PROMATION ENGINEERING

Precision Actuation for Industry

Local Control Stations for Electric Actuators

On/Off/Jog/Proportional

Key Features:

- ProMation Engineering's Local Control Stations (LCS) give you the choice of using remote process control signals for the actuator or operating the actuator at the location of your choice, either at the actuator or just nearby.

- The ProMation LCS can be remotely located or directly mounted on the actuator providing an array of controls and displays of functions being performed.
- An LCS is typically used when there is a need to control an actuator locally or at some location nearby, isolating it from the normal control signal.
- A host of control options are available in both On/Off/Jog or Proportional control, and in voltages from 12VDC to 575V 3 phase.

Supply Voltage	12vac/vdc	24vac/vdc	120vac	230vac
Enclosure	NEMA 4 (Painted Steel), or NEMA 4X w/ Stainless or Fiberglass Enclosure, Polycarbonate Hinges, 1/4Turn Latch			
Switches	22mm NEMA 4X/IP66 IEC/EN 60947-5-1 / UL508 660vac / 660vdc			
Indicators	22mm NEMA 4X/IP66 LED Lamp Block			
Terminal Blocks	Altech CMB Modular 12ga - 22ga 20A			
Weight	6-18 lbs			
Mechanical Connections	Directly to P series EMT Ports (2)			
Electrical Entry	3/4" EMT (Field Locate)			
Ambient Temperature Operating Range	-13°F to 158°F (-25°C to 70°C)			

Application Notes:

1. This control enclosure is designed to be mounted onto P, PA & PL Series actuators mounted in either a horizontal or upright position. Do NOT mount the actuator with the top below a horizontal position.
2. When installing conduit, use proper techniques for entry into the LCS. Use drip loops to prevent conduit condensate from entering the LCS and/or actuator
3. Both NPT conduit ports MUST use proper equipment to protect the NEMA 4x integrity of the housing.
4. The anti-condensate heater is to be used in ALL applications.
5. **Do not install or store the actuator outdoors or in humid environments without power to the heater.**
6. Use proper wire size to prevent actuator failure (see wire sizing chart for the actuator).

Also available in 12V & 24V AC or DC operation, and in 3 phase models for 230 / 315 / 380 / 440 / 480 / 575 supplies. Separate spec sheets are available for these configurations.

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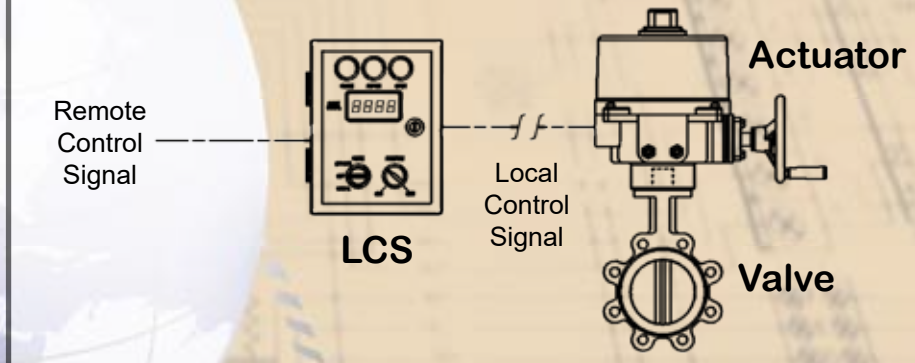
Local Control Station Configurations

Integral to the Actuator

Actuators with integral local control stations can be controlled at a central location and have override control right at the actuator.

Remote Mounted

Actuators can also be set up with remote mounted local control stations for use in remote control applications such as high ceiling mounted actuators with eye-level motor controls and chain wheel systems.



The distance from the LCS to the actuator can range from 0 to 1000 ft

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LCS Model LK QuikLook

Below is just one example of a Local Control Station (LCS) that is compatible with P2~P13 Series 120vac Modulating Actuators. This is a painted steel, hinged 10''H x 8''W x 6''D NEMA 4 enclosure which either attaches directly to the actuator's EMT ports, or can be located some distance from the actuator (i.e. when using chain wheel drives for ceiling mounted actuators).

This unit has a remote/off/local switch, a position potentiometer which generates a FULL 4-20 mA signal to position the actuator in local mode, open/close indicator lights, and dual digital displays showing active process signals being sent to the actuator as well as the feedback signal being generated by the actuator. A dry contact output for mode switch position can be used to remotely monitor the status of the LCS.

CLOSED (RED) indicator

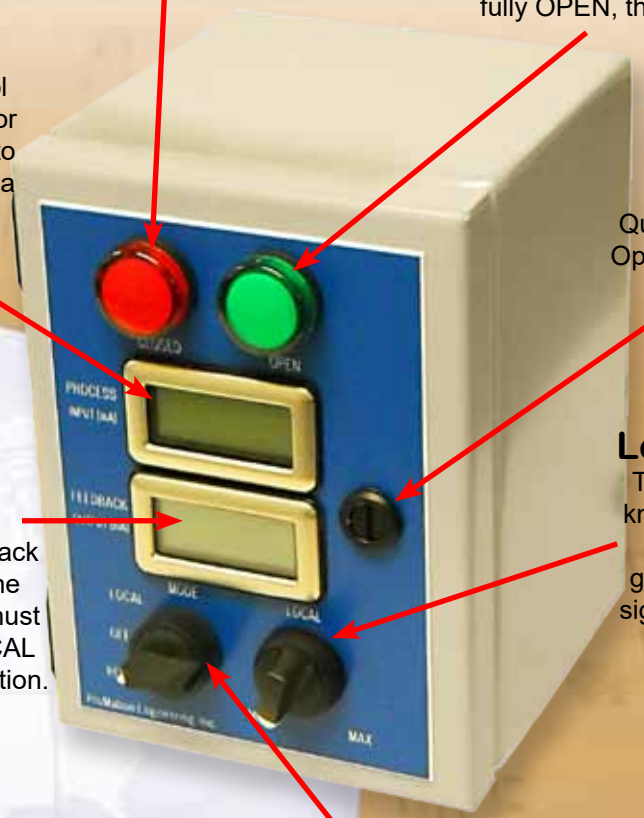
Uses aux contacts from the actuator. When the MODE switch is set for LOCAL or REMOTE and the actuator is fully CLOSED, this indicator will illuminate.

OPEN (GRN) indicator

Uses aux contacts from the actuator. When the MODE switch is set for LOCAL or REMOTE and the actuator is fully OPEN, this indicator will illuminate.

Positioning Signal

LCD display shows the control signal being sent to the actuator and is automatically switched to REMOTE or LOCAL signal as a function of the MODE switch.



Latch

Quarter-turn, screwdriver access. Opens cabinet door to gain access to wiring terminal blocks and actuator wiring entry.

Local Positioning Knob

This weatherproof potentiometer knob controls the signal generator module inside the enclosure to generate the actuator positioning signal when the MODE switch is in the LOCAL position.

Feedback Signal

LCD display shows the feedback signal being generated by the actuator. The MODE switch must be in either REMOTE or LOCAL position for this display to function.

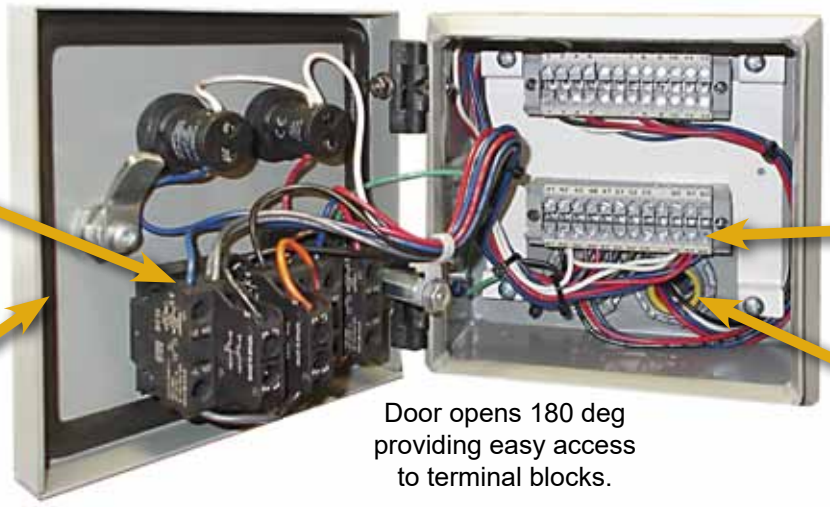
MODE Switch Knob

This selects the mode in which the actuator operates. In LOCAL mode, the front panel mounted potentiometer positions the actuator. In the REMOTE mode, the actuator positioning signal comes from the BAS or PLC system. MODE switch position has dry contacts in both active positions to allow remote monitoring of the MODE switch position.

On/Off/Jog Solutions

LCS Model		Features	
LA		Local / Off / Remote Mode Switch Close / Stop / Open Switch	
LB	LC	Close / Open Indicator LED's Local / Off / Remote Mode Switch Close / Stop / Open Switch End of Travel (EOT) Outputs Mode Switch Position Remote Sense (LC)	
LD		Close / Open / Power Indicator LED's Close / Stop / Open Switch Local / Off / Remote Mode Switch End of Travel (EOT) Outputs Mode Switch Position Remote Sense	

ProMation Engineering has designed the interior of the LCS's for durability and ease of installation



Proportional Solutions

LCS Model		Features
LE		• Local / Off / Remote Mode Switch • Close / Open Switch 
LF	LG	• Close / Power / Open Indicator LED's • Local / Off / Remote Mode Switch • Close / Open Switch • End of Travel (EOT) Outputs • Mode Switch Position Remote Sense 
LH	LI	• Close / Open Indicator LED's • LCD Display for Incoming Signal • Power indicated by Active LCD Screen • Local / Off / Remote Mode Switch • Full Proportional Control via Potentiometer • End of Travel (EOT) Outputs • Mode Switch Position Remote Sense 
LJ	LK	• Close / Open Indicator LED's • LCD Display for Incoming Signal • LCD Display for Feedback Signal • Power indicated by Active LCD Screens • Local / Off / Remote Mode Switch • Full Proportional Control via Potentiometer • End of Travel (EOT) Outputs • Mode Switch Position Remote Sense 

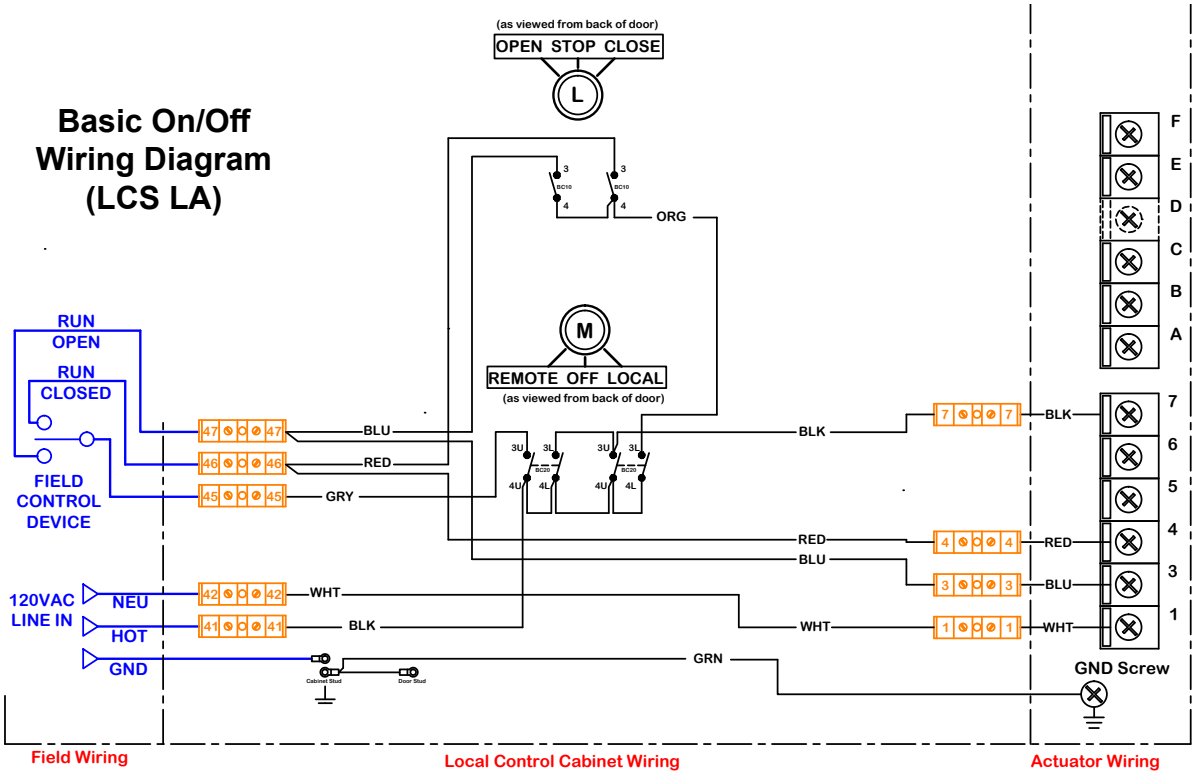
P2 through P13 Quarter Turn Actuators

P1 Quarter Turn Actuators, PA Spring Return, PL Linear Actuators

Wiring Diagrams for LCS Products

For On/Off Control

Basic On/Off Wiring Diagram (LCS LA)

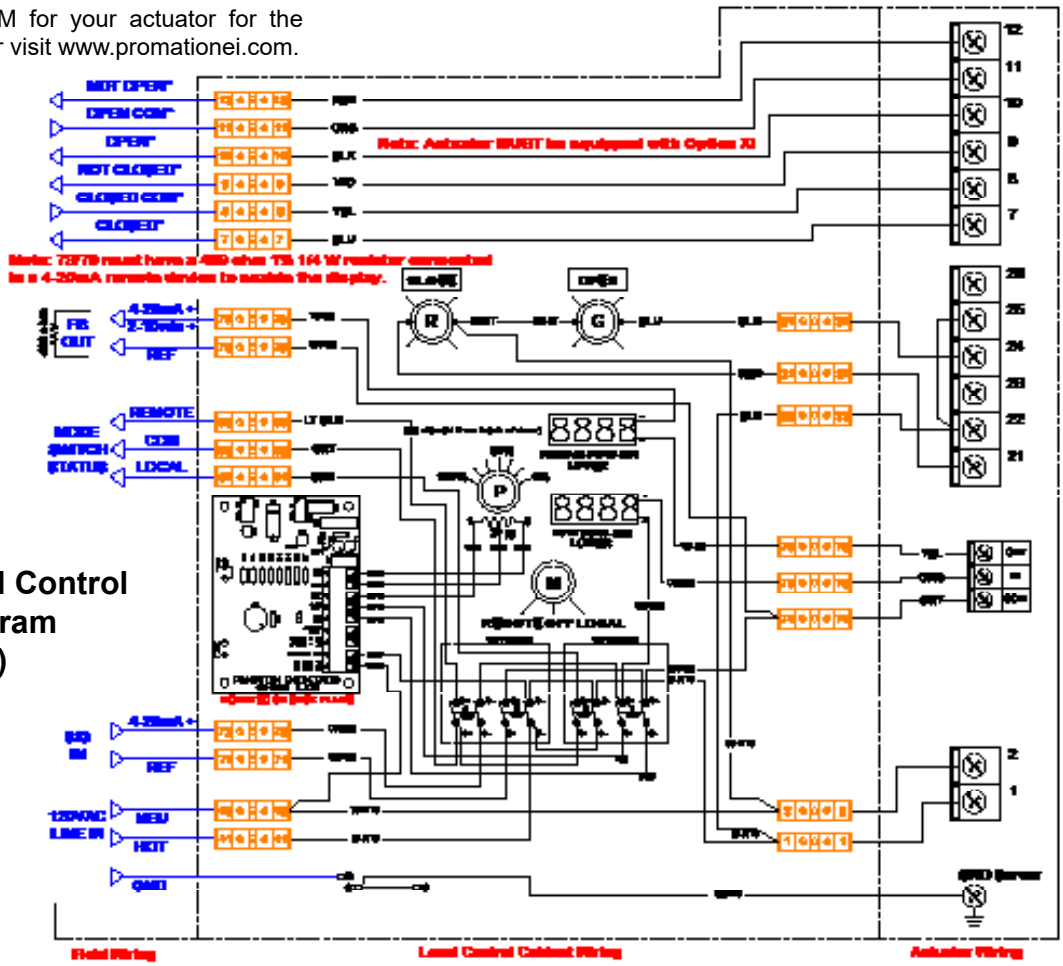


Proportional Control

SAMPLE DIAGRAMS

Refer to the proper IOM for your actuator for the correct wiring diagram or visit www.promationei.com.

Full Proportional Control Wiring Diagram (LCS LK)



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LCS Feature Selection Chart

LCS Model	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK
Product	**All**	**All**	**All**	**All**	**All**	**P1,PA,PL**	**P2-13**	**P1,PA,PL**	**P2-13**	**P1,PA,PL**	**P2-13**
For On/Off/Jog Actuators Only	X	X	X	X							
For Proportional Actuators Only					X	X	X	X	X	X	X
Local/Off/Remote Mode Switch	X	X	X	X	X	X	X	X	X	X	X
Close-Stop-Open Switch	X	X	X	X							
Close-Open Switch (2 Pos)					X	X	X				
Close / Open Indicator Lights		X	X	X		X	X	X	X	X	X
End of Travel (EOT) Outputs to Controller		X	X	X		X	X	X	X	X	X
Mode Switch Position Signal to Controller			X	X		X	X	X	X	X	X
Illuminated Power Indicator				X		X	X				
Full Proportional Control via Potentiometer								X	X	X	X
LCD Display for Incoming Signal								X	X	X	X
LCD Display for Feedback Signal										X	X

Common Questions

ProMation Engineering can provide an array of configurations for our Local Control Stations. By anwering the questions below and calling ProMation Engineering, together we can help determine the best, most cost effective solution for your needs:

1. Is the requirement for On / Off / Jog or Proportional control?
2. What is the voltage supplying the ACTUATOR?
3. Standard control has a MODE switch to select Local or Remote operation. Do I need an OFF position to remove power from the actuator? (This is NOT a service disconnect)
4. Do I need indicator lights for OPEN and CLOSE verification?
5. Do I need indicator lights for POWER verification?
6. Is the environmental requirement for NEMA 4 (steel) , or NEMA 4X (stainless or fiberglass)?
7. Is the CONTROL STATION being mounted directly TO the actuator or REMOTELY mounted for ease of access? For On / Off / Jog control, do I need a STOP position or just Open / Close?
8. For On/Off do I need the MODE switch position remote sense signal option?
9. For Proportional control, what is the control signal commanding the actuator WHERE to move? (i.e. 4-20mA, 1-5vdc, 2-10vdc....)
10. For Proportional control, do I need Open / Close positioning, or FULL ANALOG positioning when in LOCAL mode?
11. For Proportional control, do I need a digital display showing the command control value going TO the actuator?
12. For Proportional control, do I need a digital display showing the command position being generated BY the actuator? (feedback signal)

Product Ordering Example:

LB 213 24 D

LA	Basic Version On/Off/Jog Solution	**01**	P1 Series	**24D**	24vdc ± 10%	blank	Painted Steel NEMA 4	**D**	Direct Mount onto actuator
LB	Mid-Level Version On/Off/Jog Solution	**2-8**	P2-P8 Series	**24A**	24vac ± 10%	**S**	Stainless Steel NEMA 4X	**R**	Remote Mount
LC	Full Version On/Off/Jog Solution	**2-13**	P2-P13 Series	**120**	120vac ± 10%	**F**	Fiberglass NEMA 4X		
LD	Full Version On/Off/Jog Solution	**9-13**	P9-13 Series	**230**	230vac ± 10%				
LE	Basic Version Proportional Solution	**AD**	PA-PD Series						
LF	Mid-Level Version Proportional Solution	**L54**	Linear Series						
LG	Mid-Level Version Proportional Solution								
LH	Full Version Proportional Solution								
LI	Full Version Proportional Solution								
LJ	Premium Version Proportional Solution								
LK	Premium Version Proportional Solution								

Note: Not all combinations are possible. Please consult factory for finished good number generation.

ProMation Products compatible with Local Control Stations

PL Series
Linear Drive

Up to 4400lbs down/up force and up to 100mm (4") stem travel
For globe valves, gate valves and linear travel devices. With override handwheel. Available with On/Off/Jog or Proportional control for 24vac, 120vac & 230vac supplies.

P Series
Non-Spring Return

55"lbs through 40,000"lbs. Quarter-Turn, with Manual Override
Available with On/Off/Jog or Proportional control. For 12vac/dc, 24vac/dc, 120vac, 230vac, 230v/3 phase, 380v/3 phase & 460v/3phase supplies.

PA~PD Series
Spring Return

445"lbs through 2300"lbs.
Quarter-Turn, both with and w/o manual override handwheel. Spring either CW or CCW Available with On/Off or Proportional control for 24vac/dc, 120vac & 230vac supplies. Stepdown for 3ph available.

P1 Series
Non-Spring Return

135"lbs through 445"lbs. Quarter-Turn, with Manual Override
Available with On/Off/Jog or Proportional control. For 12vac/dc, 24vac/dc, 120vac, 230vac supplies.

ProMation Engineering follows a policy of continual product updates and enhancements. Our website is the best place to obtain the latest product documentation, including the wiring diagrams for these controllers.

Visit us at www.promationei.com or use the code to link to the site.

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