Another Musco Innovation

Flexible control and solid management of your facility — saves operating cost and improves service

Get fingertip control of your facilities from your desk, your field, your home, your phone... from anywhere

We Make It Happen.
Musco’s Control-Link® System
for new and existing sports facilities

With cities and recreational needs growing faster than ever, it’s critical to maximize your available resources and make solid decisions about managing and expanding your facilities.

Control-Link® is the reliable, cost-effective system that helps control, monitor, and manage your new recreational facility lighting. In addition, it can control your existing lighting systems and other electrically-operated equipment. Whether for new lighting systems or to upgrade existing lights, the Control-Link System includes our Control-Link Central™ team, the on-site Control-Link equipment, and an industry-leading warranty. Our exclusive Control-Link Central team is staffed 24/7 to assist with your scheduling and reporting needs.

Reduce energy cost and staff legwork
Control-Link reduces energy usage by operating lights and equipment only when needed. This helps curtail taxpayers’ concerns about lights operating when fields are not in use. The automated system does not require staff to travel from field to field to turn lights on and off. It also eliminates distributing and tracking multiple sets of keys and reduces time coordinating staff and facility schedules.

Flexible control simplifies operational needs
Lighting schedules are entered into an easy-to-use Control-Link Central website or by email, phone, or fax. User passwords have varying access levels that you specify. Passwords, unlike keys, can be issued or cancelled at any time – making seasonal personnel or volunteer changes easier to manage.

Emergency schedule changes can be made through Control-Link Central or an optional on-site Schedule Override screen, and on-site manual controls are provided for your maintenance staff.

Solid management tools reduce hassle
Control-Link saves you time overseeing facility operations, scheduling staff, and planning routine maintenance. Control-Link Central accumulates information for you about your facility usage, including operating history by facility and user group. The Control and Monitoring System provided with new lighting systems provides proactive monitoring of your lighting system, reporting fixture outages to help plan routine maintenance. A preseason light check helps assure your fields are ready for play.

Our Control-Link Central team can assist you in generating reports and analyzing your data to provide tools for efficient operations, allocation of costs, assessment of user fees, proactive maintenance, and facility expansion planning.

These capabilities provide for significant long-term cost savings and the potential for providing better customer service and innovative uses of your facilities without adding staff.

Enter schedules at your convenience
Enter schedules from any location via our easy-to-use Control-Link Central web site, or by email, phone, or fax.

- Saves Energy and Staff Costs
- Allows Flexible Control
- Provides Usage Data
- Increases Security
- Provides Reliable Operation
- Monitors System Performance
Each Control Module can operate 8 combinations of switches:

- Zone 1: Baseball 1
- Zone 2: Baseball 2
- Zone 3: Baseball 3
- Zone 4: Soccer 1
- Zone 5: Soccer 2
- Zone 6: Soccer 3
- Zone 7: Concessions
- Zone 8: Parking Lot

Equipment is controlled automatically:
Lights and other equipment such as door locks, concession stands, and security lights are operated per your schedules.

Control-Link Central™ provides support, monitoring, and usage data:
Control-Link Central supports you every step of the way. Trained staff provide scheduling support and verification, and monitor your lighting system for fixture outages. Control-Link Central’s database stores field usage data by facility and user group.

“Thank you so much for providing such an effective and advanced system for scheduling our lights; it has truly revolutionized the way we work.”
— Kelly Barker
Athletic Field Permit Coordinator
Dept. of Parks, Recreation and Marine
City of Long Beach, CA

“It’s like being an umpire. If people don’t know you’re there, you did a great job. If there aren’t any complaints about the lights, I know the system is doing its job.”
— Roger Russomanno
Ballfield Operations Supervisor
Denver, CO, Parks and Recreation Dept.

“I use Control-Link Central™ to enter the weekly schedules so I can spend my time taking care of other things … They do a great job, week after week.”
— John Banks
Park and Recreation Supervisor
Laguna Niguel, CA
Meet Our Control-Link Central Team

Control-Link Central™ provides trained technical assistance with the helpful, “can-do” attitude you expect from Musco, to solve any last-minute change or issue.

Control-Link Central operators oversee on/off control of over 4000 fields per night and have experience with controlling over 10 million hours of lighting system operation nationwide.

Available day or night, the Control-Link Central staff is ready to assist you with facility reports, which analyze data from your fields’ use by user groups to maximize facility management.

“We strive to provide a level of service where every customer reaches a live operator, rather than a voice mail system, when they call in. We can make your last minute scheduling changes happen in just a few minutes.”

Ryan Tighe
Control-Link Central™ Manager
Efficient Management Tools

Operations Support
Control-Link Central™ provides two options for management and control of your facilities:
• Directly control your fields via an easy-to-use website
• Contact Control-Link Central’s team of trained operators 24/7 to enter your schedules and request last minute changes

Data Management
Control-Link Central offers effective tools to manage and analyze the extensive stored information. Standard reports include usage reports by facility, field, and/or end-user.

System and Schedule Monitoring
The Control-Link Control and Monitoring System provided with new lighting systems checks your system performance each time your lights are turned on. If the system detects fixture outages that affect playability, Control-Link Central is notified and will contact you. Preseason checks can be a part of your proactive maintenance program to help make sure your lights are operating properly before the first game.

Control-Link Central staff monitors all schedules entered to make sure they are successfully received by the controller. In addition, they monitor the status of the system on a daily basis to ensure it is ready to run your schedules. If any system issues are detected, the Control-Link Central staff will contact you to resolve them before they become a problem.

Control-Link Activation
Once the on-site equipment is installed, a Musco technician will contact the installing contractor and assist them in commissioning the system. The technician will send sample schedule commands to the Control-Link system to test each lighting zone and its associated control and lighting equipment. The technician will also collect baseline diagnostic data, allowing the lighting system to be monitored for correct operation from that point on.

Customer Training
Control-Link Central staff provides customer training via telephone, conference, or on-line tutorial covering Control-Link operation, scheduling, website access, and all user functions.

“We greatly appreciate your super-friendly service.”
— Kelly Barker
Athletic Field Permit Coordinator
Dept. of Parks, Recreation and Marine
City of Long Beach, CA

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New System: On-Site Equipment Overview

The Control-Link Control and Monitoring System provides reliable, cost-effective control, monitoring, and management of your new recreational facility lighting.

Your factory-built and tested Control-Link equipment includes

- Digital cellular communication equipment
- Control and Monitoring cabinet(s)

Optional Equipment

- Remote Manual Switches cabinet
- Schedule Override cabinet

Supplied by Contractor

- Main disconnect (electrical distribution panel), conduit, and power wiring
- 120 volt AC control circuit(s)
- Transformer if 120 volt supply not available
- Mounting hardware for cabinets
- Conduit and NEMA Type 4 hubs

Control and Monitoring Cabinet

Enclosure

Technical Features

Assembled Cabinet

- Entire assembly UL 508 LISTED (Industrial Control Equip.) #E204954
- Meets FCC Part 15 Class A
- Factory wired, programmed, and tested
- Controls up to 8 zones per cabinet
- Operating temperature -20°C to +60°C (-4°F to +140°F)
- Internal time clock with battery back-up
- Database memory protected from power outages or fluctuations
- Typical enclosure and component weight: 6 foot – 150 lbs., 4 foot – 125 lbs. Project specific details available upon request

Enclosures

- NEMA Type 4, 5052 H32 aluminum
- Powder-coat finish after fabrication
- External mounting feet
- Lockable, 3-point latching assembly
- Door grounded enclosure

Manual Off-On-Auto Switches

- Keyed, maintain position
- Make-before-break contacts
- Factory wired to terminal blocks
- Mounted to maintain NEMA 4 rating
- Legend plate clearly identifies zone
- Switches may be placed in optional remote Manual Switches cabinet, see page 10 for details
Control and Monitoring Cabinet

The on-site Control and Monitoring cabinet operates and monitors your new lighting system. It allows you to manage your schedules and facility usage from your home, office, or anywhere.

On/Off Control Module
Receives and stores schedules from Control-Link Central™ to operate your equipment and verify that schedules were carried out.

Monitoring Module
Monitors your lighting system and reports any fixture outages to help plan routine maintenance and keep your facilities operating.

Contactor Switching Modules
Switches your equipment on/off based on the schedules stored in the control module.

Communication Modem Module
Reliable, high-speed integrated communication system provides two-way communication to Control-Link Central™.

Technical Features

Panel
- 5052 H32 aluminum
- Pre-punched, modular configuration
- Powder-coat finish after fabrication

Communication Modem
- Digital cellular technology
- No additional monthly charges

Contactors
- Sized for 30, 60, or 100 amp lighting loads
- Electrically held
- 120 volt coil

Ground Bar
- 15 grounding terminals provided
- Holds size #14 to #4 gauge wires

Internal Control Wiring
- Fuse holder 600 volt 30 amp IEC type
- Control terminal blocks mounted to DIN rail
- Plug-in wire harnesses for multiple cabinets (if required)

Contactor Module Options

<table>
<thead>
<tr>
<th>Rated Lighting Capacity</th>
<th>Wire Size Range *</th>
<th>Maximum Per Small Cabinet</th>
<th>Maximum Per Large Cabinet</th>
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<td>2-10 AWG</td>
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<tr>
<td>100 amp</td>
<td>250 mcm – 8 AWG</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

* Stranded cable, single conductor, without cable end
Retrofit of Existing Lighting Systems

Retrofit System: On-Site Equipment Overview

The Control-Link Control System provides reliable, cost effective control of your existing recreational facility lighting and other electrically-operated equipment.

Your factory-built and tested Control-Link equipment includes:

• Digital cellular communication equipment
• Control cabinet(s)
• Remote Manual Switches cabinet

Optional Equipment

• Schedule Override cabinet

Supplied by Contractor

• Main disconnect (electrical distribution panel), conduit, and power wiring
• 120 volt control circuit(s)
• Transformer if 120 volt supply not available
• Mounting hardware for cabinets
• Conduit and NEMA Type 4 hubs

Control Cabinet

Enclosure

Technical Features

Assembled Cabinet

• Entire assembly UL 508 LISTED (Industrial Control Equip.) #E204954
• Meets FCC Part 15 Class A
• Factory wired, programmed, and tested
• Controls up to 8 zones per cabinet
• Operating temperature -20°C to +60°C (-4°F to +140°F)
• Internal time clock with battery back-up
• Database memory protected from power outages or fluctuations
• Typical enclosure and component weight: 28 lbs.
  Project specific details available upon request.

Enclosures

• NEMA Type 4, 5052 H32 aluminum enclosure
• Powder-coat finish after fabrication
• External mounting feet
• Lockable door
• Door grounded enclosure
Control Cabinet

The on-site Control Cabinet operates your existing sports facility’s lights and equipment, allowing you to manage your schedules and facility usage from your home, office, or anywhere.

**On/Off Control Module**
Receives and stores schedules from Control-Link Central to operate your equipment and verifies schedules were carried out.

**Contactor Switching Module**
Switches your equipment on/off based on schedules stored in the control module.

**Communication Modem Module**
Reliable, high-speed integrated communication system provides two-way communication to Control-Link Central™.

Technical Features

**Panel**
- 5052 H32 aluminum
- Pre-punched, modular configuration
- Powder-coat finish after fabrication

**Communication Modem**
- Digital cellular technology
- No additional monthly charges

**Internal Control Wiring**
- Control terminal blocks mounted to DIN rail
- Plug-in wire harnesses for multiple cabinets

Manual Off-On-Auto Switch Detail
(Remote Manual Switches Cabinet)

Zone 1
OFF ON AUTO
Remote Manual Switches Cabinet

The remote Manual Switches cabinet comes standard with the Retrofit System for operating your existing facility lighting.

Optional for the Control and Monitoring system, it provides for special switching requirements or for more convenient Off-On-Auto switch location for maintenance staff. Lockable cabinet helps prevent tampering for outdoor mounted equipment.

Optional Schedule Override Cabinet

The on-site Schedule Override touch screen enables your user groups to extend play or turn the lights off early. Offers easy-to-use LCD screen and user access code protection.

Technical Features

Remote Manual Switches Cabinet
- NEMA Type 4, 5052 H32 aluminum enclosure
- Operating temperature -20°C to +60°C (-4°F to +140°F)
- Powder-coat finish after fabrication
- External mounting feet
- Lockable, latching assembly
- Door electrically bonded to enclosure
- Locate up to 300 feet from Control Cabinet
- Typical enclosure and component weight 33 lbs.
- Project specific details available upon request.

Manual Off-On-Auto Switches
- Factory wired to terminal blocks
- Mounted to maintain NEMA 4 rating
- Legend plate clearly identifies zone

Schedule Override Cabinet

Technical Features

Schedule Override Cabinet
- NEMA Type 3R, 5052 H32 aluminum enclosure
- Powder-coat finish after fabrication
- External mounting feet
- Magnetic lock, disengages when schedule operating
- Operating temperature -20°C to +60°C (-4°F to +140°F)
- Four-digit user access code
- Locate up to 175 feet from Control & Monitoring cabinet
What Our Customers Have to Say

Usage Data is Great
“It’s been great. It’s ten times better than anything we’ve tried before. The field usage data is great. Our monthly reports needed for financial planning are more accurate and easy to do. That makes setting user fees much easier. The customer service we continue to get from Musco is excellent. I know I can call them anytime, from anywhere, and they’re right there to help, 24 hours a day, 7 days a week.”

Judy Flynn
Former Recreation Supervisor
City of Corona, California

Neighbors Appreciate Control Link
“We used to get calls from neighbors every once in a while that the lights had been left on, and someone would have to go out in the middle of the night to turn them off. Neighbors have called us saying how much they appreciate the lights being on only when someone is actually using the field.”

Scott Whitaker
Park & Recreation Director
City of Carrollton, Texas

Easy to Operate
“Musco’s Control and Monitoring System is definitely a more proactive approach than our previous system. When there is a problem, the monitoring system allows a warranty specialist to immediately notify us. This is a huge asset, as problems are resolved right away. The system is user friendly, very efficient, and easy to operate. Using a phone to call Control-Link Central is much easier than our previous system, which required a laptop to dial in and make changes to a particular facility. The simplicity of this system is very refreshing.”

Joe Ross
Recreation Programmer
City of Rialto, Recreation and Community Services
Rialto, CA

Customer Service Second to None
“We enjoy the great customer service. The staff answering the phones are so polite and we really appreciate that. We value being able to monitor the usage of the facilities through the website. Control-Link helps ensure that field lights are turned off when they are supposed to be. We no longer receive calls at 1:00 in the morning that the lights were left on. The monitoring system has also been impressive. We received a call during the day that there was a problem with one of the fixtures. After checking the fuses, we replaced one and the system was back to go. The problem was resolved before we would have even been aware there was a problem.”

Stephen Cooke
Sports Manager, Greenville County Recreation Dept.
Assistant District Administrator SC District 7 Little League
Greenville, SC
Light-Structure Green™

Outdoor: New Lighting Applications
Still engineered as 5 Easy Pieces™, Light-Structure Green offers unequaled performance for your budget, for the environment.

Reduces operating costs by 50%
Cuts wasted spill light by 50% or more
Eliminates 100% of your maintenance costs for 25 years
Provides Constant Light™

SportsCluster Green™

Outdoor & Indoor: Retrofit Applications
A modular photometric unit factory aimed and tested to perform from your choice of structures — makes retrofit of old equipment easy.

Reduces operating costs by 50%
Cuts wasted spill light by 50% or more
Eliminates 100% of your maintenance cost for 10 years
Provides Constant Light™

Light-Pak™

Indoor: New and Retrofit Applications
Energy-efficient indoor sports lighting that operates at your choice of two energy levels for improved cost control.

Saves energy costs over alternative systems