, etc.) – at no extra charge.
- 4. Serviceability** Other controls, old and new, are made with far too many components which increase the likelihood of breakdown. The Unitrol Solution®'s concise and uncomplicated design assures continuous production from your welder. Should a problem ever occur, the Solution®'s self-diagnosing feature, together with only two circuit boards, lets your plant personnel bring the welder back on line in minutes. No wiring to deal with – just plug in and start welding.

# The Unitrol Solution...

offers options to maintain quality:

**TIP FORCE MONITORING** Welding force is monitored using a solid state differential pressure transducer or load cell. Every weld automatically starts at the same precise point to eliminate the need for SQUEEZE TIME. This option also checks the TIP FORCE at the end of each weld to be sure it has remained within the customer set window.

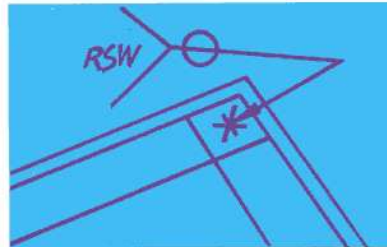
**CONSTANT WELD CURRENT** Totally closed loop feedback system maintains welding current. This option allows setting of weld programs in actual AMPS to eliminate trial-and-error setups. Also includes a current monitor function to reject out of range welds.

**HEAT STEPPER** Maintains weld quality on galvanized and other coated metals as it compensates for electrode pick-up. Simple input of only four keystrokes eliminates complex calculations required on other brand Heat Steppers.

**PRINTER PORT** RS-232 or RS-485 serial port to capture weld current, electrode force, line voltage, and fault indicators. Can be supplied for connection to an outside printer or PC, or can be supplied with a factory installed miniature built-in printer.

# The Unitrol Solution...

has something for everyone



## Welding Engineer

The sky's the limit. The Unitrol Solution lifts *all* restrictions. Now you can easily weld difficult jobs you previously stayed away from -- galvanized, projections, aluminum, coated, stainless, cross wire, exotics -- as well as common metals with complete reliability.

Every Unitrol Solution welding control is shipped with all the welding functions you'll ever need. Functions you'd pay extra for on other controls are included in the Unitrol Solution at no extra cost.



## Welding Department Foreman

Now you can have what you've been long waiting for. An easy to use weld control that drastically reduces your setup time, calculates required pressure gauge setting, electronically counts *completed* weldments, and allows you to consistently produce quality parts. Keeps 75, yes 75 complete, instantly available welding schedules.

And when it comes to communications, the Unitrol Solution really speaks your language. In fact, the control displays in many languages to help your operators use the simple controls. Languages included Standard: Spanish, Polish, German, French and English.

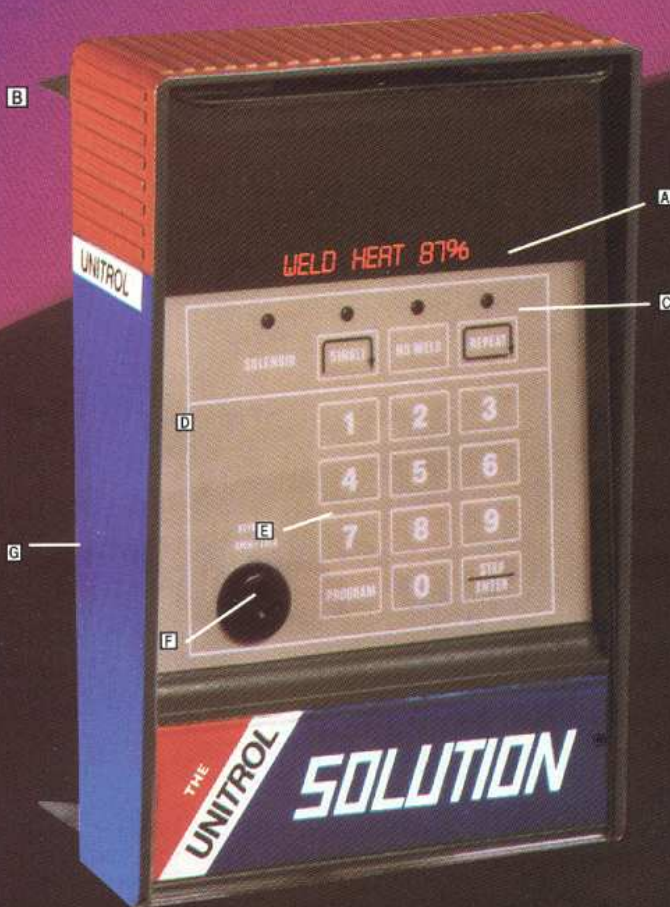


## Plant Management

At last, a welding control that will expedite parts more smoothly through your welding department enabling other departments to coordinate more efficiently. No more being held up by lack of welded components or reweld problems.

The Unitrol Solution helps your plant's welding department flow more smoothly, supports JIT (just in time) programs, gives you more usable parts per shift, and helps increase your operating profit.

# The Unitrol Solution... comes with everything you need



**A 16 or 32 Digit Alpha-Numeric Read-Out**

Shows instructions in simple full word form. Just answer questions displayed. No special codes or sequences to learn.

**B Universal Mounting Bracket**

Allows convenient operator station mounting of console.

**C LED Indicators**

Keeps operator aware of mode selected, single, no-weld, or repeat, and indicates solenoid operation.

**D Hinged Polycarbonate (Lexan™) cover**

Keeps dirt and sparks away from keypad.

**E Tactile Keypad**

Familiar telephone style layout provides fast and uncomplicated setup.

**F Keylock Switch**

Restricts access to programs so no unauthorized changes can be made.

**G Cast Steel Case**

Provides the durability needed for shop floor environment. Can be easily mounted anywhere on your welder.

OR

**Optional Cabinet Styles**

Various one piece control cabinet styles are available. See back cover for descriptions.

## OPERATING FEATURES

**Microcomputer Control System** offers ultimate flexibility with minimum components.

**Factory Programmed Software** to handle All welding functions - now and in the future.

**All Standard NEMA Weld Functions** built-in and usable on all schedules.

**75 Schedule Memory** with all NEMA functions in each program.

**Consistent welder output** is assured with the Automatic Voltage Compensation (AVC). This option maintains welder output at  $\pm 2\%$  with an input line voltage variation of  $\pm 12\%$ .

**Electronic Counter** automatically displays welds made or completed parts welded.

**Water Saver Circuit** to drive 115 volt solenoid valve, conserve water and protect operator during tip replacement.

**Multi-Lingual Read-Out Display** instantly keypad selectable for English, Spanish, French, Polish, or German.

**Tip Pressure Calculation** automatically calculates required pressure gauge setting for desired tip force.

**Dual Level Initiation:** Level A closes tips, Level B starts weld.

**Anti-Tie Down** for double palm button use, keypad selectable for latching or momentary operation.

**Dual Heat:** Two totally independent schedules. **Positive or Negative First 1/2 Cycle Firing,** Keypad selectable.

**Half or Full Cycle Count,** Keypad selectable.

**Electronic Memory:** No battery required. Retains all data for an unlimited time. Returns to last used program after power is turned on.

## STANDARD HARDWARE FEATURES

**NEMA OUTPUT SAFETY RELAYS** provide double operator protection.

**Automatic Power Factor** requires no field calibration.

**Six Foot Interconnect Cable**-console can be mounted in any convenient location (other cable lengths available).

**Power Supply Cabinet** NEMA 12/13 (Dust, Dirt and Splash Tight).

**Universal Mounting Bracket Kit** supplied for easy mounting.

**Voltage Selectable:** STANDARD SERIES = 208 through 575 volts. SERIES M = 115 through 575 volts. 60 Hz or 50 Hz (specify). 1Ø, 3Ø.

**Solenoid Driver** 115 VAC, 1 amp. continuous, fuse protected, photo-optically isolated.

**Fully Programmable Controller** compatible.

**Utility Supply** 115 VAC 0.5 amp., fuse protected.

**Photo-Optically Isolated Inputs:** Initiation A (two stage) Initiation B (two stage), External no weld, Transformer overtemperature N.O. or N.C., Contactor overtemperature N.O. or N.C., Limit switch N.O., Pressure switch N.O., Emergency stop N.O.

## SERVICE FEATURES

**Complete Diagnostic Test** during each start-up.

**Fault Displays and Disables:** contactor overtemperature, transformer overtemperature, emergency stop, limit switch or pressure switch open.

**Troubleshooting Diagnostic LED Indicators** for all input and output functions, as well as all voltage supply levels.

**Field Selectable Oscilloscope** trigger points for all functions.

**Circuit Boards** utilize heavy duty quick disconnects for easy field replacement-no hard wiring of any kind required.

**Console and Power Supply** utilize a total of only two plug-in printed circuit boards. No separate terminal strips or remotely mounted components.

## AVAILABLE OPTIONS

■ Foot Switch Assembly ■ Seam Weld ■ Roll Spot/Seam Weld ■ Constant Current ■ Heat Stepper ■ Solid State Pressure Transducer ■ Feedback Brazing Systems ■ External Data Input/Output ■ Additional 16 digit display ■ Force delay

# Specifying and ordering the Unitrol® Welding Control is as easy as using it.

Just follow these easy steps to select a SOLUTION® that matches your welder:

1. Find the **primary voltage** of your welder in the **red** area of the chart below.
  2. Move **downward** from this **primary voltage** and circle the blue box that includes the KVA as shown on the nameplate of your welder.
  3. From this point, move to the **right** for the SOLUTION® Model Number in the column that lists the desired **circuit protection** and **cabinet style** (see photos at right). Note that circuit breakers are recommended for most production welding systems.
- EXAMPLE: The correct single phase SOLUTION® controls with circuit breaker protection for a 50 KVA spot welder working at 460 volts are: #9180-810, 9180L-810, or 9180D-810 (depending on desired cabinet style).**
4. Order this model number from your authorized Unitrol representative or distributor who will recommend control options. All components are carried in factory stock for fast delivery. We can usually handle one day emergency control needs for "down" situations.
  5. Now get ready for the most unbelievable experience in resistance welding control today!

## SINGLE PHASE CONTROL SIZING CHART

WELDER PRIMARY VOLTAGE					MODEL NUMBERS			CABINET SIZE		
208 Volts	230 Volts	375 Volts	460 Volts	575 Volts	With Circuit Breaker	With High Speed Fuse	Without Protection	A	B	C
1-15 KVA	1-15 KVA	1-25 KVA	1-30 KVA	1-40 KVA	9180-990 9180L-990 9180D-990	9180-9FD 9180M-9FD 9180L-9FD 9180D-9FD 9180R-9FD	9180-900 9180M-900 9180L-900 9180D-900 9180R-900	20	20	9
16-30 KVA	16-35 KVA	26-50 KVA	31-65 KVA	41-80 KVA	9180-810 9180L-810 9180D-810	9180-8GD 9180M-8GD 9180L-8GD 9180D-8GD 9180R-8GD	9180-800 9180M-800 9180L-800 9180D-800 9180R-800	20	20	9
51-75 KVA	36-80 KVA	51-130 KVA	66-170 KVA	81-200 KVA	9180-620 9180L-620 9180D-620	9180-6HD 9180M-6HD 9180L-6HD 9180D-6HD 9180R-6HD	9180-600 9180M-600 9180L-600 9180D-600 9180R-600	20	20	9
76-120 KVA	81-130 KVA	131-200 KVA	171-250 KVA	201-325 KVA	9180-630 9180L-630 9180D-630	9180-6JD 9180M-6JD 9180L-6JD 9180D-6JD 9180R-6JD	9180-600 9180M-600 9180L-600 9180D-600 9180R-600	24	24	9
121-200 KVA	131-250 KVA	201-450 KVA	251-500 KVA	326-600 KVA	9180-440 9180L-440 9180D-440	9180-4KD 9180L-4KD 9180D-4KD 9180R-4KD	9180-400 9180L-400 9180D-400 9180R-400	30	30	13

**COMPLETE 1Ø RETROFIT SYSTEMS WITHOUT POWER CABINETS**  
 For use with existing SCR Contactors ..... 9180-SCO, 9180M-SOO, 9180-SOO  
 For use with existing Ignitron Tubes ..... 9180-GCO, 9180M-GOO, 9180-GOO

## THREE PHASE CONTROL SIZING CHART

WELDER PRIMARY VOLTAGE				MODEL NUMBERS				CABINET SIZE			
208 & 230 Volts		375 Volts	460 Volts	575 Volts	FREQUENCY CONVERTER		D.C. SECONDARY		A	B	C
		1ø 50 KVA	1ø 65 KVA	1ø 80 KVA	With Circuit Breaker	Without Protection	With Circuit Breaker	Without Protection			
		76-150 KVA	131-200 KVA	171-250 KVA	9380-610	9380-600	9480-610	9480-600	36	30	13
		76-150 KVA	131-200 KVA	171-250 KVA	9380-620	9380-600	9480-620	9480-600	36	30	13
		151-200 KVA	201-450 KVA	251-500 KVA	9380-430	9380-400	9480-430	9480-400	36	30	13
		151-200 KVA	201-450 KVA	251-500 KVA	9380-440	9380-400	9480-440	9480-400	36	36	13

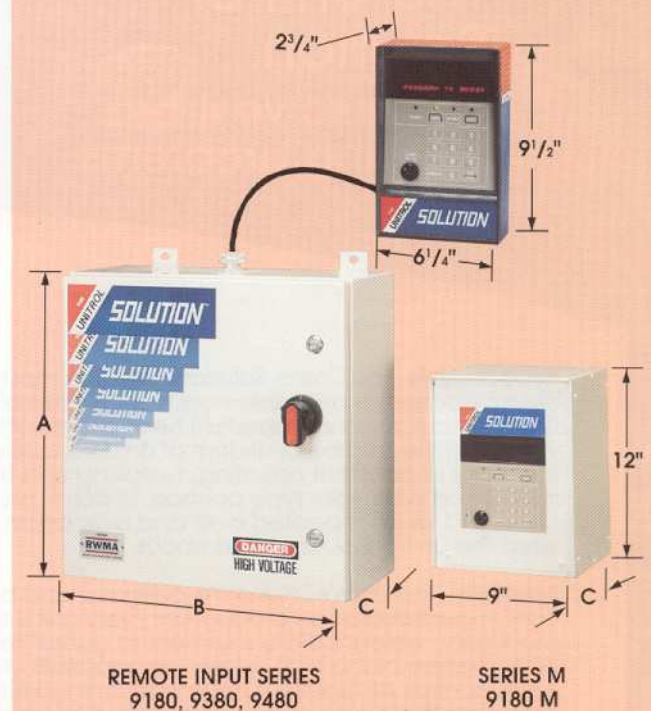
**COMPLETE 3Ø RETROFIT SYSTEMS WITHOUT POWER CABINETS**  
 Frequency Converter Control for use with existing SCR Contactors ..... 9380-SOO  
 Frequency Converter Control for use with existing Ignitron Tubes ..... 9380-GOO  
 3Ø D.C. Secondary Control for use with existing SCR Contactors ..... 9480-SOO  
 3Ø D.C. Secondary Control for use with existing Ignitron Tubes ..... 9480-GOO

## 5 YEAR WARRANTY

Your investment is protected by the exclusive Unitrol 5 year Limited Warranty. Factory labor and parts (excluding fuses) are fully covered for the first year. This warranty is extended for an additional 4 years on a Pro Rata basis (exclusive of fuses, SCR, circuit breaker, and transducers).

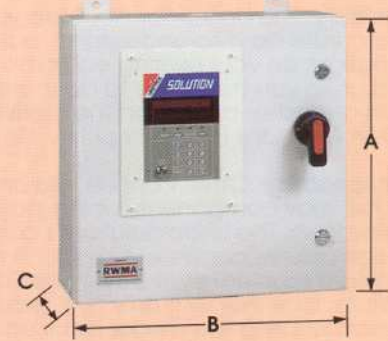
Parts and Labor are FOB our factory. Warranty card included with each system gives full details of this limited warranty along with all other conditions of coverage.

## CABINET STYLES

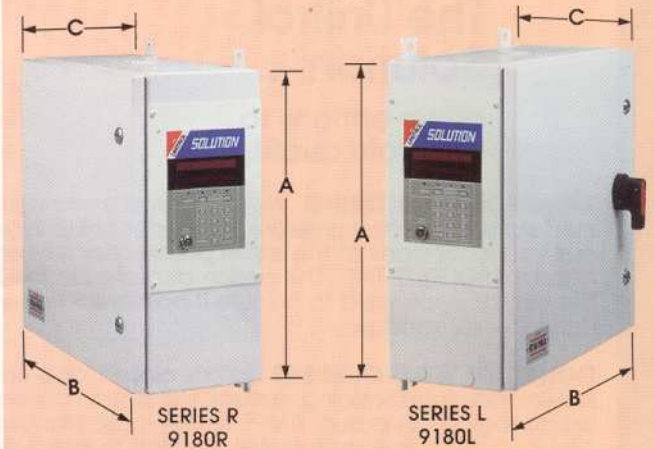


REMOTE INPUT SERIES  
9180, 9380, 9480

SERIES M  
9180 M



SERIES D  
9180D



SERIES R  
9180R

SERIES L  
9180L

# UNITROL



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