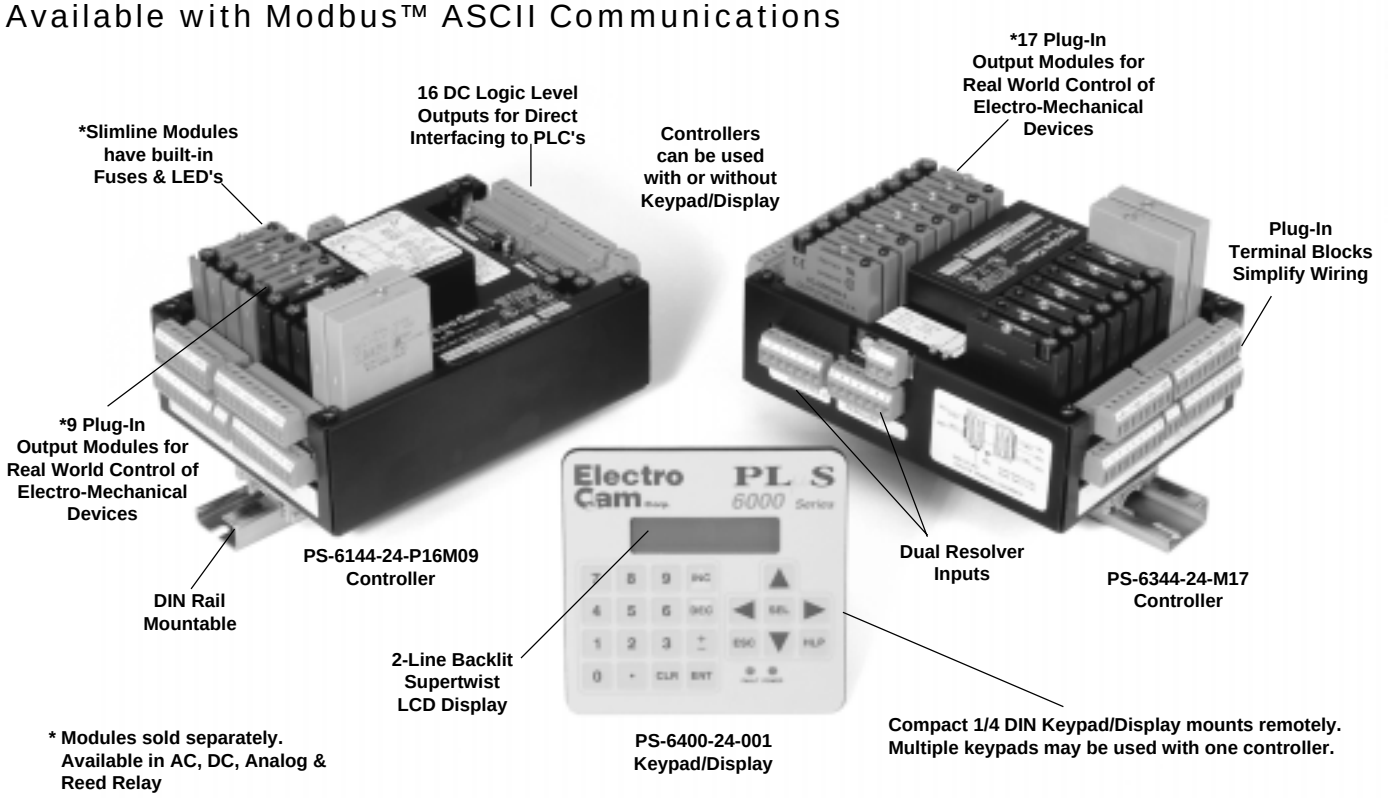
Electro Cam Corp.

PLµS Controls Div.

PS-6000 Series

Programmable Limit Switches

Available with Modbus™ ASCII Communications



Description

The PLµS PS-6144 Series Programmable Limit Switches are microprocessor based units designed to control machine functions on automated equipment. They can be used as stand-alone controllers, or interfaced to PLC's in larger automation systems.

The PLµS PS-6344 Programmable Dual Axis Limit Switch is designed to control machine functions on two independent axes. It can also be used as a stand-alone controller, or interfaced to PLC's in larger automation systems.

Typical applications include:

- Polybag Machines
- Labelling Machines
- Can Making Machines
- Form-Fill-Seal Machines
- Paper Converting Machines
- Pick & Place Machines
- Metal Processing/Stamping
- Adhesive Application Systems
- Automatic Assembly Machines
- Cartoners
- Case Packers
- Palletizers
- De-Palletizers
- Vision Systems
- Filling Machines
- Beverage Fillers
- High Speed Presses

Benefits

Improved Machine Control

Features such as automatic speed compensation, combined with fast scan times, enable a PLµS Controller to quickly respond to changes in line speed and product movement, minimizing machine errors and reducing scrap and downtime.

Easier Operator Control

By handling complex automation functions under rapidly changing line conditions, PLµS Controllers allow an operator to concentrate on product flow into and out of the line, instead of constantly monitoring the line for malfunctions and manually adjusting setpoints. PLµS Controllers increase operator interface capabilities and contribute to smooth, efficient production.

Faster Changeovers, Greater Flexibility

PLµS Controllers can store multiple programs of timing setpoints for solenoids, cylinders, motors, glue guns, and other mechanisms. This allows quick changes in product size or configuration, reducing downtime and improving productivity.

13647 Metric Rd • Roscoe, IL 61073 USA • 815-389-2620 • FAX 815-389-3304 • 800-228-5487 (USA & Canada)

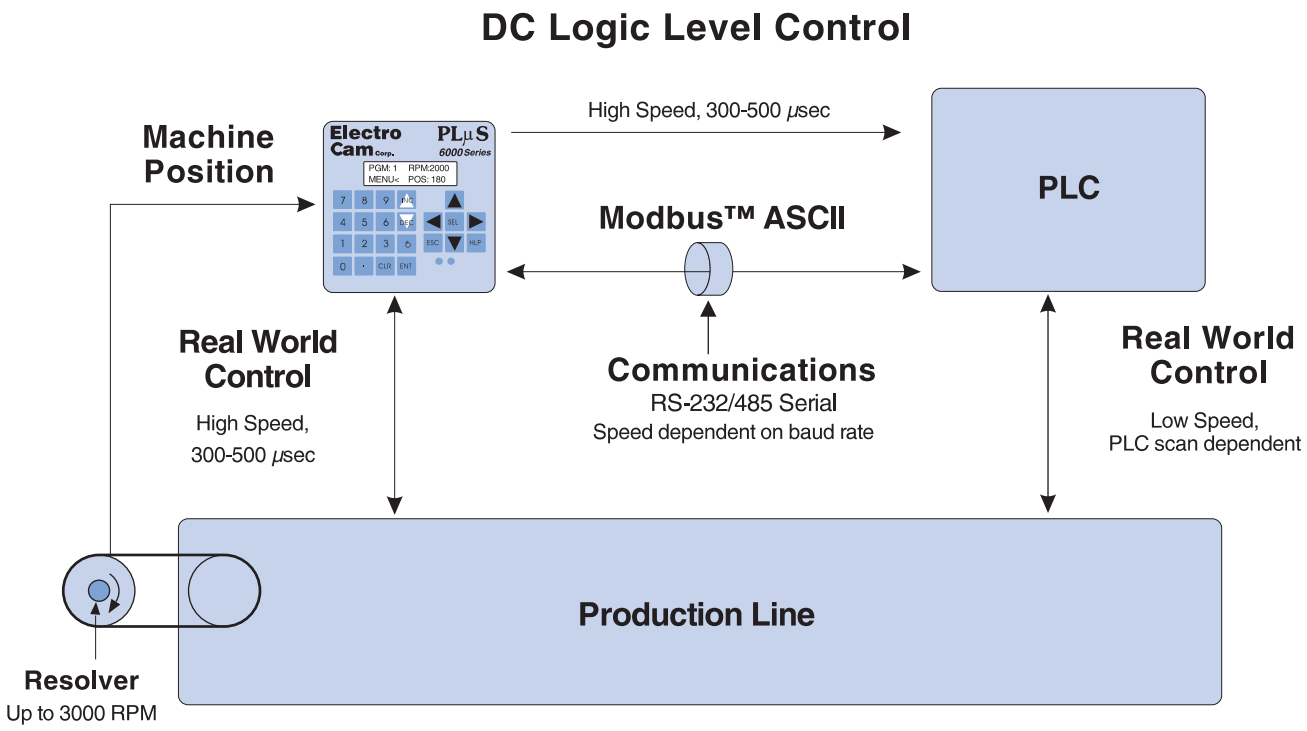


Figure 1

PLμS Controllers are Fast!
As the system in *Figure 1* shows, the PLμS monitors the production line every 300 to 500 μsec, approximately 100 times faster than an average PLC with its more extensive programming. Although the PLC does interface directly with the production line, the functions it controls are lower speed, and deals more with the logic functions necessary for machine control. For high speed, critical functions such as label-to-product registration, the PLμS provides faster control and improved precision, reducing scrap and rejects.

PLμS Controllers have Built-In DC Inputs & Outputs!
Using transistor outputs, the PLμS can signal changes to the PLC within 300 to 500 μsec (as fast as 40 μsec on special models); much faster than the serial communications speed of approximately 50 msec. When product sensors send a signal to the DC input of the PLμS, the PLμS responds to that signal quickly.

PLμS Controllers have Serial Communications!
For product changeovers, the PLC can send commands and operating parameters to the PLμS controller to change setpoint programs. This eliminates the need for an operator to manually change programs through the PLμS keyboard.

PLμS Controllers Save PLC Memory!
The PLμS controller can store many programs containing various setpoints for the production line. The PLC need only select the correct program, and the PLμS will do the rest.

PLμS Controllers Simplify PLC Programming!
By handling complex functions like speed compensation, timed outputs, and sensor gating, the PLμS controller relieves a programmer of having to write complicated PLC control programming from scratch. The PLC software can simply exchange process variables and control data with the PLμS controller, which handles direct high speed machine control through its own dedicated software.

PLμS Controllers Simplify Operator Interface Design!
Many production lines require an operator to select product sizes or configurations through a keyboard. The 1/4 DIN keypad/display of the PS-6000 can be mounted near the production machinery, giving an operator easy access to critical control functions. The keypad transmits these changes back through the PLμS controller to the PLC, eliminating the need for a PLC system designer to supply custom operator interface software and hardware for PLS functions.

Electro Cam Corp. has Systems Experience!
Our standard PLμS controllers feature extensive capabilities for integration into larger control systems, PLC based or otherwise. We can supply IBM-PC compatible PLuSNet software to facilitate communications between our controllers and a host computer. In addition, we can supply controllers with custom features such as shift-register capability, or the ability to function in non-rotary environments. For information on our systems capabilities, please call our toll free number.

800-228-5487

Standard PS-6000 Series Features

Analog Output
PS-6000 controllers can drive two analog output modules whose output signals will be linearly proportional to RPM. The analog signal level at zero RPM can be programmed, as well as the RPM that corresponds to maximum signal. No measuring equipment is required for initial setup, and calibration is not needed. Typical uses for the analog output are to control adhesive pressure as machine speeds change, or to match speeds of other equipment to the machine being controlled by the PS-6000.

Multiple Programs
Up to 48 programs can be stored in the control's memory, each containing different setpoints. To change product size or configuration, simply switch program numbers and all of the output settings will change accordingly. Program numbers can be selected by the keypad/display, mechanical switches, PLC DC outputs, or serial communication messages.

Output Speed Compensation
Speed compensation allows outputs to compensate for lagging response times of the controlled devices by turning on earlier as machine speeds increase. This eliminates the need to manually adjust output settings whenever machine speeds are changed, allowing high production speeds.

Internal High Speed Logic
Outputs can be divided into Groups, and each Group can be associated with an input device to perform discrete logic. There are six different modes of operation, or logic functions, that can be selected for each Group. For example, some modes activate the Group only when the input has signaled that product is present. Adhesive control is a typical application where outputs are disabled until product is sensed. Output grouping is a powerful tool in many applications because each Group can be in any of the six modes and operate independently of the other Groups.

Timed Outputs
Timed outputs are programmed like standard outputs to turn "ON" and "OFF" at specific points of resolver rotation. However, once a timed output turns ON, it will remain ON for a specified time period. Timed outputs are used to drive devices such as heat seal bars, spot welders, etc., that require a fixed time to perform a task, regardless of machine speed.

Selectable Scale Factor
The Scale Factor, or number of increments per revolution, can be programmed by the user. Standard controls have a maximum of 1024 increments per revolution, while controls available with an "-H" option have a maximum of 4096 increments per revolution. Scale Factor can be defined to correlate to Real World increments. For example, a controller could be programmed so that one increment of rotation corresponds to 0.1" of travel.

Serial Communication
Using Electro Cam Corp.'s PLuSNet software for IBM-PC compatible computers, the controller's entire program can be saved to a disk file or loaded from a disk file to the control. The program can be printed or edited using the computer. Using MMI software, it is also possible to send individual communication commands to the control, while running, to change settings in the program.

Motion Detection
Two speed ranges can be programmed into the controller, and specified outputs can then be enabled or disabled, based on the machine speed being within the designated range. This feature can turn off outputs if the machine stops; disable outputs until the machine reaches a minimum speed; or disable outputs if the machine exceeds a specified speed. In adhesive applications, speed range logic is often used to turn off the flow of adhesive if the conveyor carrying products stops.

Certifications are standard.

PS-6000 Series Options

Gray Code Position Output, "-G" & "-G10"
The "-G" option provides eight bits of position information to a PLC or other electronic control device, eliminating the need for expensive PLC accessory cards. The "-G10" option provides ten bits of position information. This allows the PLC to control non-critical machine functions, while the PLµS directly handles high-speed machine control.

High Resolution, "-H"
Controls with this option can divide the resolver revolution into as many as 4096 increments, while standard controls have a maximum of 1024 increments. The control program allows resolver resolution to be set for any value in the range of 2-4096.

Large Program Memory, "-F"
Controls with the "-F" option can store up to 256 programs consisting of not more than 4589 output pulses total; standard controls can store up to 48 programs. This additional program storage capability is useful for applications requiring multiple complex programs, or those requiring the storage of more than 48 programs.

Leading/Trailing Edge Speed Comp, "-L"
Controls with this option allow the "ON" and "OFF" edges of output pulses to be speed compensated by different amounts. If a device has "ON" and "OFF" response times that are different, it may be necessary to compensate the "ON" edge by a different amount than the "OFF" edge. This will ensure that the device stays properly synchronized to the machine over a wide range of speeds. High-speed adhesive application is an example that can benefit from this feature.

NEMA 4X Keyboard Boot, "-W"
Controls with the "-W" option are shipped with a clear silicon rubber boot fitted over and around the keyboard area. The boot provides a good seal between the back of the keyboard and the control panel. The boot is transparent and pliable, allowing the keyboard to be viewed and operated. In addition to preventing contamination from harsh chemicals, the boot protects the keyboard from washdown damage.

Modbus™ ASCII Communication, "-MB"
See page 4.

Multiple Controllers Used with One Resolver, "-MSV"
See page 5.

PS-6000 Series with -MB Option

— with Modbus ™ ASCII Communications

Description

Standard Modbus™ ASCII protocol allows a host computer, Programmable Logic Controller (PLC), intelligent touch panel, or other compatible logic circuitry to easily monitor or modify data within the PS-6000-MB while the machine is in motion.

The control data in the PS-6000-MB is organized as registers and coils, compatible with PLC programming techniques. Registers are used to store control parameters at specific addresses. Coils represent channel outputs and logic inputs. Through serial communications, coils allow outputs to be forced ON or OFF, and allow inputs to be monitored.

The data can be changed by writing to registers, and monitored by reading from registers. All controller data, including position, pulses, RPM, speed compensation, and timed output values, are available through registers.

NOTE: All other features of the -MB version of 6000 series controllers are the same as those for standard PS-6000 series controllers.

Benefits

Improved Machine Control
The controller quickly responds to changes in line speed and product movement by combining automatic speed compensation with fast scan times. Modbus serial communications makes it easy to integrate the PLµS controller's high-speed control characteristics into larger control systems.

Messaging Capability
The PLµS keypad/display can display stored messages or messages received from a host computer. Each message, containing up to 32 characters, is stored in non-volatile EEPROM memory.

Mapping
Mapping allows the programmer to arrange data into blocks of registers for optimal communication efficiency, giving direct access to specific indexed data items. For example, setpoint values may be mapped into a series of direct access registers in order to display more than one value at once on the host computer.

PS-6000-MB System Configuration

The Modbus™ ASCII protocol allows the PS-6000-MB Series controller to communicate with various control hardware and software, including:

- PC's using Microsoft® Windows™ software such as FactoryLink®, Intellution™, Lookout™, and Wonderware®
- PC's using DOS software such as Interact™
- Intelligent Touch Panels
- PLC's

As the diagram in *Figure 2* illustrates, the host computer communicates to the PLµS using Modbus™ ASCII serial communications. The PLµS controller handles high-speed machine functions through direct wiring of inputs and outputs to the machine.

The Modbus serial commands in the PS-6000-MB Series controller allow you to monitor the program, adjust the current program, or change the program through a host computer system. This allows the flexibility to change product size or configuration quickly and automatically, reducing downtime and improving productivity.

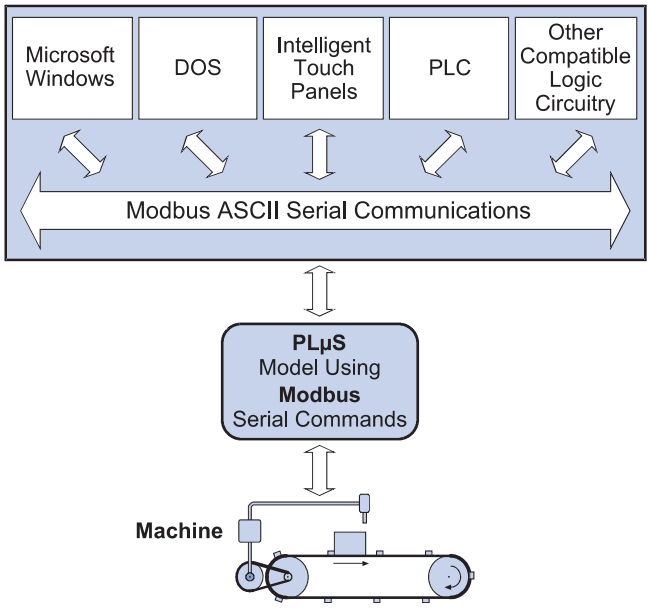


Figure 2

PS-6000 Series with -MSV Option

Description

The -MSV (Master-Slave) option allows up to four controllers to be daisy-chained to one resolver. Controllers with the -MSV option are equipped with a jumper that the user can plug/unplug to configure the unit to be either a **master** or a **slave**. The controller comes from the factory jumpered as a **master**, but can be set to **slave** status by removing the jumper. *Figure 3* shows jumper location:

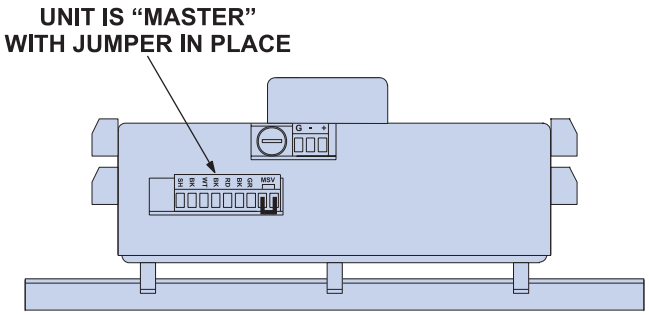


Figure 3

The wiring of the resolver is daisy-chained to all of the controllers as shown below in *Figures 4 & 5*. The master controller supplies the reference signal to the resolver and slave units. The resolver supplies the position information to all units. Only a single unit can be the master. Daisy-chain the power from controller to controller in the same way as the resolver signals. Connect one of the controllers directly to the power supply. Power for the other devices in the system should come directly from the power supply. DO NOT power other devices from the wires powering the controllers. This will help reduce the risk of problems associated with EMI and ground loops. Use the standard resolver cable from master to resolver. Use a PS-5300-05-XXX resolver cable from the master to slave controllers, and from slave to slave.

NOTE: PS-6344 Series Controllers include Master-Slave feature as standard.

All other features of the -MSV version of 6000 series controllers are the same as those for standard PS-6000 series controllers.

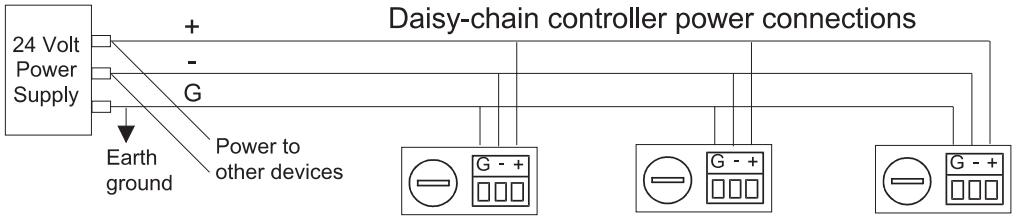


Figure 4

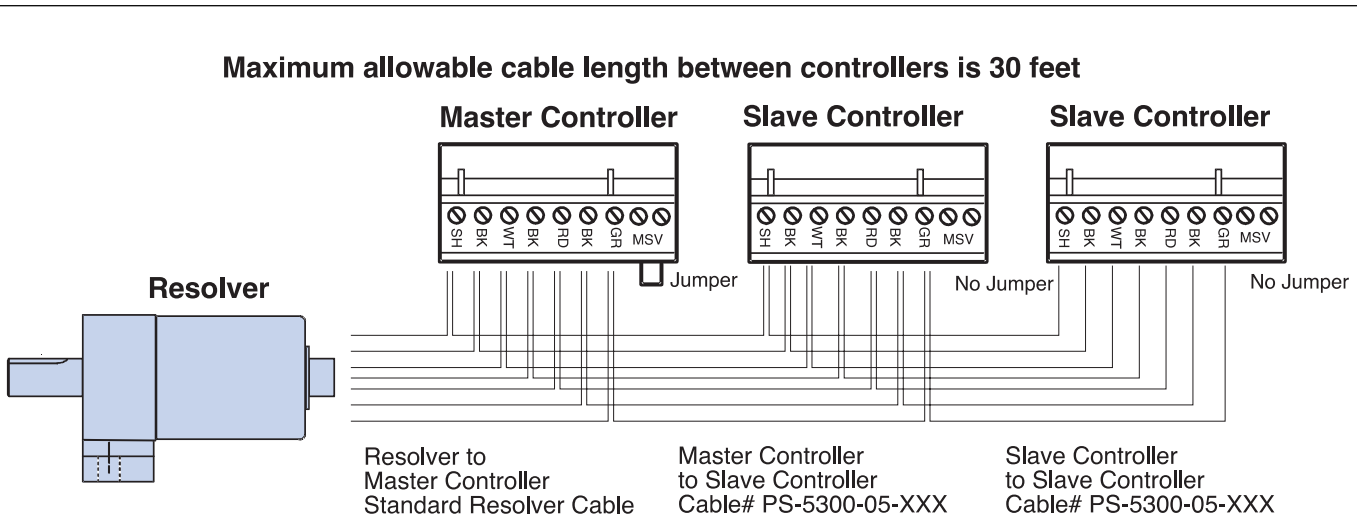


Figure 5

PS-6X44 Specifications

Controller Part Numbers	**PS-6144-24-P16M09** (Sourcing† Transistor Outputs) **PS-6144-24-N16M09** (Sinking† Transistor Outputs) **PS-6344-24-P16M09** (Sourcing† Transistor Outputs) **PS-6344-24-N16M09** (Sinking† Transistor Outputs)	**PS-6144-24-M17** **PS-6344-24-M17**
Electrical		
Input Voltage	20-30 VDC	20-30 VDC
Input Current	System: 850 mA max. @ 20 VDC. Includes controller, 2 keypads, resolver, 16 transistor outputs, 7 power modules, 2 analog modules, and 16 inputs, all ON. Current will be less at higher voltage. Controller only: 150 mA max. @ 20 VDC Controller, Resolver, 1 Keypad: 275 mA max @ 20 VDC	System: 850 mA max. @ 20 VDC. Includes controller, 2 keypads, resolver, 15 power modules, 2 analog modules and 16 inputs, all ON. Current will be less at higher voltage. Controller only: 150 mA max. @20 VDC Controller, Resolver, 1 Keypad: 275 mA max @ 20 VDC
Permanent Memory	EEPROM (no battery required)	EEPROM (no battery required)
Environment		
Operating Temp.	0° to 55°C (32° to 131°F)	0° to 55°C (32° to 131°F)
Storage Temp.	-40° to 70°C (-40° to 160°F)	-40° to 70°C (-40° to 160°F)
Humidity	95% maximum relative non-condensing	95% maximum relative non-condensing
NEMA Rating	For use on type 1, 4, 4X or 12 enclosure	For use on type 1, 4, 4X or 12 enclosure
Physical		
Overall Dimensions	See Dimensions (Figures 4 & 5) on page 8.	See Dimensions (Figures 4 & 5) on page 8.
Weight	Controller: 3.5 lbs. (1.6 kg). Keypad/Display: 0.5 lbs. (0.2 kg)	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.	Brackets accept EN-50035 ("G" profile) or EN-50022 ("Top Hat" profile) DIN rail.
Keypad/Display	Mounts up to 1000' from controller. Up to 2 keypads may be connected to one controller.	Mounts up to 1000' from controller. Up to 2 keypads may be connected to one controller.
Inputs		
DC Inputs	16 DC inputs; can be configured as sinking† or sourcing† in groups of 8. Optically isolated in groups of 8.	16 DC inputs; can be configured as sinking† or sourcing† in groups of 8. Optically isolated in groups of 8.
Input On State Voltage	10-30 VDC	10-30 VDC
Input Current	11 mA @ 24 VDC	11 mA @ 24 VDC
Input Response Times	1 - 2 scans	1 - 2 scans
Outputs PS-6144 Series		
Real World Outputs	Up to 9 SLIMLINE modules may be plugged into controller. Modules may be any mix of AC, DC, reed relay, & up to 2 analog. All modules optically isolated.	Up to 17 SLIMLINE modules may be plugged into controller. Modules may be any mix of AC, DC, reed relay, & up to 2 analog. All modules optically isolated.
Analog Outputs	Up to two 4-20 mA or 0-10 VDC SLIMLINE analog modules may be plugged into controller. Output proportional to RPM. 12 bit resolution. Update frequency 10 times/sec (100 msec). Linearity is ±0.3% @ 77°F (25° C). Offset & full scale RPM are programmable.	Up to two 4-20 mA or 0-10 VDC SLIMLINE analog modules may be plugged into controller. Output proportional to RPM. 12 bit resolution. Update frequency 10 times/sec (100 msec). Linearity is ±0.3% @ 77°F (25° C). Offset & full scale RPM are programmable.
DC (transistor) Outputs	16 sinking† or sourcing†, optically isolated. 30 VDC, 50 mA max. each. Note: Sinking† or sourcing† must be specified on order.	
Outputs PS-6344 Series	Outputs are assignable to each resolver.	Outputs are assignable to each resolver.

†See page 12 for sinking/sourcing definitions.

Specifications continued...

PS-6X44 Specifications (continued)

Controller Part Numbers	**PS-6144-24-P16M09** (Sourcing† Transistor Outputs) **PS-6144-24-N16M09** (Sinking† Transistor Outputs) **PS-6344-24-P16M09** (Sourcing† Transistor Outputs) **PS-6344-24-N16M09** (Sinking† Transistor Outputs)	**PS-6144-24-M17** **PS-6344-24-M17**
Operation		
Scan Time	300 to 500 µsec typical (exact time determined by programming). For higher speeds, interrupt driven versions are available — consult factory.	300 to 500 µsec typical (exact time determined by programming). For higher speeds, interrupt driven versions are available — consult factory.
Position Resolution	10 bits (1024 increments). 12 bits (4096 increments) available with "-H" option.	10 bits (1024 increments). 12 bits (4096 increments) available with "-H" option.
Speed Compensation	Programmed in 0.1 msec steps. 16 individually compensated outputs maximum. Calculations every 10 msec. Special algorithm prevents false firing under rapid acceleration and deceleration. Separate leading/trailing edge compensation available with "-L" option.	Programmed in 0.1 msec steps. 16 individually compensated outputs maximum. Calculations every 10 msec. Special algorithm prevents false firing under rapid acceleration and deceleration. Separate leading/trailing edge compensation available with "-L" option.
Output Timeout	1.0 msec time base (accuracy +1, -0 msec)	1.0 msec time base (accuracy +1, -0 msec)
Number of Timed Outputs	Four maximum	Four maximum
Multiple Programs	48 programs standard (256 available with "-F" option).	48 programs standard (256 available with "-F" option).
Total Pulse Memory	1258 pulses standard (4589 available with "-F" option).	1258 pulses standard (4589 available with "-F" option).
Pulses per Program	512 maximum standard (512 available with "-F" option).	512 maximum standard (512 available with "-F" option).
Pulses per Output	512 maximum standard (512 available with "-F" option).	512 maximum standard (512 available with "-F" option).
Maximum Speed	3000 RPM	3000 RPM
RS-232/485 Serial Communication		
Port Types	1 RS-232 or 1 RS-422/485 — RS-485 can be configured as a "Multi-Drop" network.	1 RS-232 or 1 RS-422/485 — RS-485 can be configured as a "Multi-Drop" network.
Baud Rates	4800, 9600, 19.2K, 38.4K	4800, 9600, 19.2K, 38.4K
Slimline Output Modules	**Part Numbers**	**Part Numbers**
0-60 VDC, 0-3 amps	EC-ODC060-3	EC-ODC060-3
0-200 VDC, 0-1 amp	EC-ODC200-1	EC-ODC200-1
24-280 VAC rms, 50/60 Hz. 0.02-3 amps	EC-OAC240-3	EC-OAC240-3
Reed Relay	EC-ORR000-0	EC-ORR000-0
Analog, 0-10 VDC	EC-SANL-010V	EC-SANL-010V
Analog, 4-20 mA DC	EC-SANL-420M	EC-SANL-420M
Keypad/Display **(Up to 2 keypad/displays can be used with one controller)**		
Keypad/Display w/Gasket	PS-6400-24-001	PS-6400-24-001
Cable, Keypad-to-Controller	PS-6300-01-XXX (XXX = length in feet)	PS-6300-01-XXX (XXX = length in feet)
Resolvers & Cables	Electro Cam Corp. offers a wide variety of resolver models, shaft sizes, & mounting configurations, including a stainless steel resolver. The cable required depends on the resolver. Contact Electro Cam for details.	Electro Cam Corp. offers a wide variety of resolver models, shaft sizes, & mounting configurations, including a stainless steel resolver. The cable required depends on the resolver. Contact Electro Cam for details.

Note: Controllers may be used with or without keypad/display.

†See page 12 for sinking/sourcing definitions.

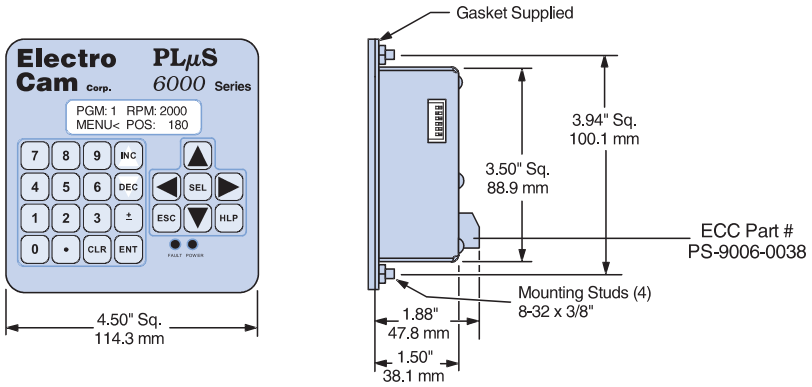


Figure 3

PS-6400-24-001 Keypad/Display

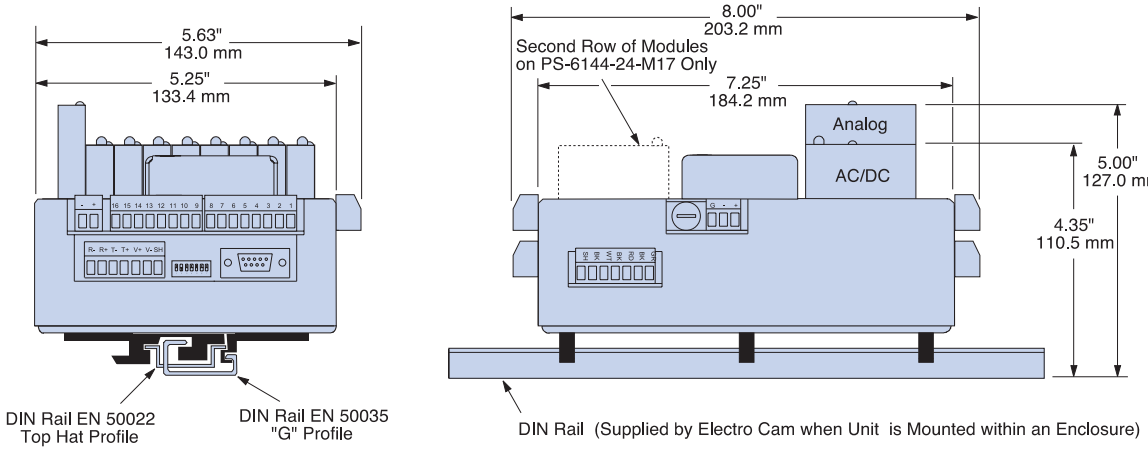


Figure 4

PS-6144-24-M17
PS-6144-24-P16M09 (Sourcing†)
PS-6144-24-N16M09 (Sinking†)

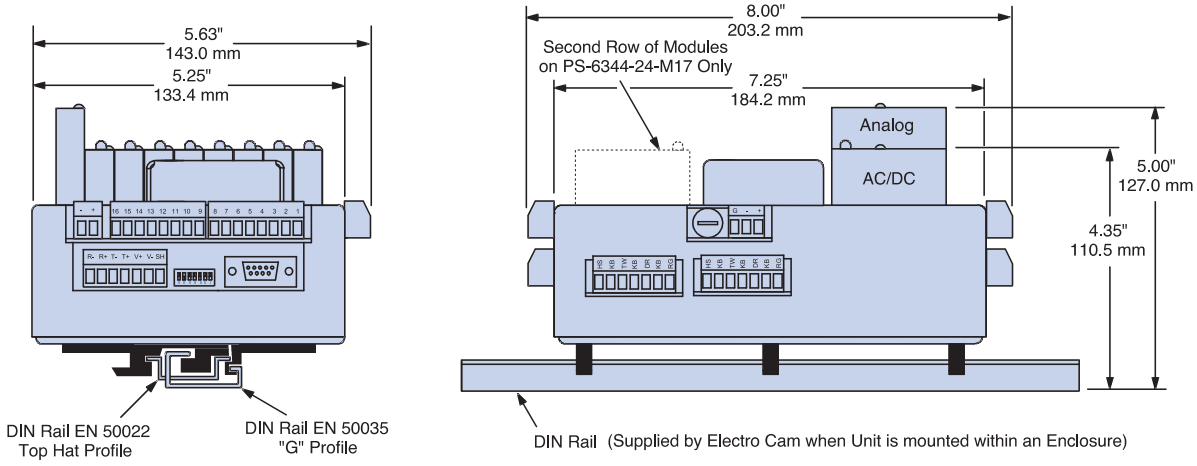


Figure 5

PS-6344-24-M17
PS-6344-24-P16M09 (Sourcing†)
PS-6344-24-N16M09 (Sinking†)

†See page 12 for sinking/sourcing definitions.

Resolvers

The 7-pin resolver connector is supplied as part of the PLµS Programmable Limit Switch Controllers effective with date code 9723. Prior to that date code, connectors were supplied on the resolver cables. Spare 7-pin resolver connectors that plug into controllers may be purchased under part number PS-5300-01-TER. Some resolver configurations are shown below. See Price List (Literature #202) for complete listing.



PS-5275-11-ADS
Foot Mount

- 3/4" Shaft
- Top side, Right side, Left side or Rear connection



PS-5238-11-ADR
Flange Mount

- 3/8" or 5/8" Shaft
- Top side, Right side, Left side or Rear connection



PS-5238-11-SDR
Servo Mount

- 3/8" Shaft
- Top side, Right side, Left side or Rear connection



PS-5262-11-CTG
Stainless Steel

- 5/8" Shaft
- Left side or Right side connection



PS-5275-051-ADL*
Foot Mount Geared

- 3/4" Shaft
- 5:1 Gear Ratio
- Top side, Right side or Left side connection

*Also available in 10:1 and 36:1 Ratio

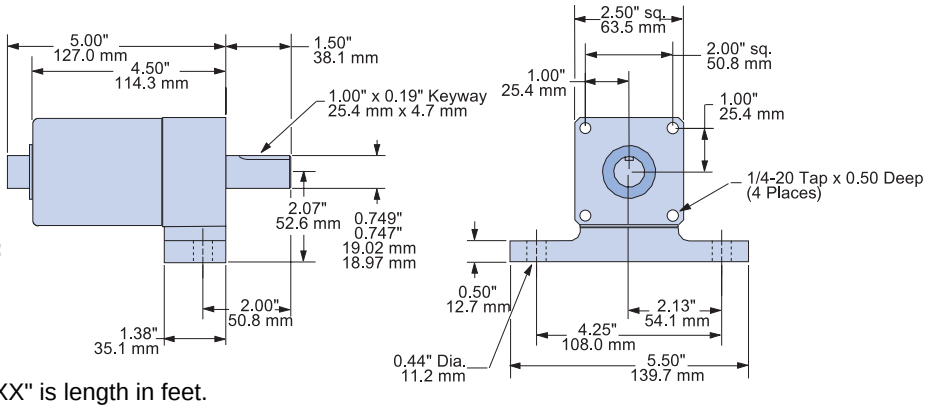


PS-5212-11-SVW
Unhoused Servo Mount

- .120" Shaft
- Standard Size 11

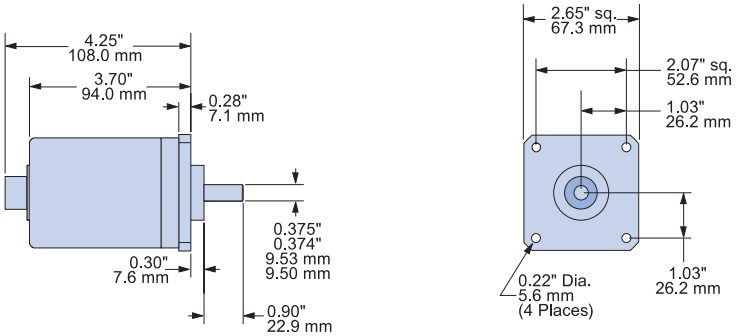
Resolver Dimensions

Foot Mount



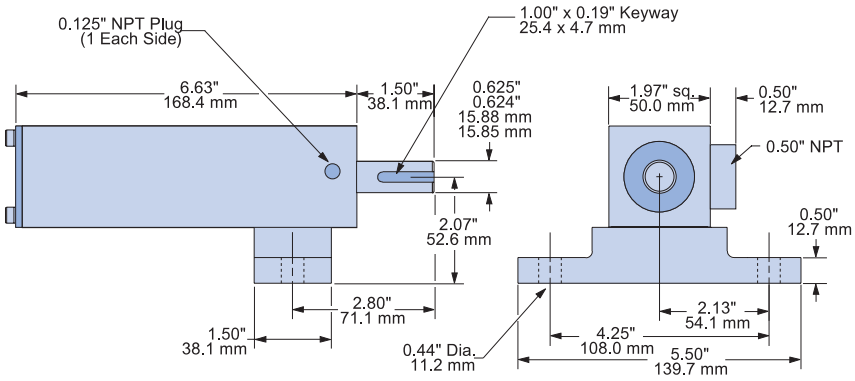
With Rear Connector (shown):
PS-5275-11-ADR
With Side Connector:
PS-5275-11-ADS
Cable:
PS-5300-01-XXX where "XXX" is length in feet.

Flange Mount



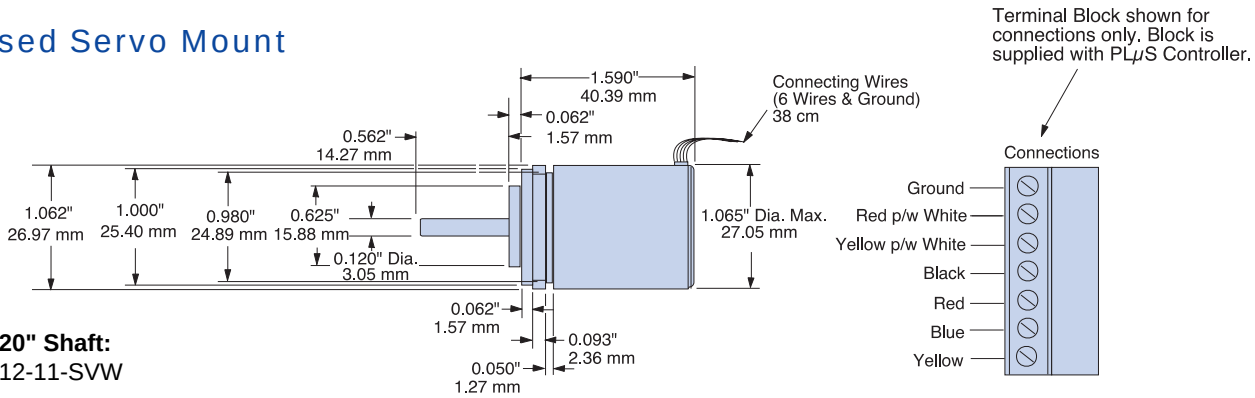
With Rear Connector (shown):
PS-5238-11-ADR
With Side Connector:
PS-5238-11-ADS
Cable:
PS-5300-01-XXX where "XXX" is length in feet.

Stainless Steel



With Right Connector (shown):
PS-5262-11-CTG
With Left Connector:
PS-5262-11-CTL
Cable:
PS-5300-02-XXX where "XXX" is length in feet.

Unhoused Servo Mount



Size 11, .120" Shaft:
PS-5212-11-SVW

Contact the Factory for detailed specifications on other available resolvers.

Controller Part Number Breakdown

P S - X X X X - X X - X X X(XXX) - X

PLuS Part Number

MODEL/DISPLAY SELECTION
6 - 1/4 DIN LCD Display

TRANSDUCER SELECTION
1 - Resolver Input
3 - 2 Resolver Input

INPUT/OUTPUT CONFIGURATION
4 - DC Transistor Outputs and/or SLIMLINE Modules on Keyboard/Controller back with input capability

FUNCTIONS
4 - Output Enable Modes & Standard Features

INPUT VOLTAGE
24 - (20 - 30 VDC Input)

OPTIONS
F - Additional setpoint/program storage
G - Gray Code Output (8 bit)
G10 - Gray Code Output (10 bit)
H - High Resolution (12 bit-4096)
L - Leading & Trailing Edge Speed Compensation
W - Washdown boot
MB - Modbus™ communication protocol available for PS-6X44 Models
MSV - Multiple Controllers used with one resolver

TYPE & NUMBER OF OUTPUTS
M17 - 17 SLIMLINE AC and/or DC Module Outputs, 2 of which may be analog
N16M09 - 16 DC Sinking† Transistor Outputs & 9 SLIMLINE AC and/or DC Module Outputs, 2 of which may be analog
P16M09 - 16 DC Sourcing† Transistor Outputs & 9 SLIMLINE AC and/or DC Module Outputs, 2 of which may be analog

Resolver Part Number Breakdown

P S - 5 2 X X - X X X - X X X

PLuS Part Number

Resolver

SHAFT SIZE
12 - 1/8 DIA.
15 - 15 mm DIA.
20 - 20 mm DIA.
38 - 3/8" DIA., 2.06" Bolt Flange
62 - 5/8" DIA., 2.25" Bolt Flange
75 - 3/4" DIA.

RATIO
11 - Standard 1:1 (**Note**: 3rd digit not used on Standard 1:1)
051 - Geared 5:1 - Ext. shaft to internal resolver shaft
101 - Geared 10:1 - Ext. shaft to internal resolver shaft
361 - Geared 36:1 - Ext. shaft to internal resolver shaft

HOUSING
A - Can housing w/flange or foot endbells
C - Stainless steel square housing
E - 74 mm bolt spacing, flange mount
S - Servo mount (.12 = size 11; .38 - size 25)

TYPE OF CABLE CONNECTION
D - Military bayonet style connector
T - Terminal strip with NO conduit entrance
V - No connector, just stripped & tinned wires
S - Sealed connector — screw type

Note: *Part # PS-5903-01-001 conduit entrance for terminal strip models sold separately*

LOCATION OF CABLE CONNECTION
W - With stripped & tinned leads
G - Right (120° from top on "A" housings)
R - Rear (not available on Geared Resolver)
L - Left (120° from top on "A" housings)
S - Side (Top)

†See page 12 for sinking/sourcing definitions.

Typical System(s)

Component(s)	Qty.	Part Number
PS-6X44 Controller(s)	(1)	PS-6144-24-P16M09-L
PS-6400 Keypad/Display(s)	(1)	PS-6400-24-001
Keypad-to-Controller Cable(s)	(1)	PS-6300 -01-005
Resolver(s)	(1)	PS-5275-11-ADR
Resolver Cable(s)	(1)	PS-5300-01-010
SLIMLINE Output Modules	(7)	EC-ODC060-3
SLIMLINE Analog Modules	(2)	EC-SANL-010V

†SINKING or SOURCING (as pertaining to Electro Cam Corp. products)

Sinking means that when the logic is true and the output (or input device) is ON, the output (or input device) is providing a DC common or ground to the connected device.

Sourcing means that when the logic is true and the output (or input device) is ON, the output (or input device) is providing a +DC voltage to the connected device.

This information is important when interfacing an Electro Cam Corp. product with another electronic device. The terms ***SINKING / SOURCING*** are not used in the same context by all manufacturers. If you are using an Electro Cam Corp. product input to an Allen-Bradley 1746-IN16 “sinking” input card* or similar A-B device, you have to supply a +DC voltage to this card, NOT a DC common or ground. In these cases, ***Sinking*** is what the card does with the input voltage; sinks it to common or ground.

* Other manufacturers include, but not limited to: Koyo (formerly GE Series 1, Texas Instruments, or Siemens SIMATIC PLS’s) that use descriptions similar to Allen-Bradley.

Electro Cam Corp. is highly experienced in supplying automation solutions to a variety of industrial machinery. For assistance with your application, please call us.

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