

The Benefits of Modular Wiring

Carol Webster

Modular wiring systems offer retailers a way to reduce installation time and costs for new store builds or remodels. D&P Custom Lights & Wiring Systems, Inc. ACLinx system is designed for ease of installation and safety, and can be configured to meet the needs of any retailer or commercial, industrial, residential or institutional building, including healthcare and education.

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In today's increasingly competitive retail environment, retailers must do two things: provide an inviting and engaging retail space for their customer base, and keep costs as low as possible. Modular wiring systems, also known as prefab wiring or prebuilt wiring, are one way retailers can achieve both of these goals.



D&P's modular wiring system is perfect for powering checkstands and gondolas

Modular wiring systems were developed to reduce the quantity of work needed to be done on-site. The technology, using advanced quality manufacturing techniques and materials, represents the latest in cutting-edge, cost-effective electrical-installation solutions — a factory-assembled and fully tested cabling system that replaces the traditional wiring of electrical sub circuits.¹ “Not only does this way of working offer time and cost savings, it is also perfectly geared to installations that need to be

carried out quickly – for example, schools, healthcare facilities, retail outlets and offices where minimizing downtime is an absolute necessity. Modular systems really do have the ability to relieve some of the time pressure from on-site work, and make installing the electrical infrastructure easier and quicker.”²

According to an Ellerbe Becket report based on a 25-year Present Value Analysis study performed for the U.S. General Services Administration (GSA) to determine the most cost-effective access floor systems, an access floor system using modular wiring “saved 12% of initial and life cycle costs compared to the base costs for a cellular floor system.”³ In a time and motion study conducted by published by Stabiloy MC Cable in July of 2004, using pre-

¹ Lewis, D. (2012, June 1). *Answering your questions on modular wiring - Modern Building Services*. Retrieved from http://www.modbs.co.uk/news/archivestory.php/aid/10586/Answering_your_questions_on_modular_wiring.html

² Hope, G. (2009, May 18). *Modular wiring systems | ConstructionWeekOnline.com*. Retrieved from <http://www.constructionweekonline.com/article-5258-modular-wiring-systems/>

³ Ellerbe Becket (1992). *GSA Access Floor Study*. Retrieved from U.S. General Services Administration website: http://tateinc.com/pdf/ellerbebecket_gsareport.pdf

assembled systems such as D&P's AC Linx "versus conventional raceway (conduit) and wire" resulted in cost savings ranging from 22% to 50% for product costs and labor charges together.⁴ With frequent remodeling and store reconfigurations, the life cycle cost savings could potentially be even higher.

Modular wiring has been in use for more than 25 years, and has gained a good foothold in the lighting industry, but the benefits remain the same regardless of the business sector. "Because installing a modular...system is much faster than installing hard-wired *components* and requires less skill, it is popular for projects where the contractor is interested in keeping labor costs down and in reducing possible trouble-shooting after the installation," notes John Weishaar, marketing manager for MWS (Modular Wiring Systems) at Cooper Lighting. "It is also a good choice for meeting fast construction schedules."⁵

Labor cost savings can be substantial. According to Neil Ancell, Managing Director of Modular Wiring Systems, "as most of the work to create the distribution system is done off-site, a modular wiring system minimizes on-site labor requirements by up to 70%. That represents an incredible cost savings, even taking into account the extra cost of the system pre-fabrication. Furthermore, much of the skill level required for a traditional installation has been removed, further reducing your costs."⁶



Color-coded components allow easy installation without the use of electricians

⁴ Mewis, B., & Chiang, J. (2004). *Time and Motion Study*. Retrieved from RSMMeans Consulting Services website: <http://www.stabiloy.com/NR/rdonlyres/B63E324D-C1E1-4902-B2C1-A812654157F2/0/TimeMotionStudySTABILOYMCCable.pdf>

⁵ Feldman, W., & Feldman, P. (n.d.). *ElectricSmarts Network - Story: Modular Wiring Facilitates Faster Lighting Installation*. Retrieved from <http://www.electricsmarts.com/container.aspx?tab=featured&storyid=10527>

⁶ Ancell, N. (n.d.). *Modular Wiring Systems interview*. Retrieved from http://www.tt-magazine.com/magazine/index.php?option=com_content&view=article&id=157:modular-wiring-systems-interview&catid=24:2011-february&Itemid=37

Not only are total initial and life cycle costs lower for modular wiring systems, installation time can be reduced significantly as well. The RSM means time and motion study stated that modular wiring systems “show a substantial reduction in installation time” when compared with “traditional two-step process of conduit installation and cable pulling,” as much as 32%.⁷ The study further states that the best efficiencies are found in “large industrial installations” such as retail stores. Other studies have found that “the use of prefabricated connectors and preassembled cables can provide a high performance, reliable and flexible wiring solution which offers significant improvements over alternative systems, reducing onsite installation times by up to 70%.”⁸

There are other benefits to using a modular wiring system such as ACLinx. Serge Oberoi, vice president of process development and transformation for Electec, Ltd. in Ottawa, Ontario says “Quality is the next most attractive benefit of modular wiring. Factory production is better controlled than on-site wiring, and repetitive short-cycle manufacturing delivers consistent quality.”⁹ And pre-wired systems have already been factory tested before being delivered.

Using modular wiring also offers advantages on the job or construction site. Because the system is manufactured off-site, the size of on-site storage area is reduced, and materials can be delivered direct to the working area on a “just in time” basis. In addition, there is no on-site cutting and fabrication, which reduces waste and improves safety. Having fewer people on site also can minimize disruption during installation and reduce accidents.¹⁰

The use of modular wiring will continue to grow in the next five to 10 years, as pressure mounts throughout the supply chain to deliver projects on time and within budget, achieving cost savings in the process wherever possible.¹¹

⁷ Mewis, B. & Chiang, J.

⁸ Wire In (2012, January). *The future for electrical and power installations*. Retrieved from <http://www.wirein.co.uk/2012/01/the-future-for-electrical-and-power-installations/>

⁹ Bremer, D. (2012, August). *Manufactured Wiring Systems | EC Mag*. Retrieved from <http://www.ecmag.com/section/systems/manufactured-wiring-systems>

¹⁰ Tratos Group (2010). *Benefits of Modular Wiring*. Retrieved from <http://www.modularwiring.com/index.php/benefits>

¹¹ Lewis, D. (2012, June 1). *Answering your questions on modular wiring - Modern Building Services*. Retrieved from http://www.modbs.co.uk/news/archivestory.php/aid/10586/Answering_your_questions_on_modular_wiring.html

ACLinxTM



In-Bound Power Whip



Out-Bound Power Whip



Splitter Module



In-Bound
Power Connector



Out-Bound
Power Connector



Extender Cable

[Color-Coded ACLinx Components](#)

Modular wiring system components for D&P Custom Lights & Wiring Systems, Inc.'s power connection system, AC Linx™ Modular Wiring System, are prefabricated off-site and feature individual pre-wired components that can be configured to meet your specific needs and provide power from floor to ceiling with minimal use of electricians.

Using fixture installers to finish your electrical installation in your cash wrap or gondola can translate into huge labor savings, fewer errors and delays. According to Jeff McDermott, product manager for Legrand/Wiremold, West Hartford, Conn., modular wiring systems “minimize the number of hard connections that need to be made” and enable more work to be delegated to non-electricians rather than on-site skilled electrical workers.¹²

The simplicity of the ACLinx system allows retail store employees to make quick floor changes, add new power drops to the sales floor and change electrical layouts as needed for remodeling or seasonal updates. Jeff McDermott says the modular nature of this kind of system “makes it easier to perform future moves, adds and changes with few new wiring connections and to reconfigure for extra capacity and scalability for added circuits.”¹³

D&P's in-house electrical design team provides total design support including Auto-Cad layout designs and voltage drop calculations, and will create a power solution specific to your job's requirements. The modular nature of the ACLinx system allows D&P to configure multiple layout options to maximize savings through reduced labor and installation costs.

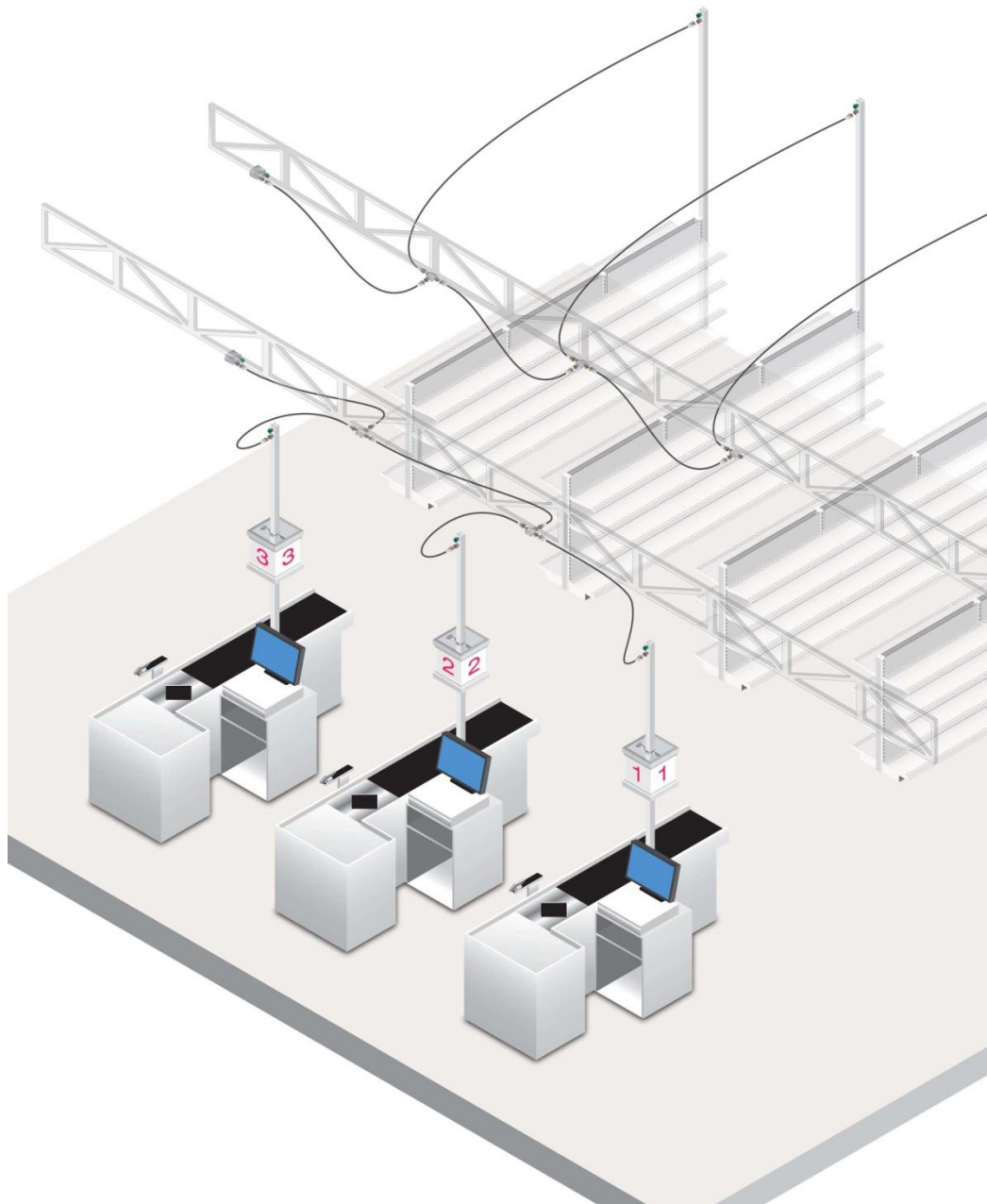
Along with reduced installation and labor costs, ACLinx also leads the industry in safety and ease-of-install. All of our connectors are designed and produced exclusively for us and incorporate several features to help ensure a clean, accurate install. Connectors are color-coded by application to make installation a snap: brown to brown, green to green, etc. Our connectors are designed to be fool-proof when it comes to installation: our unique key-locking pattern prevents misconnects or rotations. With ACLinx Modular Wiring, the only way you can connect

¹² Bremer, D. (2012, August). *Manufactured Wiring Systems | EC Mag*. Retrieved from <http://www.ecmag.com/section/systems/manufactured-wiring-systems>

¹³ Bremer, D. (2012, August). *Manufactured Wiring Systems | EC Mag*. Retrieved from <http://www.ecmag.com/section/systems/manufactured-wiring-systems>

is the right way! To see videos on the ACLinx modular wiring system, please [visit our YouTube channel](#).

D&P's ACLinx modular wiring system adheres to safety standards covering requirements for product construction, performance, manufacturing and testing methods, and all components are ANSI/UL 183 listed.



Typical Retail Store Installation