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Phasemaster 6/7/7S

resistance welding Programmable AC Welding Controls

- User-friendly displays
- Half-cycle welding
- Automatic line voltage compensation
- Up to 128 discrete weld schedules
- Remote schedule selection for use in automated systems
- Up to 10 programmable weld functions



Both the Phasemaster 6 (PM6) and the Phasemaster 7 (PM7) are single-phase, sequence welding controls which effectively address many precision, small parts resistance welding applications. Both can be used with manual or air actuated weld heads and are compatible with Miyachi Unitek's exclusive Unipulse® transformers.

The value-priced, microprocessor controlled PM6 features a simple digital display and is able to save up to 8 different weld schedules, 7 of which are protected from unauthorized or inadvertent changes by Miyachi Unitek's schedule protection feature. The final schedule serves as a scratch pad from which anyone can perform occasional or developmental jobs without jeopardizing the integrity of the production line. The remote schedule selection feature allows the PM6 to reliably select weld schedules in an automated environment.

The full featured PM7 has 10 programmable welding functions and exclusive, context-sensitive help screens to quickly guide the user through even the most complex program. A unique automatic step feature makes it possible to step to a new schedule after a preset number of welds to compensate for electrode wear. PM7 allows operators to program up to 128 different weld schedules, 127 of which can be protected from changes by the schedule protection feature. As with PM6, the final schedule may be used as a scratch pad.

PM7S includes the Weld Sentry® weld monitor. The Weld Sentry measures changes in weld voltage and current over user-definable time and analyzes the results with its built-in SPC capability. The built-in Sentry can identify trends and alert the operator, isolate potential quality problems, monitor electrode wear, detect missing or mispositioned parts, trigger external alarms and switches, perform SPC analyses, and help meet TQM and ISO 9000 requirements.



A PM6 system with Model X5 Unipulse Transformer and Model 180A air actuated weld head.



An integrated line of high performance transformers is available to complete your Phasemaster welding system.

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PHASEMASTER 6, 7 & 7S SPECIFICATIONS

	PM6	PM7/7S
Control	NEMA type BS2HX synchronous welding control.	
Welding Functions	Sequence	10 functions: sequence, sequence repeat, preheat/postheat, up/downslope, quench/temper, unbalanced AC, rollspot, braze, continuous/seam, and basic weld.
Line Voltage	Single phase 100, 115, 208, 230, or 460 VAC, 50/60 Hz. Controls are shipped wired for 230 VAC unless otherwise specified.	
Output Current	28 amps at 50%, 70 amps at 8%, 200 amps @1% duty cycle	
Weld Schedules	Operator can save (write) 8 different weld schedules. Schedule protection feature protects schedules 1 through 7 from unauthorized or inadvertent changes.	Operator can save (write) 128 different weld schedules. Schedule protection feature protects schedules 1 through 127 from unauthorized or inadvertent changes.
Automatic Line Voltage Compensation	Compensates for line voltage changes of +/- 13%	
Power Factor Correction	Ensures that actual welding current is within +/- 3% of the value selected, regardless of the power factor of the load.	
Remote External Input Connectors	Provided for the following control signals: emergency stop input, remote weld inhibit, and remote weld schedule selection. Use dry relay contact or optocouplers.	
Valve Driver Outputs	24 and 115 VAC, 15 volt-amps to control a solenoid on an air actuated weld head.	Two (2) 24 and 115 VAC, 15 volt-amps to control a solenoid on either one or two air actuated weld heads.
Relay Outputs	n/a	Two relays, capable of switching up to 250mA. Relay 1 and relay 2 provide status signals to external devices. Relay 1 can switch a 24 to 115 VAC signal or be used to control a second 24 VAC air actuated weld head. Relay 2 can switch a 5 to 50 VDC signal. When used for status signals, these relays can be independently programmed to close (a) during any period of the weld sequence (b) when the PM7 is waiting for the weld sequence to start; and/or when an alarm occurs.
Built-in Weld Counters	n/a	Allows user to control events which are a function of the number of welds which have been made.
Weld Sentry	n/a	Optional. Measures weld voltage and current within user definable time windows. Analyzes results via built-in SPC. Refer to datasheet 991-091 for more information.

PHYSICAL CHARACTERISTICS

	PM6	PM7
L x W x H Inches (mm)	10 x 9 x 8 (254 x 229 x 203)	13 x 11 x 9 (330 x 279 x 229)
Weight Lbs. (Kg)	15 (7)	25 (11)

UNIPULSE TRANSFORMER SPECIFICATIONS

Operate at a 50% duty cycle (30 welds per second) when the weld period is an integral number of cycles and up to 5 welds per second in unipolar, half-cycle operation.

Model	Primary Voltage	Input KVA @ 8%	Input KVA @ 50%	Taps Prim/Sec	Output Voltage Range/Steps	Short Ckt. Current	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)	Weight Lbs (Kg)
X2/115RF	115	1.9	.75	4/0	3.8-1.0/4	2400	6.5 (165)	6.5 (165)	11.0 (279)	20 (9)
X2/230RF	230	1.9	.75	4/0	3.8-1.0/4	2400	6.5 (165)	6.5 (165)	11.0 (279)	20 (9)
X2/115	115	2.5	1.0	4/0	3.2-2.0/4	2300	6.5 (165)	6.5 (165)	11.0 (279)	20 (9)
X2/230	230	2.5	1.0	4/0	3.2-2.0/4	2300	6.5 (165)	6.5 (165)	11.0 (279)	20 (9)
X5/115HV	115	4.5	1.8	4/2	14-1.8/24	1800	8.3 (211)	6.6 (168)	9.6 (244)	60 (27)
	230	4.5	1.8	4/2	14-3.5/12	1800	8.3 (211)	6.6 (168)	9.6 (244)	60 (27)
X8/230	230	8.0	3.2	8/0	5.8-3.0/8	9200	13.0 (330)	7.0 (178)	14.0 (356)	90 (41)
X16/230	230	16.0	6.4	3/2	5.6-1.4/9	16000	13.0 (330)	7.5 (191)	14.0 (356)	95 (43)
X16/460	460	16.0	6.4	3/2	5.6-1.4/9	16000	13.0 (330)	7.5 (191)	14.0 (356)	95 (43)

ORDERING GUIDE

Specify PM6 or PM7	Add/XXX for voltages other than 230 VAC where XXX is the line voltage. Example: PM6/115 for 115 VAC operation.
Specify PM7S	For built-in Weld Sentry
Required Accessories	Weld transformer, weld head, footpedal for manual heads, footswitch for air heads.

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