

PS-6144 Controller Specs

Electrical

Input Power	20-30 VDC. Keypad/display is powered from controller.
Input Current	500 mA maximum (control only)
Power Consumption:	35 W
Permanent Memory:	EEPROM (no battery required)
Accessory Power Out:	20-30 VDC, 250 mA Max (same source and voltage as input power)

Environment

Operating Temp:	0° to 55°C (32° to 131°F)
Storage Temp:	-40° to 70°C (-40° to 160°F)
Humidity:	95% maximum relative non-condensing
NEMA Rating:	Keypad/Display: NEMA 4

Physical

Overall Dimensions:	See Figure 4
Weight:	Controller: 3.5 lbs (1.6 kg). Keypad/Display: 0.5 lbs. (0.2 kg)

Mounting

Controller:	Brackets accept EN-50035 ("G" profile) or EN-50022 ("Top Hat" profile) DIN rail.
Keypad/Display:	Mounts up to 1000' from controller. Multiple keypads may be connected to one controller.

Inputs

DC Inputs:	16 sinking or sourcing DC inputs, optically isolated.
Input ON State Voltage:	10-30 VDC
Input Current:	11 mA @ 24 VDC
Program Select Response:	100 ms typical; may be longer with large numbers of setpoints.
Response of All Other Inputs:	1-2 scans

Outputs: PS-6144-24-(P16 or N16)M09

Real World Outputs:	Up to nine Slimline modules may be mounted on controller. Modules may be any mix of AC, DC, reed relay, and up to two analog. All modules optically isolated.
DC (Transistor) Outputs:	16 sinking (N16) or sourcing (P16), optically isolated. Sinking or sourcing must be specified on order.

Outputs: PS-6144-24-M17

Real World Outputs:	Up to 17 Slimline modules may be mounted on controller. Modules may be any mix of AC, DC, reed relay, and up to two analog. All modules optically isolated.
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Analog Output

Output Types:	4-20 mA or 0-10 VDC, proportional to RPM.
Resolution:	12 bit
Update Frequency:	10 times/sec minimum
Linearity:	±0.3% of full scale @ 25°C (77°F)
Set-up:	Offset and full scale RPM are programmable.

Operation

Scan Time:	300-500 ms (exact time determined by programming) For higher speeds, interrupt-driven versions available—consult factory.
Position Resolution:	10 bits (1024 increments). 12 bits (4096 increments) available with "-H" option.
Speed Compensation:	Programmed in 0.1 msec steps. 16 individually compensated outputs max. Updated ten times per second. Separate leading/trailing edge compensation available with option "-L" (update time typically five times per second).
Output Timeout:	1.0 ms time base (accuracy: +1, -0 ms)
Number of Timed Outputs:	Four maximum
Multiple Programs:	48 programs standard (256 available with "-F" Option)
Total Pulse Memory:	1258 pulses standard (4589 available with "-F" Option)
Pulses per Program:	512 maximum standard (512 available with "-F" Option)
Pulses per Output:	512 maximum standard (512 available with "-F" Option)
Maximum Speed:	3000 RPM

RS-232 Serial Communication

Port Types:	1 RS-282 or 1 RS-422/485—R-485 can be configured as a "Multi-Drop" network.
Baud Rates:	4800, 9600, 19.2K, 38.4K

Slimline Output Module Specifications

AC Outputs

Part # EC-OAC240-3

Output Voltage:	24 VAC rms minimum 280 VAC rms maximum
Output Current:	30 mA rms minimum 3 amps rms maximum @/below 35°C (95°F). Above 35°C derate 50 mA/°C (27.8 mA/°F)
Input Voltage:	5 VDC nominal 8 VDC maximum
Turn On Time:	100 µs maximum @ 60 Hz
Turn Off Time:	8.3 ms maximum @ 60 Hz
Off State Leakage:	2 mA AC rms @ 120 VAC rms, 60 Hz
Operating Temp.	-30°C to +70°C (-22° to +158°F)

DC Output, 60 VDC

Part # EC-ODC060-3

Output Voltage:	0 to 60 VDC
Output Current:	3 amps DC @/below 35°C (95°F) Above 35°C derate 35.7 mA/°C (19.8 mA/°F)
Turn On Time:	50 µs maximum
Turn Off Time:	50 µs maximum
Off State Leakage:	1 µA DC maximum @ 24 VDC
Operating Temp.	-30°C to +70°C (-22° to +158°F)

DC Outputs, 200 VDC

Part # EC-ODC200-1 (SLIMLINE)

Output Voltage:	0 to 200 VDC
Output Current:	1 amp DC @/below 45°C (113°F). Above 45°C derate 18 mA/°C (10 mA/°F)
Turn On:	50 µs maximum
Turn Off:	50 µs maximum
Off State Leakage:	1 µA maximum
Operating Temp.	-30°C to +70°C (-22° to +158°F)

Analog Output, 0-10 VDC

Part # EC-SANL-010V

Resolution:	12 Bits (4096 Increments)
Output Voltage:	0 to 10 VDC
Output Current:	10 mA maximum
Load Resistance:	1 K Ohm minimum
Linearity:	±0.3% full scale @ 25°C (77°F)

Analog Output, 4-20 mA

Part # EC-SANL-420M

Resolution:	12 Bits (4096 Increments)
Output Current:	4 to 20 mA DC
Load Resistance:	450 Ohm maximum
Linearity:	±0.3% full scale @ 25°C (77°F)

Reed Relay

Part# EC-ORR000-0 (SLIMLINE)

Output Type:	N/O Reed Relay Contacts
Contact Rating:	10 VA maximum
Switching Voltage:	100 VDC or 130 VAC maximum
Switching Current:	0.5 A maximum
Carry Current:	1.5 A maximum
Turn On Time:	500 ms
Turn Off Time:	500 µs
Mechanical Life:	5 x 10 ⁶ cycles
Operating Temp:	-30 to +70°C (-22° to +158°F)

Transistor Output Specifications

Sinking Transistor Output	Part # PS-9011-2803	Output Type:	Current Sinking (NPN)
		Output Voltage:	5 to 30 VDC
		Output Current:	50 milliamp cont. max (each output)
Sourcing Transistor Output	Part # PS-9011-2580	Output Type:	Current Sourcing (PNP)
		Output Voltage:	5 to 30 VDC
		Output Current:	50 milliamp cont. max (each output)

Resolver Specifications

Operating Temp:	-40° to 125°C (-40° to 257°F)
Storage Temp:	-40° to 125°C (-40° to 257°F)
Operating Humidity:	95% Relative non-condensing
NEMA Rating:	NEMA 4 NEMA 4X
Maximum RPM:	3000 RPM
Max Cable Length:	1000 Ft.
Type:	Single Turn - Brushless
Resolution (all):	12 Bits (4096 increments)
Linearity (standard):	+/-20 arc minutes (resolver only) (+/-30 arc minutes combined with R/D converter in controller)
Linearity (specials):	+/-3 to +/-10 arc minutes (resolver only) (+/-7 to +/-14 arc minutes combined with R/D converter in controller)

Note: A resolver's linearity errors are repeatable at all positions of its 360 degree rotation. Therefore, once appropriate setpoints are established, machine performance is consistent every cycle.

Factory Defaults

Analog Outputs	
Quantity:	0
Offset:	0
High RPM:	2000
Communications	
Type:	RS-485
Baud Rate:	9600
Default Program:	1
Enable Codes	
Operator:	1
Setup:	2
Master:	3
Enable Options:	ON for all functions
Increasing Direction:	CCW
Input ANDing:	OFF
Keyboard Quantity:	1
Motion ANDing:	OFF
Motion Detection:	Lo 10 RPM, Hi 3000 RPM both levels
Offset:	0
Per Channel Enable:	All channels ON
Program Select Mode:	BIN (Binary)
Rate:	1X, RPM
RPM Update:	1/S
Output Enable ANDing:	OFF
Speed Comp:	All channels 0
Toggle RPM:	20 RPM

PLuS 6144 Setpoint Record

Date: _____

PLuS Program #: _____

Description: _____

CHN	Group	Mode	On	Off	ANDED With...		Timed Output	Speed Comp	Comments (multiple pulses, etc.)
					Output Enable	Motion Level #			
1	_____	_____	_____	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____	_____	_____	_____
6	_____	_____	_____	_____	_____	_____	_____	_____	_____
7	_____	_____	_____	_____	_____	_____	_____	_____	_____
8	_____	_____	_____	_____	_____	_____	_____	_____	_____
9	_____	_____	_____	_____	_____	_____	_____	_____	_____
10	_____	_____	_____	_____	_____	_____	_____	_____	_____
11	_____	_____	_____	_____	_____	_____	_____	_____	_____
12	_____	_____	_____	_____	_____	_____	_____	_____	_____
13	_____	_____	_____	_____	_____	_____	_____	_____	_____
14	_____	_____	_____	_____	_____	_____	_____	_____	_____
15	_____	_____	_____	_____	_____	_____	_____	_____	_____
16	_____	_____	_____	_____	_____	_____	_____	_____	_____
17	_____	_____	_____	_____	_____	_____	_____	_____	_____
18	_____	_____	_____	_____	_____	_____	_____	_____	_____
19	_____	_____	_____	_____	_____	_____	_____	_____	_____
20	_____	_____	_____	_____	_____	_____	_____	_____	_____
21	_____	_____	_____	_____	_____	_____	_____	_____	_____
22	_____	_____	_____	_____	_____	_____	_____	_____	_____
23	_____	_____	_____	_____	_____	_____	_____	_____	_____
24	_____	_____	_____	_____	_____	_____	_____	_____	_____
25	_____	_____	_____	_____	_____	_____	_____	_____	_____
91	_____	_____	_____	_____	_____	_____	_____	_____	_____
92	_____	_____	_____	_____	_____	_____	_____	_____	_____
93	_____	_____	_____	_____	_____	_____	_____	_____	_____
94	_____	_____	_____	_____	_____	_____	_____	_____	_____
95	_____	_____	_____	_____	_____	_____	_____	_____	_____
96	_____	_____	_____	_____	_____	_____	_____	_____	_____

Analog Outputs

Output Channel #: _____ ★ 4-20mA ★ 0-10 VDC Offset: _____ High RPM: _____
 Output Channel #: _____ ★ 4-20mA ★ 0-10 VDC Offset: _____ High RPM: _____

Global Settings

Motion Detection Levels

L1: _____ RPM
 L2: _____ RPM

Group Offsets

Group #1 Offset/Preset: _____ Group #4 Offset/Preset: _____
 Group #2 Offset/Preset: _____ Group #5 Offset/Preset: _____
 Group #3 Offset/Preset: _____ Group #6 Offset/Preset: _____

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