





# **Safety Product Guide** think **SAFETY.** think **HUBBELL**SAFE.





# Hubbell Safety Product Guide **Table of Contents**



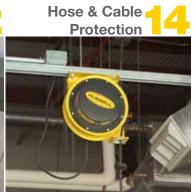
### » Twist-Lock® Devices

- » Straight Blade
- » Advantage Series Switch-Rated Pin & Sleeve
- » IEC Pin & Sleeve
- » UL/CSA Enclosure Type 4X Box



- » MotorQuick®
- » LINKOSITY®

- » Kellems® Strain Relief
- » Kellems<sup>®</sup> Support Grips
- » PolyTuff® Non-Metallic Liquidtight Conduit and Tubing



- » Industrial Cord Reels
- » Commercial Cord Reels
- » TrukTrak®, TredTrak® and AccessTrak®



**Temporary** 

**Temporary Power** 

- » SPIDER<sup>®</sup> II Temporary Power Boxes
- » Portable Outlet Boxes



### Temporary Lighting

- » Construction Site Lighting
- » Maintenance and Work Lights
- **GFCI Protection**

Ground Fault Circuit Interrupters

- » Receptacles
- » Portables
- » Sensing Modules
- » Circuit Testers



- Arc Flash Safety
- » PANEL-SAFE®
- » Mechanical Interlocks





**Online Tools** 

- » Safety eTour
- » Online Literature
- » Selector Apps



- Lockout, Tagout
- » PLUGOUT®
- » SWITCHOUT®
- » Locking Switches



Harsh and Hazardous

- » Unfused Disconnect Switches
- » Unfused Mechanical Interlocks & Plugs



Specialty

Specialty Devices

» Corrosion Resistant Devices

HUBBELL



# Safety First with Hubbell

SAF

### The safety of people and equipment matter most

### Too costly to ignore

RF

Hubbell believes that every employee in every business has the right to a safe working environment. Not only is safety the key to allowing people to be confident and secure in their jobs, it is also critical to enhancing productivity, reducing downtime and avoiding significant accident expenses—all of which leads to sustainability and a lower Total Cost of Ownership (TCO).

### Ensuring safety everywhere

Potential safety hazards exist in almost every workplace environment-from open office areas and factory floors, to construction sites and retail spaces. That's why all employers are required to comply with strict safety codes and regulations. Many businesses pride themselves on the number of accident-free days,

which is achieved through established formal safety programs that include training, ongoing safety evaluations and documentation.

Hubbell Wiring Systems is committed to helping our customers maintain a safe workplace environment. Since introducing the first safety receptacle that set the industry standard, Hubbell has always

been focused on safety. That's why Hubbell products are designed and developed to first provide maximum safety against injury and the potential dangers of electricity.

- Hubbell Twist-Lock<sup>®</sup> plugs and receptacles ensure mating only with the correct voltage and amperage devices
- Hubbell's full line of watertight devices provides protection against electrical shock in wet environments
- All Hubbell ground fault receptacles and temporary power distribution systems provide a high level of personnel protection
- Hubbell Circuit-Lock® disconnects and MotorQuick® motor controllers enable safe control and disconnection of power in the industrial environment
- Lockout-tagout features and devices offer a means to protect employees by avoiding unintentional energizing of equipment during diagnostics or repair
- Hubbell wire management and hose and cable protection systems safeguard cables and cords, ultimately protecting people by preventing damaged circuits and minimizing trip hazards

### An essential core value

As an industry leader, Hubbell is extremely involved with regulatory associations and has an extensive knowledge of codes and regulations that businesses must comply with to ensure safety and reduce risk. From the latest version of the National Electric Code<sup>®</sup> (NEC) to NEMA requirements and OSHA regulations, Hubbell products comply with the latest codes to help our customers ensure proper safety in the workplace. As part of our ongoing commitment to safety, Hubbell holds numerous ShopTalk<sup>™</sup> Seminars across the nation to provide up-to-date information on safety requirements, potential safety risks and products and solutions.

Hubbell understands the importance of making safety a core value in every business and the cost of non-compliance. Keeping people and equipment safe with Hubbell products reduces risk and liability.







# **Connections for Wet and Damp Locations**





UL Enclosure Type No.	IEC 60529 Enclosure Classification Designation	Basic Description
3R	IP14	Rainproof and Sleet (Ice) Resistant; Outdoor
4	IP56	Watertight and Dusttight; Indoor and Outdoor
4X	IP56	Watertight, Dusttight and Corrosion-Resistant; Indoor and Outdoor
6	IP67	Watertight, Dusttight and Sleet (Ice) Resistant; Indoor and Outdoor
12	IP52	Industrial Use, Dusttight and Driptight; Indoor
	IP69k	Hot Water



#### HUBBELL Wiring Device-Kellems

### Watertight Wiring Devices

When it comes to safety, almost everyone knows that water and electricity can create a dangerous environment. From harsh factory and construction sites to laboratories and outdoor applications, ensuring a watertight seal for electrical devices is critical to ensuring maximum safety of personnel in any wet environment. Hubbell Watertight Twist-Lock® devices have become the industry standard for maintaining a watertight seal when in use and when disconnected as well as preventing unintentional disconnects.

Watertight Safety-Shroud® Twist-Lock® Devices



### Maintains UL/CSA Enclosure Type 4X watertight seal when in use and when disconnected

- Constructed from engineered high impact thermoplastic for heavy-duty industrial applications
- Shroud meets or exceeds California OSHA 2510.7(6) electrical safety requirement for "skirted plugs" Title 8 Division 1 Chapter 4
- Reduces exposure to arcing when connecting and disconnecting under load

### Watertight Twist-Lock® and Straight Blade Devices



- · Cone seal prevents water from accumulating at the cable entrance
- Collapsible bushing allows compression nut to fully rest on body
- Exclusive triple by-pass sealing system
- Corrosion-resistant nickel plated blades and stainless steel captive assembly screws
- UL Type 4, 4X, 6, 6P; IP65, IP66, IP67
- Double insulated elastomeric cover

### Watertight Locking Devices

Muter tight E	Johning	00000	00						_
NEMA Rating Poles		Poles/	Watertight Safety-Shroud®			Watertight			_
Color Coded by Volta	ge	Wires	Plug	Connector	Receptacle	Plug	Connector	Receptacle	
15A 125V	L5-15	2P/3W	-	-	-	HBL24W47	HBL25W47	HBL65W47	
15A 277V AC	L7-15	2P/3W	-	-	_	HBL24W34	HBL25W34	HBL65W34	_
20A 125V	L5-20	2P/3W	HBL2311SW	HBL2313SW	HBL2310SW	HBL26W47	HBL27W47	HBL67W47	
20A 250V	L6-20	2P/3W	HBL2321SW	HBL2323SW	HBL2320SW	HBL26W48	HBL27W48	HBL67W48	_
20A 277V AC	L7-20	2P/3W	HBL2331SW	HBL2333SW	HBL2330SW	HBL26W49	HBL27W49	HBL67W49	_
20A 125/250V AC	L14-20	3P/4W	HBL2411SW	HBL2413SW	HBL2410SW	HBL26W74	HBL27W74	HBL67W74	_
20A 3Ø 250V	L15-20	3P/4W	HBL2421SW	HBL2423SW	HBL2420SW	HBL26W75	HBL27W75	HBL67W75	
30A 3Ø 250V AC	L15-30	3P/4W	HBL2721SW	HBL2723SW	HBL2720SW	HBL28W75	HBL29W75	HBL69W75	0
30A 3Ø 480V AC	L16-30	3P/4W	HBL2731SW	HBL2733SW	HBL2730SW	HBL28W76	HBL29W76	HBL69W76	_

### Watertight Straight Blade Devices

		<u> </u>						
NEMA Rating Color Coded by	/ Voltage	Poles/ Wires	Color	Plug	Connector	Receptacle with Lift Cover	Duplex Receptacle with Lift Cover	<b>()</b>
15A 125V	5-15	2P/3W	Yellow Black	HBL14W47A HBL14W47BK	HBL15W47A HBL15W47BK	HBL60W47 HBL60W47BK	HBL60W47D —	0
15A 250V	6-15	2P/3W	Yellow	HBL14W49	HBL15W49	HBL60W49	HBL60W49D	
20A 125V	5-20	2P/3W	Yellow	HBL14W33A	HBL15W33A	HBL60W33	HBL60W33D	
20A 250V	6-20	2P/3W	Yellow	HBL14W48	HBL15W48	HBL60W48	HBL60W48D	2 2











# **Convenient Power Access**

### **Portable Outlet Boxes**

The thermoplastic elastomer material of the Portable Outlet Box provides a strong housing with enough capacity for multiple devices to fit, with cord feed through options available. The impact resistant PBT covers add to the durability of the box and the devices inside. There are several cord connectors available, ranging from standard to deluxe, providing unmatched strain relief. The covers provide a UL Type 3R weather resistant seal suitable for wet and damp locations. Portable Outlet Boxes are available pre-assembled or can be configured as needed.

### **Portable Outlet Boxes**



- Wiring room to accommodate the broadest range of device requirements in one size box
- Cord entry options include pre-defined range or 'build your own' option
- Fully thermoplastic elastomer housing exceeds UL crush requirements and is highly impact resistant, available in black or yellow
- Extended wall protects lift covers from impact damage
- Brass inserts for maximum strength

### **Covers for Portable Outlet Boxes and Panels**



- Impact resistant PBT material
- Stainless steel hinge and spring
- UL Type 3R seal on a panel or on a portable outlet box

### Pre-Assembled Portable Outlet Boxes (with Cord Connector Installed)

Description	Cord Range Inches (mm)	Catalog Number	
Portable Outlet Box, Deep, Yellow	.38"50" (9.7-12.7)	HBL3099	
Portable Outlet Box, Deep, Feed Thru, Yellow	.38"50" (9.7-12.7)	HBL3090F	
Portable Outlet Box, Deep, Yellow with (2) duplex plates	.38"50" (9.7-12.7)	HBL3000	



#### **Configurable Portable Outlet Boxes**

			Cord Connector Options		Deluxe	
Empty Box Options	Catalog Number	Cord Range Inches (mm)	Gray Nylon	Black Nylon	Cord Connectors	
Outlet Box, Yellow Outlet Box, Black Feed Thru Box, Yellow Feed Thru Box, Black	HBL3080 HBL3080BK HBL3080F HBL3080FBK	.38"50" (9.5-12.7) .50"63" (12.7-15.9) .63"75" (15.9-19.0) .75"88" (19.0-22.2)	SHC1039CR SHC1040CR SHC1041CR SHC1042CR		 CG810NM 074011341 074011342	
Note: Includes Locknut.		.88"-1.00" (22.2-25.4) .59"-1.00" (15.0-25.4)	SHC1043CR SEC100GA	SHC2043CR SEC100BA	074011343	

### Cover Plates for Portable Outlet Boxes and Panels

Description	UL Type 3R	UL Type 1	
Outlet box cover, duplex receptacle	HBL3056	HBL3051	アクセイ
Outlet box cover, 1.39" diameter receptacle	HBL3057	HBL3052	
Outlet box cover, 1.572" diameter receptacle	HBL3058	HBL3055	
Outlet box cover; GFCI	HBL3061	HBL3060	
Outlet box coverplate, blank	HBL3054	—	





#### **Environmental Specifiations**

Portable Outlet Boxes Wet and Damp Locations

Covers (POB)

UL Type 3R and Wet Locations cover closed



Box Suitable for Wet and Damp Locations







# **Maximum Protection for Electrical Connections**







Water & Dust Ingress Protection:

#### **IP69k Water Test**

Extremely Hot (176°) and High Pressure Water (1450 psi) sprayed from various angles.

#### **IP69k Dust Test**

Device is placed in a dust chamber for 8 hours while a vacuum tries to pull dust into the sealed device.



HUBBELL Wiring Device-Kellems

### Watertight Pin & Sleeve Devices

Demanding environments call for high-performance pin & sleeve connections. Hubbell traditional IEC Pin & Sleeve devices are IP67 and ensure watertight performance while protecting users with a super tough, non-conductive housing and shrouded contact pins. For those who want more, Hubbell has taken its highest-performing pin & sleeve devices and made them better with The Advantage™ Series - the only IEC 60309 switch rated connection in the world. These switch-rated connections are UL witnessed IP69K and UL Type 4X and 12 devices. They are designed for use in harsh environments, the devices offer protection against water and dust.

### Advantage<sup>™</sup> Series Switch-Rated Pin & Sleeve



- · Approved as disconnecting means for both motor circuits and branch circuits
- Mates with existing installed base of IEC 60309-2 Pin and Sleeve devices
- UL witnessed IP69k and UL Type 4X and 12 environmental rating
- · Continuous, un-switched ground path

### **IEC Pin & Sleeve**



- Superior construction and engineered materials for maximum durability
- · Sequential contact engagement ensures the ground mates first and breaks last
- Thermoset polyester interiors provide unsurpassed ability to withstand high amounts of heat which may result from overload or arching

Advantage <sup>™</sup> Series Switch-Rated Pin & Sleeve					
Rating					
Color Coded by Voltage	Poles/Wires				
30A/32A 3Ø 250V	3P/4W				
30A 3Ø 480V	3P/4W				
30A 3ØY 277/480V	4P/5W				
30/32A 120/208V	4P/5W				
60A/63A 250V	2P/3W				

100A

3ØY 120/208V

-
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Pin & Sleeve			Pin 8
Rating Color Coded by Voltage	Poles/Wires	Plug, Connector and Receptacle	Rating Color C
30A/32A 3Ø 250V	3P/4W	HBLS430x9W	
30A 3Ø 480V	3P/4W	HBLS430x7W	
30A 3ØY 277/480V	4P/5W	HBLS530x7W	
30/32A 120/208V	4P/5W	HBLS530x9W	
60A/63A 250V	2P/3W	HBLS360x6W	3Ø`
60A 3Ø 480V	3P/4W	HBLS460x7W	
60/63A 3Ø 250V	3P/4W	HBLS460x9W	
60A 3ØY 277/480V	4P/5W	HBLS560x7W	
60/63A 3ØY 120/208V	4P/5W	HBLS560x9W	_3Ø`
100A 3Ø 480V	3P/4W	HBLS4100x7W	
100A 3Ø 250V	3P/4W	HBLS4100x9W*	(
100A 3ØY 277/480V	4P/5W	HBLS5100x7W	
1004			

HBLS5100x9W

IEC Watertight Pin & Sleeve		
Rating Color Coded by Voltage	Poles/Wires	Plug, Connector and Receptacle
20A 3Ø 480V	3P/4W	HBL420x7W
30A 3Ø 250V	3P/4W	HBL430x9W
30A 3Ø 480V	3P/4W	HBL430x7W
30A 3Ø 600V	3P/4W	HBL430x5W
30A 3ØY 277/480V	4P/5W	HBL530x7W
60A 250V	3P/4W	HBL460x9W
60A 3Ø 480V	3P/4W	HBL460x7W
60A 3Ø 600V	3P/4W	HBL460x5W
60A 3ØY 120/208V	4P/5W	HBL560x9W
100A 250V	3P/4W	HBL4100x9W
100A 3Ø 480V	3P/4W	HBL4100x7W
100A 3Ø 600V	3P/4W	HBL4100x5W
100A 3ØY 120/208V	4P/5W	HBL5100x9W

x= device: P (Plug), C (Connector), and R (Receptacle)

4P/5W

For complete listing of Hubbell Products, see our full line catalog.

x= device: P (Plug), C (Connector), R (Receptacle) and B (Inlet)

# Safety You Can See



Hubbell Wiring Device-Kellems has redefined the benchmark for safety with its new 30A motor disconnect switch. Six LEDs (3 line side/3 load side) have been incorporated into the cover, providing users critical information. Hubbell refers to this phase-indicating technology as inSIGHT." The integral LEDs provide both safety and convenience benefits. The insight clearly differentiates itself with features you can literally see.

### Circuit-Lock<sup>®</sup> inSIGHT<sup>™</sup> Unfused Disconnect Switches



- · LEDs provide insight about the electrical status of the switch within the enclosure prior to removing the cover
- Personnel can quickly and safely identify abnormal conditions such as a welded contact or dropped phase
- Users are provided a secondary way to visually confirm make/break on all phases

**inSIGHT**<sup>™</sup> Insight (n): the power or act

of seeing into a situation



\*For use on 3Ø Y circuits

**Disconnect Switches with LEDs\*** 

Disconnect with Jog switch and LEDs

Note: For use with 3Ø Y configurations only

Disconnect switch with HBLAC1 auxiliary contact

Replacement cover for 30A switches with LEDs

Disconnect switch with LEDs

**LED Replacement Covers** 

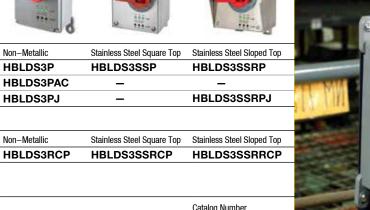
**Auxiliary Contacts** 

30 Amp Unfused

Description

Description





Description	Catalog Number
"Break After Main Break", 1 set of n/o contacts, 1 set of n/c contacts	HBLAC1**
"Break Before Main Break", 1 set of n/o contacts for use with variable frequency drives	HBLAC2**
Note: *Certified by NSF, International. **Up to two auxiliary contacts per enclosure.	



NEC® 430.102(B) requires each motor controller to have a disconnect within line of sight from the motor and driven equipment. Hubbell's Circuit-Lock® Unfused Disconnect Switches meet these code requirements, and are UL listed as a manual motor controller and also "suitable as a motor disconnect."

NFPA 70E® 120.5(7) requires the use of an adequately rated portable test instrument and a known voltage source to verify the absence of internal voltage.





# Line of Sight Disconnect for Safety



### NEC<sup>®</sup> 430.75(A) Disconnection

Motor control circuits shall be arranged so that they will be disconnected from all sources of supply when the disconnecting means is in the open position. The disconnecting means shall be permitted to consist of two or more separate devices, one of which disconnects the motor and the controller from the source(s) of power supply for the motor, and the other(s), the motor control circuit(s) from its power supply. Where separate devices are used, they shall be located immediately adjacent to each other.



NEC® is a registered trademark of the National Fire Protection Association (NFPA). NSF - National Sanitation Foundation.



8

### **Motor Control**

Hubbell motor control devices can safely disconnect power at any point in a circuit without powering down other equipment and sacrificing productivity. The NEC® requires motor controllers on equipment like HVAC units, compactors and back-up generators to have a disconnect within line of sight and allows a controller and disconnect to be the same device. By combining both functions in one device, Hubbell Circuit-Lock® eliminates the confusion of which switch is a motor controller or disconnect, providing owners and operators with a renewed level of comfort and safety.

### Circuit-Lock<sup>®</sup> Unfused Disconnect Switches



### Circuit-Lock<sup>®</sup> Fused Disconnect Switches

NEC® 430.109(A)(6) recognizes that a manual • motor controller and disconnect can be the same unit

to ensure maximum safety

Meets line of sight disconnect requirements

· High visibility handle is lockable to meet OSHA lockout/tagout requirements 29CFR 1910.147

Certified by MSS for hygiene in food processing applications



- Certified for current interrupting at full rated current and voltage
- High visibility red handle can be locked • in OFF position
- Type 4X enclosure with neoprene watertight gasket
- Accepts class "J" fuses



# CERTIFIED





Stainless Steel



Stainlass Staal

Descriptio	DN	Non-Metallic	Square Top	Sloped Top
	Disconnect switch	HBLDS3	HBLDS3SS	HBLDS3SSR
30A	With one HBLAC1 auxiliary contact	HBLDS3AC	HBLDS3SSAC	HBLDS3SSRAC
	For use with variable frequency drives	HBLDS3VFD	HBLDS3SSVFD	HBLDS3SSRVFD
60A	Disconnect switch	HBLDS6	HBLDS6SS	HBLDS6SSR
	With one HBLAC1 auxiliary contact	HBLDS6AC	HBLDS6SSAC	HBLDS6SSRAC
100A	Disconnect switch	HBLDS10	HBLDS10SS	HBLDS10SSR
	With one HBLAC1 auxiliary contact	HBLDS10AC	HBLDS10SSAC	HBLDS10SSRAC
Auxilia	ary Contacts for 30, 60 and 100 An	np Switches		
Descriptio	DN	Break Adter Main Break	Break Before Main Break	hallen hallen

#### HBLAC2 ALC: NOT THE OWNER. Auxiliary contacts 1 set of n/o & n/c contacts HBLAC1

### **Circuit-Lock®** Fused

Disconnect Switches 600V AC	IP66	- P	Ai C
Description	Catalog No.	1000	De
30A disconnect switch	FDS30*	2.20	A
60A disconnect switch	FDS60*	Land	
Note: *Class "J" fuses not include	d.		

### uxiliary

ontacts escription Normally Open Normally Closed HBLACFSNO HBLACFSNC 600 pilot duty

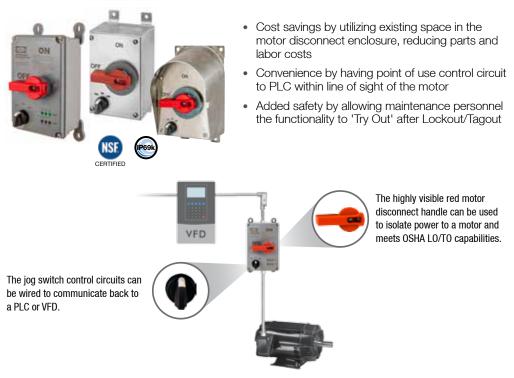


# "Try Out" After Lockout/Tagout

### **Jog Switch Disconnects**

In addition to all of the benefits of Hubbell's standard Circuit-Lock<sup>®</sup> disconnect, the jog switch version provides additional functionality. The black jog switch uses two auxiliary contacts for PLC communication. The jog has three settings: maintaining ON and OFF, as well as a momentary 'test' setting that enables users to send a bump/jog command to the PLC to energize a motor for a short period of time. These three settings offer several benefits:

### Circuit-Lock<sup>®</sup> Disconnect Switches with Jog Switch



### 30 and 60 Amp Disconnects with Jog Switch\*

Amps	Description	Catalog Numbers
	Non-Metallic Disconnect with Jog Switch	HBLDS3J
	Non–Metallic Disconnect with NO+NC Aux Contact and Jog Switch	HBLDS3ACJ
30A	Non-Metallic Disconnect with NO Break Before Main Aux Contact and Jog Switch	HBLDS3VFDJ
	Stainless Steel Disconnect with Jog Switch	HBLDS3SSJ
	Sloped Stainless Steel Disconnect with Jog Switch	HBLDS3SSRJ
60A	Non-Metallic Disconnect with Jog Switch	HBLDS6J

### **Replacement Covers and Auxiliary Contacts**

Description	Catalog Numbers
Replacement Cover for Non-Metallic 30A Disconnect with Jog Switch	HBLDS3RCJ
Replacement Cover for Stainless Steel 30A Disconnect with Jog Switch	HBLDS3SSRCJ
Replacement Cover for Sloped Stainless Steel 30A Disconnect with Jog Switch	HBLDS3SSRRCJ
Replacement Cover for Non–Metallic 60A Disconnect with Jog Switch	HBLDS6RCJ
"Break After Main Break", 1 set of n/o contacts, 1 set of n/c contacts	HBLAC1**
"Break Before Main Break", 1 set of n/o contacts	HBLAC2**

Note: \*Certified by NSF, International. \*\*Up to two auxiliary contacts per enclosure.









### Water & Dust Ingress Protection:

**IP69k Water Test** Extremely Hot (176°F) and High Pressure Water (up to 1450 psi) sprayed from various angles.

**IP69k Dust Test** Device is placed in a dust chamber for 8 hours while a vacuum tries to pull dust into the sealed device.





### **Installation Safety**





#### NEC® 430.102 Location. Controller. (A)

An individual disconnecting means shall be provided for each controller and shall disconnect the controller. The disconnecting means shall be located in sight from the controller location.

#### (2) Controller Disconnect.

The controller disconnecting means required in accordance with 430.102(A) shall be permitted to serve as the disconnecting means for the motor if it is in sight from the motor location and the driven machinery location.



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HUBBELL Wiring Device-Kellems

10

### **Motor Control**

Hubbell motor control devices are also available for use with the Hubbell LINKOSITY® modular plug-and-play power distribution system. MotorQuick® offers the functionality of a motor disconnect switch with the safety of factory pre-wired connections. LINKOSITY® connections make motor change outs fast and simple. Heavy duty manual motor controllers are also available for controlling and disconnecting power to equipment.

### **MotorQuick**<sup>®</sup>



- Combines Circuit-Lock® motor disconnect • with plug-and-play LINKOSITY® system for faster installation and replacement of motors
- Lockable handle meets OSHA lockout/tagout regulations
- Easily retrofits to existing hard wired installations with LINKOSITY® components
- Certified by ISS for hygiene in food processing applications

### **Manual Motor Controllers**



- · Available in double-pole and three-pole 30A and 60A 600V AC controllers
- Suitable as a motor disconnect
- Type 1 and Type 3R enclosures available •
- Optional finger guards (HBLFG30) fit 30A, 40A and 50A controllers

### Type 1 30A 3 Pole 600V AC

Description HBL1389D Non-Metallic (1) pre-wired LINKOSITY® female receptacle (load side) HBL1389MQR 5 ft. pre-wired LINKOSITY® female cable (load side) HBL1389MQ5 (1) pre-wired LINKOSITY® male receptacle (line side) HBL1389MQR2 (1) pre-wired LINKOSITY® female receptacle (load side)



Type 4X 30A 3 Pole 600V AC

Description



HBLDS3 HBLDS3SS HBLDS3SSR Non-Metallic Stainless Steel Square Top Stainless Steel Slope Top (1) pre-wired LINKOSITY® female receptacle (load side) HBLDS3MQR HBLDS3SSMQR HBLDS3SSRMQR HBLDS3MQ5 HBLDS3SSMQ5 HBLDS3SSRMQ5 HBLDS3MQR2 HBLDS3SSMQR2 HBLDS3SSRMQR2

### Manual Motor Controller

Description	Double Pole	Three Pole
30A motor controller	HBL7832D	HBL7810D
In Type 1 enclosure; non-metallic cover	HBL1392D	HBL1389D
In metal Type 1 enclosure	HBL1372D	HBL1379D
In NEMA 3R non-metallic enclosure	HBL13R22D	HBL13R23D
In metal Type 3R enclosure	HBL13R92D	HBL13R89D
In NEMA 3R flip lid enclosure	HBL13R12D	HBL13R13D
60A motor controller	HBL7862D	HBL7863D



For complete listing of Hubbell Products, see our full line catalog.

5 ft. pre-wired LINKOSITY® female cable (load side)

(1) pre-wired LINKOSITY® male receptacle (line side)

(1) pre-wired LINKOSITY® female receptacle (load side)

# **Plug and Play Power System**

### **Modular Power**

Factories and industrial environments often need flexible power distribution systems for all types of equipment. Hubbell LINKOSITY<sup>®</sup> modular power distribution system is ideal for ensuring safety when providing flexible power in these applications. Hubbell LINKOSITY<sup>®</sup> provides the necessary system components to create code compliant safe installations.

### **LINKOSITY®**



Power Components 20A, 30A up to 600V Cables and Receptacles		9-			
Device Type	Ratings	Wires	Conductor Colors**	Length	n (ft.)
<b>PH</b> Double Ended Cable - Male/Female Straight	20 20A up to 600V	02 -	PA	001	1'
PM Male Single Ended Straight		05	Green/Yellow;	005	5'
<b>PN</b> Male Single Ended 90°			Black (all others)	010	10'
PF Female Single Ended Straight	23 20A up to 600V	03	PB	015	15'
PG Female Single Ended 90°	Specialty construction	04	Green/Yellow	020	
<b>PQ</b> Double Ended Cable with Female 90°	(Includes isolated ground	05	White	025	
<b>PR</b> Double Ended Cable with Male 90°	on 6 wire and 10AWG	06	Black (all others)	030	
PS Double Ended Cable with (2) 90° Connectors	super neutral conductor				
<b>RF</b> Female Receptacle; ½" N.P.T. rear thread	on 5 and 6 wire devices)		**other color	035	
<b>RM</b> Male Receptacle (Inlet); ½" N.P.T. rear thread	/	04	codes available	040	
	<b>30</b> 30A up to 600V	04	upon request	045	45'
				050	50'

Example Catalog Number: PH2306PB05



LINKOSITY	
Description	Catalog Numbers
M/F/F Tee, 20A, 2P	TX2002002002T00
M/F/F Tee, 20A, 3P	TX2003002003T00
M/F/F Tee, 20A, 4P	TX2004002004T00
M/F/F Tee, 20A, 5P	TX2005002005T00
M/F/F Tee, 20A SNIG, 4P	TX2304002304T00
M/F/F Tee, 20A SNIG, 6P	TX2306002306T00
M/F/F Tee, 20A SNIG, A Phase Tap	TX2306002304A00
M/F/F Tee, 20A SNIG, B Phase Tap	TX2306002304B00
M/F/F Tee, 20A SNIG, C Phase Tap	TX2306002304C00
M/F/F Tee, 30A, 4P	TX3004003004T00

Description	For use with Female Receptacle	Male Inlet
20A and 30A	CCMBC	CCFBC
Receptacle		
Closure Cap		



**NEC® 670** on Industrial Machinery refers to NFPA 79-2015, Electrical Standard for Industrial Machinery where sections 13.1.2.3 and 13.1.7.1 specifically indicate that molded connections factory-applied to cable and cords are to be permitted.

#### NEC® 336.10(7)

Permits type TC-ER cable in transitions between cable trays and the utilization equipment or devices when secured at intervals not more than 6 ft without continuous support.



NEC<sup>®</sup> is a registered trademark of the National Fire Protection Association (NFPA).





# Wire Security and Strain Relief





NEC® 400.14 Pull at Joints and Terminals Flexible cords and cables shall be connected to devices and to fittings so that tension is not transmitted to joints or terminals.

#### **OSHA Regulation 29 CFR** 1926.405(g)(2)(iv) Strain relief.

Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

#### 1926.405(g)(2)(v) Cords passing through

holes. Flexible cords and cables shall be protected by bushings or fittings where passing through holes in covers, outlet boxes, or similar enclosures.



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HUBBEL

12

Wiring Device-Kellems

### Wire Management

Hubbell wire mesh grips are designed to prevent strain from being transmitted to joints and terminals on electrical cords, cables and conduit. This provides greater security than using a fitting alone, making electrical systems safer by preventing cable pull-out and controlling cable arc-of-bend. The positive action mesh grips distributes loads equally over the cable jacket.

### **Strain Relief Grips**



### **Support Grips**



- Multi-weave grip products provide arc-of-bend control minimizing cable damage and extending cable life
- · Ideal for providing maximum safety where conduit is subject to vibration, motion or strain
- Stainless steel mesh is corrosion resistant and optional liquidtight fittings provide a watertight seal

- Ideal for ensuring safety by supporting electrical cable • service drops or hoses
- Positive action mesh grip design provides equal loading throughout the entire grip length
- Available in heavy duty, standard and light duty for a variety of applications

#### Kellems® Deluxe Cord Grips

Cora Grips	di -	
Deparintion	Grip Diameter Range	Catalog No.
Description Straight male	Inches (cm) .250"312" (.6379)	Catalog No. 07401001
thread; 3% in.	.312"375" (.7995)	07401002
N.P.T. thread size	.375"437" (.95-1.11)	07401003
Straight male	.187"250" (.4763)	07401004
thread; ½ in.	.250"375" (.6395)	07401006
N.P.T. thread size	.375"500" (.95-1.27)	07401008
	.500"625" (1.27-1.59)	07401010
90° male thread;	.250"312" (.6379)	07401071
3⁄8 in. N.P.T.	.312"375" (.7995)	07401072
thread size	.375"437" (.95-1.11)	07401073
90° male thread;	.187"250" (.4763)	07401074
1⁄2 in. N.P.T.	.250"375" (.6395)	07401076
thread size	.375"500" (.95-1.27)	07401078
	.500"625" (1.27-1.59)	07401080*
45° male thread;	.250"312" (.6379)	074011236
1⁄2 in. N.P.T.	.375"500" (.951.27)	074011021
thread size	.500"625" (1.27-1.59)	074011237
45° male thread;	.500"625" (1.27-1.59)	074011049
3⁄4 in. N.P.T.	.625"750" (1.59-1.90)	074011051*
thread size	.750"875" (1.90-2.22)	074011239*

#### \* Cable jacket may have to be stripped to pass through connector body.

For complete listing of Hubbell Products, see our full line catalog.

Single Eye, Closed Mesh\*\*

For permanent support when

cable end is available to be



02201019

installed through grip.		
Cable Diameter Range Inches (cm)	Approx. Breaking Strength Lbs. (N)	Catalog No.
.50"62" (1.27-1.57)	530 (2,357)	02201013
.63"74" (1.60-1.88)	790 (3,514)	02201014
.75"99" (1.90-2.51)	1,020 (4,537)	02201015
1.00"-1.24" (2.54-3.15)	1,610 (7,161)	02201017
1.25"-1.49" (3.17-3.78)	1.610 (7.161)	02201018

1.50"-1.74" (3.81-4.42) 1,610 (7,161) \*\*Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

### Single Eye, Split Mesh, Rod Closing\*

For support when cable end is not available.

Cable Diameter	Approx. Breaking	
Range Inches (cm)	Strength Lbs. (N)	Catalog No.
.50"62" (1.27-1.57)	790 (3,514)	02203013
.63"74" (1.60-1.88)	790 (3,514)	02203014
.75"99" (1.90-2.51)	1,020 (4,537)	02203015
1.00"-1.24" (2.54-3.15)	1,610 (7,161)	02203017
1.25"-1.49" (3.17-3.78)	1,610 (7,161)	02203018
1.50"-1.74" (3.81-4.42)	1,610 (7,161)	02203019

\*\*Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

# **Protect Wires from Moisture and Damage**

### Wire Management

Protecting electrical circuitry on the factory floor improves safety for both people and equipment by preventing mechanical damage and moisture from impacting the integrity of the wiring. Hubbell PolyTuff® non-metallic liquidtight conduit and fittings are commonly used between disconnect switches and equipment in industrial applications to protect wiring and improve safety. Metallic liquidtight fittings are also available for certain applications.

### PolyTuff® Non-Metallic Liquidtight Conduit and Tubing



- Non-metallic construction ends metal fatigue and separation problems
- · Cuts cleanly with a knife or PVC cutter with no jagged metal edges
- Handles twists, turns, bends, switchbacks and straightaways with ease
- Available with rigid PVC core PolyTuff® I or flexible corrugated wall PolyTuff® II

### **PolyTuff® Liquidtight Fittings**



- SwivelLok® nylon two-piece swivel body enables fitting to twist from 0° to 90°
- Neoprene O-ring ensures liquidtight seal at hub or enclosure

Straight with Male

Non-integral ferrule provides conduit seal and superior pullout protection

PolyTuff I <sup>®</sup> Conduit and PolyTuff II <sup>®</sup> Tubing		Q	Q
Trade Size		PolyTuff I	PolyTuff II
(metric designator)	Feet (m)	Conduit	Tubina

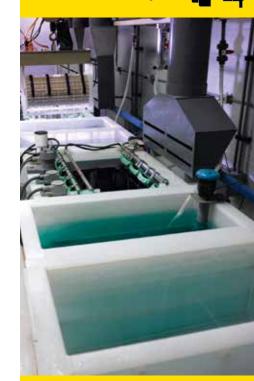
(metric designator)	Feel (III)	Conduit	rubing	
1/4 (10)	100 (30.5)	_	B2025	
3⁄8 (12)	100 (30.5)	G1038	B2038	
1⁄2 (16)	100 (30.5)	G1050	B2050	
34 (21)	100 (30.5)	G1075	B2075	
1 (27)	100 (30.5)	G1100	B2100	
1¼ (35)	100 (30.5)	G1125	B2125	
1½ (41)	50 (15.2)	G1150	B2150	
2 (53)	50 (15.2)	G1200	B2200	



(metric designator)	Fitting and Conduit Kit	Catalog No.
1⁄2 (13)	(2) PS0509NGY,	PS05GYKIT
34 (19)	6' G1050	
	(2) PS0759NGY,	PS07GYKIT
	6' G1075	

#### Non-Metallic Fittings for Non-Metallic Conduit Trade Size (metric designator) Black Gray 1/4 (6) F2025 P038NGYA P038NBKA 3/8 (9) P050NGYA 1/2 (13) P050NBKA 3/4 (19) P075NBKA P075NGYA P100NGYA P100NBKA 1 (25) 11/4 (32) P125NBK P125NGY 11/2 (38) P150NBK P150NGY 2 (51) P200NBK P200NGY SwivelLok® Multi-Position with Male Non-Metallic





### NEC® 356.10 Uses Permitted. LFNC shall be permitted to be used in exposed or concealed locations for the following purposes:

- (1) Where flexibility is required for installation, operation, or maintenance.
- (2) Where protection of the contained conductors is required from vapors, liquids or solids.
- (3) For outdoor locations where listed and marked as suitable for the purpose.
- (4) For direct burial where listed and marked for the purpose.
- (5) Type LFNC shall be permitted to be installed in lengths longer than 1.8 m (6 ft) where secured in accordance with 356.30.
- (6) Type LFNC-B as a listed prewired assembly, trade size 1/2 through 1 conduit
- (7) For encasement in concrete where listed for direct burial and installed in compliance with 356.42.



#### Fixed 90°Fittings for Non-Metallic Conduit

SwivelLok<sup>®</sup>

Trade Size

Trade Size (metric designator)	Black	Gray	Trade Size (metric designator)	Black	Gray
1/4 (6)	F20259	-	3/4 (19)	P0759NBK	P0759NGY
3/8 (9)	P0389NBK	P0389NGY	1 (25)	P1009NBK	P1009NGY
1/2 (13)	P0509NBK	P0509NGY	1¼ (32)	P1259NBK	P1259NGY

NEC® is a registered trademark of the National Fire Protection

Association (NEPA)

# **Eliminate Tripping Hazards**



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#### UL355 4.3, 4.4

Cord Reels, that employ Ground-Fault Circuit Interrupter outlet(s) and are connected to the power supply by means of flexible cord with an attachment plug and/or that employ slip rings, shall be provided with open neutral protection as part of the GFCI.

AFL version allows cord reel installation to conform to **NEC®** Article 511 concerning installation of electrical devices in commercial garages, repair facilities and storage locations by positioning the switch above the defined area where hazardous fumes may collect.



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14

Wiring Device-Kellems

### **Cable Management**

Cable reels can help eliminate unmanaged cords and cables that would otherwise cause trip hazards or an increased potential of electric shock. Hubbell offers a wide range of cord reels that provide cable protection, including watertight, industrial, commercial and static discharge reels with grounding jaw clamps for a low resistant ground termination for maximum safety.

### **Industrial Cord Reels**



- Provide safe convenient power and lighting for demanding industrial applications and environments
- All steel construction can be ceiling. wall or bench mounted
- Keeps cord organized and off the floor, saves time and money and improves safety while extending cord life

### **Commercial Cord Reels**



- Lighter weight for the less demanding requirements of commercial and light industrial environments
- Eliminates unmanaged cords which can cause trip hazards or an increased potential of electric shock
- AFL version provides automatic lamp shut-off to switch power above the floor height requirement
- Holds cord at desired length and provides smooth cord retraction

#### **Industrial Power Cord Reels**

		NEMA	Cable	Volts		Weight		
Cord End		Style	Feet (m)	AC	Cable Type	Lbs. (kg)	Catalog Number	
HBL5269C 15A	connector	5-15R	45 (13.7)	125	#12/3 SJ	23 (10.4)	HBL45123C	
HBL5369C 20A	connector	5-20R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123C20	
Portable duplex	15A	5-15R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123R	
outlet box, gray	20A	5-20R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123R20	
	15A GFCI	5-15R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123GF15	
	20A GFCI	5-20R	45 (13.7)	125	#12/3 SJ	28 (12.7)	HBL45123GF20	
	20A (2) GFCI	5-20R	45 (13.7)	125	#12/3 SJ	25 (11.3)	HBL45123GF220WM1	
HBL2313 20A c	onnector	5-20R	45 (13.7)	125	#12/3 SJ	23 (10.4)	HBL45123TL20	-
Pivot Base 330°	Rotation	_	-	-	-	5 (2.3)	HBL340PB	
	E.				6		<b>(</b>	

### Commercial Cord Reels

	Watts	Cable	Volts		Weight	
Cord End	(Max)	Feet (m)	AC	Cable Type	Lbs. (kg)	Catalog Number
Triple tap outlet; 15A	1200	40 (12.2)	125	12/3 SJTW	9 (4.1)	HBLC40123TT
Wire leads; 10A	1250	25 (7.6)	125	16/3 SJT	8.5 (3.9)	HBLC25163
HBL5969VBLK connector; 10A	1250	25 (7.6)	125	16/3 SJT	8.5 (3.9)	HBLC25163C
Metallic incandescent hand lamp with receptacle, yellow	1625	25 (7.6)	125	14/3 SJT	9.5 (4.3)	HBLC25143IN
Fluorescent hand lamp and in-line receptacle, white	1200	40 (12.2)	120	16/3 SJT	9 (4.1)	HBLC40163FL
Non-metallic incandescent hand lamp and automatic shut off switch, yellow	75	25 (7.6)	125	14/3 SJT	9 (4.1)	HBLC25163AIN
Fluorescent hand lamp and automatic shut off switch, white	13	40 (12.2)	120	18/2 SJTOW	8.2 (3.7)	HBLC40182AFL
LED hand lamp, with flashlight end, white	9	40 (12.2)	125	18/2 SJTOW	8.2 (3.7)	HBLC40182LED



# **Prevent Damage to Cables**

### **Hose and Cable Protection Systems**

Exposed cables, cords and hoses can be a trip hazard for pedestrians, as well as a potential shock hazard. Hubbell offers a variety of hose and cable protection systems that provide a safe ramping system for both pedestrians and vehicles to pass over cables and hoses.

### TrukTrak® and TredTrak®



- Safeguards cables and cords from vehicle and pedestrian traffic
- TrukTrak<sup>®</sup> is ideal for industrial environments where trucks and forklifts are present
- TredTrak<sup>®</sup> supports pedestrian and light vehicle traffic in public, institutional and commercial applications
- Complies with NEC Articles 518 and 525 for insulating cables at carnivals, amusement parks, convention centers and similar public areas

### **AccessTrak**<sup>®</sup>



- Modular cable protection for compliance with ADA accessibility guidelines
- Expandable five channel system that limits exposure of cables and hoses
- Protects cable and hose diameters up to 1.31 inches



### NEC® 110.26(E)(2)

**Outdoor.** Outdoor electrical equipment shall be installed in suitable enclosures and shall be protected from accidental contact by unauthorized personnel, or by vehicular traffic.

#### OSHA 1926.416(e)(1)

Requires that worn or frayed electrical cords or cables shall not be used. Precautions to mitigate wear include protection from damage and pinch points.



 $<sup>\</sup>ensuremath{\mathsf{NEC}}^{\$}$  is a registered trademark of the National Fire Protection Association (NFPA).





Description	TrukTrak®	TredTrak®
5 Channel, blue and yellow	HBLTT5B	HBLTRED5B
5 Channel end caps (pair only), yellow	HBLTT5ECB	HBLTRED5ECB
5 Channel female end caps (2 females), yellow	_	HBLTRED5ECFB
5 Channel 45° right turn, blue and yellow	HBLTT545RB	-
5 Channel 45° left turn, blue and yellow	HBLTT545LB	_
5 Channel "X" fitting, blue and yellow	_	HBLTRED5XB
5 Channel "Y" fitting, blue and yellow	_	HBLTRED5YB
3 Channel, blue and yellow	HBLTT3B	-
3 Channel end caps (pair only), yellow	HBLTT3ECB	-
2 Channel, blue and vellow	HBLTT2B	_

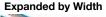
### AccessTrak® System

Description 5 Channel AccessTrak kit\*, blue and gray 5 Channel AccessTrak trough, blue and gray AccessTrak trough end rails (set), gray AccessTrak ramps (set), blue



AccessTrak ramp end rails (set), gray HBLAT5RAMPEF \*Consists of (1) HBLAT5A; (1 set) HBLAT5ERA; (1 set) HBLAT5RAMPA; (2 sets) HBLRAMPERA. Expanded by Length







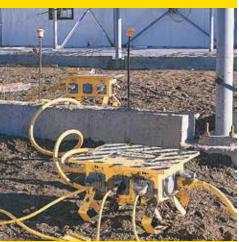
# **Delivery of Safe, Convenient Temporary Power**





**NEC® 590.6 Ground Fault Protection** for Personnel. Requirements for GFCI protection for temporary wiring installations.

NEC® 110.12(A) Unused Openings Unused openings, other than those intended for the operation of equipment, those intended for mounting purposes, or those permitted as part of the design for listed equipment, shall be closed to afford protection substantially equivalent to the wall of the equipment.



NEC® is a registered trademark of the National Fire Protection Association (NFPA).



### **Temporary Power**

Construction sites and outdoor events need to ensure maximum safety when providing temporary electrical power for equipment and lighting, especially since these applications involve frequent plug-ins and disconnects. Hubbell temporary power distribution systems come in a variety of device types for protecting people against electrical shock in a wide range of applications and job sites.

### **SPIDER II® Temporary Power Boxes**



### Portable Outlet Boxes and 50A Cable Sets and Receptacles



- Provides a safe rugged portable enclosure that can be used in many applications and complies with NEC® 110.12 regarding unused cable openings in metallic boxes
- Provides Type 3R protection with weatherproof cover plates
- Maximize strain relief protection with the addition of a Kellems® mesh grip

Catalog Numbers

**SR50** 

SCB50

SCB100

SCC06

SCC50

TPC50

**TPC100** 

HBL560R9W

### **Temporary Power Boxes**

			Protection		cle Type
Max Rating	Туре	Receptacle Rating	Overload/GFI	Straight Blade	Twist-Lock <sup>®</sup>
Spider <sup>®</sup> II	(7) Receptacles	20A, 125V	Yes/Yes	SDSB1A	SDTL1A
30A, 120/240V AC	(1) Twist-Lock <sup>®</sup> (inlet & outlet)	30A, 120/240V	No/No		
Spider <sup>®</sup> II	(7) Receptacles	20A, 125V	Yes/Yes	SBSB1A	SBTL1A
50A, 120/240V AC	(1) Twist-Lock <sup>®</sup> (inlet & outlet)	50A, 125/250V	No/No		
Spider <sup>®</sup> II	(6) Receptacles	20A, 125V	Yes/Yes	SBSB2	SBTL2
50A, 120/240V AC	(1) Twist-Lock <sup>®</sup> (inlet & outlet)	30A, 250V	Yes/Yes		
	(1) Twist-Lock <sup>®</sup> (inlet & outlet)	50A, 125/250V	No/No		
Spider® II	(6) Receptacles	20A, 125V	Yes/Yes	SCSB0	SCTL0
60A, 3Ø 120/208V	(1) Pin & Sleeve (inlet & outlet)	60A, 3ØY,	No/No		
		120/208V			
50A 120/240V AC	(6) Receptacles	20A, 125V	Yes/Yes	TPDS	TPDL
	(1) Twist-Lock <sup>®</sup>	30A, 250V	Yes/No		
	(1) Twist-Lock <sup>®</sup> (inlet & outlet)	50A 125/250V	No/No		

Portable Outlet Boxes			50A Cable Sets	15
Description		Catalog Numbers	and Receptacles	
Box w/ cord strain relief	yellow	HBLPOB1	Description	
(1) blank cover plate	black	HBLPOB1BK	50A pre-wired wall m	nounted
Yellow box with cord strain relief	gray	HBLPOB1D*	receptacle, with 2 ft.	wire leads
(2) duplex (indoor) cover plates	yellow	HBLPOB1DY	50A cord set	50 ft.
Non-Metallic FS Cover Plates			(input/output)	100 ft.
Blank gray plate with foam gasket		HBLP14FS	60A cord set	6 ft.
Duplex plate	gray	HBLP8FS	(input/output)	50 ft.
	yellow	HBLP8FSY	60A, 3Ø 120/208V p	in and
Single receptacle gray plate	1.56"	HBLP7FS	sleeve wall mounted	receptacle
	1.39"	HBLP720FS	50A cord set for use	50 ft.
Rectangular opening gray plate		HBLP26FS	with <b>TPDS</b> and <b>TPD</b>	L 100 ft.

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# BBELLSAFE

### **Temporary Lighting**

Hubbell Wiring Devices' line of temporary lighting products offers solutions for industrial jobs, or any application that requires flexible and dependable illumination. The full offering includes a wide range of products in construction site lighting and industrial lighting. Durable and built for longevity, our devices provide the safety and reliability essential at any industrial job site. Whether it's a hand light, cordless or wide area light, Hubbell has what you need.

### **Construction Site Lighting**



### **Maintenance and Work Lights**



- Light strings for all applications in a variety of models
- Light panels are spaced 10 feet apart and all panels, plugs and connectors are molded for added durability
- Highly impact-resistant material for easy transportation and storage when not in use.
- Consider choosing LED lighting for a durable bulb that saves energy, provides instant illumination and are rated to last 50,000 hours
- Fluorescent lights are designed with all electrical components located inside a closed chamber for added safety
- Lamps remain cool while lighting large areas
- Work light models can be paired with an adjustable hanging kit or magnetic mounts for positioning flexibility
- Portable work lights can be transported and remounted, while long cords allow free movement in the work space

### Metal Halide and LED Lights

Description		Rating	Watts	Lumen Output	Cord Length	Catalog Number	
High bay metal halide light with wire guard		15A	400	29,000	3 ft.	HBLMHHB400	
High bay LED light with wire guard		125V	120	14,000	5 ft.	HBLLEDHB120	
LED Stringer Lights							
Description	No. of Fixtures	Rating	Cord Type	Lumen Output	Cord Length	Catalog Number	
90 LEDs per fixture, light string with magnetic base included	1		18/2 SJTW	450*	20 ft.	HBL182S20LED	
	5		18/2 SJTW	450*	50 ft.	HBL182S50LED	
90 LEDs per fixture, light string	10	15A	18/2 SJTW	450*	100 ft.	HBL182S100LED	
60 LEDs per fixture, light string	1	125V	18/2 SJTW	1,100*	20 ft.	HBL182S20LEDH	
with magnetic base included	5		18/2 SJTW	1,100*	50 ft.	HBL182S50LEDH	
28W High power LED light string with inline ON/OFF switch	_		16 AWG SJTOW	2,928	6 ft.	HBLLS2834	
Magnetic clip bracket for LED string fixtures	_	_	_	_	_	HBLSTMC	

\*Lumens per fixture.

#### **LED Maintenance Worklights**

Description	Outlet Rating	Rating	Cord Type	Lumen Output	Cord Length	Watts	Catalog Number
LED Industrial maintenance light	N/A		16/3 SJEOW	2928		28	HBLML2825L
LED work light with end light feature	N/A	15A 125V	18/2 SJTOW	920/120	25 ft.	9	HBLWL25LED
LED work light with end light feature & tool tap	12 Amp	1250	16/3 SJTOW	920/120		9	HBLWL25LEDT



### **OSHA 1926.56(a):** OSHA Regulations for Construction, Minimum Illumination in Foot-Candles

umens	Area of Operation
5	General construction area lighting
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	Indoors: warehouses, corridors, hallways, and exitways
5	Tunnels, shafts, and general underground work areas: (exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading)
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms carpenter shops, rigging lofts, and active store rooms, mess halls, and indoor toilets and workrooms
30	First aid stations, infirmaries, and offices





# **Personnel Protection and Safety**



For non-residential installations all receptacles installed in nondwelling locations specified in **NEC® Article 210.8(B)(1) to (10)** shall have ground fault circuit interrupter protection for personnel. These areas include:

- (1) Bathrooms
- (2) Kitchens
- (3) Roof Tops
- (4) Outdoors
- (5) Sinks (within 6' of edge)
- (6) Indoor Wet Locations
- (7) Locker Rooms/Shower Facilities
- (8) Garages/Service Bays
- (9) Crawl Spaces
- (10) Unfinished Basements



 $\mathsf{NEC}^\otimes$  is a registered trademark of the National Fire Protection Association (NFPA).

### **Ground Fault Circuit Interrupters (GFCIs)**

Required by code, receptacles in any wet area must all be protected with ground fault circuit interrupters (GFCIs) that stop the flow of electric current to protect people in the presence of a ground fault. Hubbell offers AUTOGUARD<sup>™</sup> and standard heavy duty GFCI receptacles. AUTOGUARD<sup>™</sup> is a self-test version that continually tests electronic circuitry automatically. The AUTOGUARD<sup>™</sup> unit features a green LED to indicate "power-on" and a red LED that is both a "trip indicator" when solid, and an "end of life indicator" when flashing. The GFCI sensing modules work in conjunction with hydraulic magnetic circuit breakers to interrupt power in the event of a ground fault condition.

### **Extra Heavy Duty GFCI Receptacles**



- Patented tamper-resistant design limits improper access to energized contacts
- Heavy duty brass bridge to withstand abuse
- Self-Test units continually tests and monitors for protection automatically
- No power at device face if reverse wired, eliminating false assumption of protection
- 10 kA Short Circuit Current Rating

### **Sensing Modules**



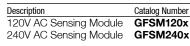
- Monitors electrical circuit with no direct load present
   at the module
- Hydraulic breakers available from 1 to 50 AMP meets Mil-Std-202
- 120 and 240 volt modules available in automatic or manual "safe start" reset versions
- Enclosure Type 4X rating
- UL 1053 Compliant
- Tamper-Resistant Weather Resistant Extra Heavy Duty Self Test GFCI Receptacles

	Color	15A 125V	20A 125V
Flush, polyester	Black	GFR5262SGBK	GFR5362SGBK
face, back and	Brown	GFR5262SG	GFR5362SG
side wired,	Gray	GFR5262SGGY	GFR5362SGGY
multiple drive	lvory	GFR5262SGI	GFR5362SGI
screws.	Red	GFR5262SGR	GFR5362SGR
	White	GFR5262SGW	GFR5362SGW

Circuit Guard Hard Wired 3 UL Type 4X R	0A GFCI 💦 💦	7	
Description	Voltage	Alarm	Catalog Number
Hard wired;	120V AC	None	GFHW13x05
manual and	120V AC	Audible	GFHW13x15
automatic set	240V AC	None	GFHW23x05
GFCls.	240V AC	Audible	GFHW23x15
	120/240V AC	Audible	GFHW33x15
	3Ø 250V AC	None	GFHW53x
	3Ø 120/208V AC	None	GFHW43x

x= 1 (Automatic) or 0 (Manual) Set





x= A (Automatic) or M (Manual) Set

### GFCI Sensing Module Circuit Breakers

GFCI Sensing Module

50A Maximum



Catalog Number Configurator. Example: **GFSMCB120401P** 

GFSMCB	120	40	1P
Ground Fault Sensing Module		1 thru 50 Amp	<b>1P</b> 2P
Circuit Breaker	120/240 Volt	t	3P

<b>Circuit Guard® Plug-In GFCI Portable</b> 15A, 120V AC	1979.
Description	Catalog Number
Three outlet plug-in	GFP315A

GFI Tester 120V AC		
Description	Catalog Number	
Ground fault tester	GFT2G	



# **Minimize Electrical Shock Hazards**

### **Ground Fault Circuit Interrupters (GFCIs)**

GFCIs are also critical for protecting people when using portable line cords and outlets in a variety of indoor and outdoor applications. Hubbell Circuit Guard® GFCI line cords are available with an Automatic Set feature for providing safety in applications where equipment is intended for continuous use but where temporary power failure is undesirable such as pumps, pressure washers or portable lighting. Manual Set GFCIs are also available for applications where operator injury might occur if equipment were to restart after a power failure such as drills, saws, lathes and grinders. "Portable GFCI" provides open-neutral protection for temporary power applications.

### **Portable GFCI Line Cords**



- Provides a watertight housing for maximum safety in harsh environments
- Available with either automatic and manual set feature to fit the application
- Bright indicator light provides fault confirmation from a distance

### **Portable GFCI Outlets**



- Ideal for providing safety in applications requiring multiple outlets
- · Features gasketed cover to protect outlets not in use
- Ensures safety by interrupting power when leakage to ground is 4 to 6 milliamperes

Circuit Gu Portable G Line Cords	FCI	1	7		Circuit Guard <sup>®</sup> Wired On Straig Portable GFCI P 15A 125V AC Industrial Grade		
Description	Length	GFCI Cor	rd Line	w/ Stripped Leads	Description	Cat. No.	
15A 120V A	C 18 in.	GFP4	C15x	-	Manual set; plug; b		
	6 ft.	GFP6	C15x	-	Manual set; plug; y	ellow GFP52	66CY
	15 ft.		_	GFPOEMx	Manual Set; plug w	ith GFP1C	;
	25 ft.	GFP2	5C15x	-	1 ft. Line cord		
20A 120V A			C20M	-	Commercial Grade		
x= A (Automa	itic) or M (Ma	nual) Set			Description	Cat. No.	
					Field Wireable; blac		5v
Portable G Line Cords							-
Rating 15A 120V AC	Length 2 ft. 15 ft. 25 ft	Single GFP2Cx – GEP25Cx	Triple Tap GFP2TTx – GFP25TT	w/ Flying Leads GFP15Lx	Multiple Outlet Portable GFCI	4	
15A	2 ft. 15 ft. 25 ft.	GFP2Cx		GFP15Lx x —	Portable GFCI Description		Cat. No.
15A	2 ft. 15 ft. 25 ft. 35 ft.	GFP2Cx — GFP25Cx —	GFP2TTx	GFP15Lx	Portable GFCI		GFP15M
15A 120V AC x= A (Automa <b>Circuit Gu</b> <b>In-Line GF</b> 2 ft. cord ler	2 ft. 15 ft. 25 ft. 35 ft. ttic) or M (Ma ard® CI ngth	GFP2Cx GFP25Cx nual) Set	GFP2TTx GFP25TT	GFP15Lx x — GFP35Lx	Portable GFCI Description 4-Outlet; 2-Duplex; Manual Set GFCI Module	15A 120V AC 20A 120V AC	GFP15
15A 120V AC x= A (Automa Circuit Gu In-Line GF 2 ft. cord ler Description	2 ft. 15 ft. 25 ft. 35 ft. ttic) or M (Ma ttic) or M (Ma <b>ard®</b> CI ngth Single	GFP2Cx GFP25Cx nual) Set	GFP2TTx GFP25TT	GFP15Lx x – GFP35Lx	Portable GFCI Description 4-Outlet; 2-Duplex; Manual Set GFCI Module UL Type 3R Rate	15A 120V AC 20A 120V AC	GFP15M GFP20I
15A 120V AC x= A (Automa In-Line GF 2 ft. cord ler Description 15A 120V A	2 ft. 15 ft. 25 ft. 35 ft. (tic) or M (Ma (tic) or M (tic) or M	GFP2Cx GFP25Cx nual) Set	GFP2TTx GFP25TT	GFP15Lx x – GFP35Lx Locking	Portable GFCI Description 4-Outlet; 2-Duplex; Manual Set GFCI Module UL Type 3R Rate Rating	15A 120V AC 20A 120V AC	GFP15I GFP20I
15A 120V AC x= A (Automa Circuit Gu In-Line GF 2 ft. cord ler Description	2 ft. 15 ft. 25 ft. 35 ft. itic) or M (Mai ard® iCI ngth Single iC GFPIL18 iC –	GFP2Cx GFP25Cx nual) Set	GFP2TTx GFP25TT	GFP15Lx x – GFP35Lx	Portable GFCI Description 4-Outlet; 2-Duplex; Manual Set GFCI Module UL Type 3R Rate	15A 120V AC 20A 120V AC	GFP15M GFP20I





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# **Comply with OSHA Safe Work Practices**



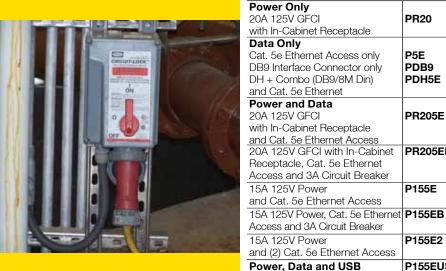


### NFPA 70E®:

 Electrical equipment enclosures can ONLY be accessed by qualified personnel with extensive protective clothing and equipment, including fire-resistant suits and hoods with non-conductive wands.

### NFPA 79: Electrical Standard for **Industrial Machinery**

- ALL utility receptacles must be **GFCI** protected
- ALL external utility receptacles must be covered
- ALL covers must maintain enclosure rating



### Arc Flash Safety

An arc flash is a short circuit that travels through air from one live circuit to another. Problems including gaps in insulation, dust or corrosion on the surface of a conductor, or even use of substandard components can cause serious safety hazards and equipment failures. Arc flash incidents can be extremely costly to a business and can result in serious or even fatal burns, as well as damage to eyesight. Hubbell PANEL-SAFE™ and mechanical interlocks provide arc flash safety by ensuring isolation from live electrical components.

### **PANEL-SAFE®**



### Mechanical Interlock

**PANEL-SAFE® Access Ports** 

15A 125V Power, Cat. 5e and (1) 3A USB

(1) USB Port

(2) USB Ports

20A 125V GFCI, Cat 5e and:

Description



- Available in Type 4 and 4X versions with protective clear cover
- Provides overcurrent protection for both power and data access ports
- Ensures safety with finger-safe contacts and Hubbell GFCI functionality
- Include products such as GCI protected receptacles, 5e ethernet access, 3A USB, DB9 or 3A circuit breaker
- Eliminates the possibility of making and breaking the circuit under load providing safe connections to portable equipment
- Non-metallic enclosure can be connected to metallic conduit and not interfere with the ground continuity
- Highly visible red handle can be locked out to comply . with OSHA lockout/tagout regulations
- · UL/CSA certified as a manual motor controller and also as suitable as a disconnect



**PR20** 

P5E

PDB9

PDH5E

**PR205E** 

PR205EB

P155E

P155E2

P155EUSB

PR205EUSBA

PR205EUSBA2

NEMA TYPE 4X	Rating Color Coded	Poles/	Mechanical
	by Voltage	Wires	Interlock
-	20A 3Ø 480V	3P/4W	HBL420MI7W
P4X5E	30A 3Ø 250V	3P/4W	HBL430MI9W
_	30A 3Ø 480V	3P 4W	HBL430MI7W
	30A 3Ø 600V	3P 4W	HBL430MI5W
PR4X205E	30A 3ØY 277/480V	4P 5W	HBL530MI7W
PR4X205EB	60A 3Ø 250V	3P 4W	HBL460MI9W
	60A 3Ø 480V	3P 4W	HBL460MI7W
P4X155E	60A 3Ø 600V	3P 4W	HBL460MI5W
P4X155EB	60A 3ØY 120/208V	4P 5W	HBL560MI9W
_	100A 3Ø 250V	3P 4W	HBL4100MI9W
-	100A 3Ø 480V	3P 4W	HBL4100MI7W
	100A 3Ø 600V	3P 4W	HBL4100MI5W
_	100A 3ØY 120/208V	4P 5W	HBL5100MI9W

(mechanical interlock) to HBL420P7W (mating plug)

IFC Watertight Pin & Sleeve



For complete listing of Hubbell Products, see our full line catalog.

HUBBEL Wiring Device-Kellems 20

# Safe Maintenance and Repairs

### Lockout, Tagout for Electrical Safety

Lockout/tagout refers to specific procedures to safeguard people from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities. Hubbell offers many products that meet OSHA lockout/tagout regulations including integrated lockout features in pin and sleeve plugs and switched enclosures as well as a variety of dedicated lockout devices.

### PLUGOUT<sup>®</sup> and SWITCHOUT<sup>®</sup> Lockout Devices



- Provides an approved method of complying with OSHA lockout/tagout regulation
- Available in 15A, 20A, 30A and 60A plugout devices enclose the equipment plug and secure with a key padlock

### Locking Switches



- Prevents unauthorized control of lighting or ventilation control
- Keys supplied with each locking switch
- One piece integral grounding terminal provides a low resistance ground path



### PLUGOUT®

Lockout Devic	es	
Description	Typical Devices Accommodated	Catalog No
Small yellow	15 and 20A straight blade	HLDMP
lockout device	plugs;15A Twist-Lock® plugs	
Medium yellow lockout device	15 and 20A, 125V straight blade plugs; 20 and 30A	HLD
	Twist-Lock <sup>®</sup> plugs	
Large yellow	20, 30 and 60A metallic and	HLD2
lockout device	non-metallic Pin and Sleeve;	
	Hubbellock <sup>®</sup> ; 50A Twist-Lock <sup>®</sup>	)
	plugs	

### **SWITCHOUT®**

Yellow Switchout Toggle switch	HSLDPK2*
device	
* Two devices per package	

### Keyed PLUGOUT®

Red keyed	15 and 20A, 125V straight	HKLDR
Plugout; keyed	blade; plugs with holes in	
the same	blades	

### AC Barrel Key Locking Switches

Locking Switches

Replacement key

20 Amp 120-277 Volt	0-0
Description	Catalog Numbers
Single pole	HBL1221RKL
Double pole	HBL1222RKL
Three-Way	HBL1223RKL
Four-Way	HBL1224RKL
Barrel key replacement	HBL1209RKL



15 Amp 120-277 Volt	C(BD)
Description	Catalog Numbers
Single pole	HBL1201L
Double pole	HBL1202L
Three-Way	HBL1203L
Four-Way	HBL1204L
20 Amp 120-277 Volt	
20 Amp 120-277 Volt Description	Catalog Numbers
	Catalog Numbers
Description	¥
Description Single pole	HBL1221L

HBL1209



### NFPA 70E-2004 LO/TO Procedures 29CFR1910.147(a)(3)(i)

This section requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy in order to prevent injury to employees.



NEC<sup>®</sup> is a registered trademark of the National Fire Protection Association (NFPA).



# **Enhanced Safety for Convenience Outlets**





#### NEC<sup>®</sup> 500-503, 505

covers the requirements for electrical installations in locations classified as hazardous due to the materials handled, processed, or stored in those locations.

#### **NEC<sup>®</sup> 516**

covers the regular or frequent application of flammable liquids, and combustible liquids, and combustible powder by spray operations at temperatures above flash points.

#### NFPA 33 Standard for Spraying Applications Using Flammable or Combustible Materials

covers spray application of flammable or combustible materials by a variety of methods. Contains requirements for the maintenance of safe conditions as well as personal safety.

#### NFPA 34 Standard for Dipping, Coating and Printing Processes Using Flammable or **Combustible Liquids**

covers fire and explosive hazards. Includes water-borne and water reducible materials.



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### **Hazardous Location Unfused Disconnect Switches. Mechanical Interlocks and Plugs**

Hubbell's hazardous location unfused disconnect and mechanical interlock switches are ideal for applications with the presence of flammable gases or vapors, or ignitable dusts and fibers. They are also suitable for use in outdoor or indoor damp, wet and dirty locations or in areas where frequent wash-downs, heavy rain or water spray routinely occur. The high visibility handles can be locked to meet OSHA lockout/tagout regulations.

Hubbell hazardous location mechanical interlocks and plugs offer superior safety. The plug and switch are interlocked so that the switch cannot be turned "ON" without the plug fully inserted, and the plug cannot be removed when the switch is in the "ON" position.

Marked as required in NEC 500-503, 505

Class I, Div. 1 & 2, Groups B,C,D Class I, Zones 1 & 2, Groups IIB+ H2, IIA Class II, Div. 1 & 2, Groups E,F,G Class III NEMA 3, 4, 4X, 7(B,C,D), 9(E,F,G)

### **Unfused Disconnect Switches**



- Compact size provides application flexibility and cost savings
- Fewer cover bolts reduces installation and maintenance time
- Removable ductile mounting lugs adjust to irregular mounting surfaces
- UL 98 certified switch

### Unfused Mechanical Interlocks and Plugs



- Plug and switch are interlocked for superior safety UL1686 C1 listed and fully interchangeable
- with other UL1686 C1 devices
- Compact size and footprint for easy placement

12100

• NEMA 4X with receptacle lid turned shut or with plug locking ring tightened

Unfused Disconnect Switches			
Description	30 Amp	60 Amp	100 Amp
Disconnect switch, 3 Pole 600V AC/230V DC	HBLB7NFD13A	HBLB7NFD26A	HBLB7NFD21A
Disconnect switch with auxiliary	HBLB7NFD13AA	HBLB7NFD26AA	HBLB7NFD21AA

Disconnect switch with auxiliary contact, 3 Pole 600V AC/230V DC





#### Unfused Mechanical Interlocks and Plugs

Amp	Poles/Wires	Voltage AC	Receptacle	Plug
	3 Pole, 2 Wire	600V AC	HBLVSQ3023	HBLVP3385
30	4 Pole, 3 Wire	600V AC	HBLVSQ3034	HBLVP3485
~~~	3 Pole, 2 Wire	600V AC	HBLVSQ6023	HBLVP6385
60	4 Pole, 3 Wire	600V AC	HBLVSQ6034	HBLVP6485

Note: HBLVSQ Series 30A models come standard with 1" drilled and tapped conduit openings top and bottom plus two 1" x ¾" reducers and one ¾" close-up plug for maximum flexibility.

60A models come with one 11/2" opening on top and bottom and one 11/2" close-up plug.



# **Protect Devices from Corrosion and Abuse**

### **Specialty Devices**

Some environments can be particularly corrosive for electrical connections, calling for an extra level of safety and protection. Hubbell offers a wide range of plugs, connectors and receptacles that are specifically designed to withstand corrosive environments like chemical plants and wastewater treatment facilities.

### **Corrosion Resistant Plugs, Connectors and Receptacles**



- Reinforced thermoplastic elastomer housing to resist ultraviolet rays, oil and chemicals
- Powerful nylon cord grips on plugs prevents strain on terminals and prevents cord pull-outs
- Plated contacts provide for reliable electrical connections and long life

### Weatherproof Covers

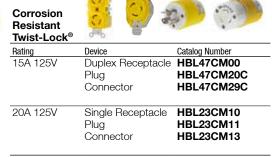


- UL listed for wet locations in both thermoplastic and cast aluminum with cover closed
- Suffix "WO" are listed for wet location with cover open and plug installed
- Available in single and dual receptacles with individual weatherproof covers for each receptacle

Corrosion Resistant Straight Blade						
Rating	Device	Catalog Number				
15A 125V	Duplex Receptacle	HBL52CM62				
	Single Receptacle	HBL52CM61				
	Plug	HBL52CM66C				
	Connector	HBL52CM69C				
20A 125V	Duplex Receptacle	HBL53CM62				
	Single Receptacle	HBL53CM61				
	Plug	HBL53CM66C				
	Connector	HBL53CM69C				

0.0

Duplex Covers Thermoplastic for Vertical Mounting	4	3
Description	Gray	Yellow
For FS/FD box mounting For device mounting		HBL52CM21 HBL52CM22
<b>Duplex Covers</b> Cast Aluminum for Horizontal Mounting	3")	
Description	Catalog Nu	mber
For FS/FD box mounting	HBL5206\	NO
For device mounting	HBL5205\	NO



Receptacle ( Vertical FS/FI			2
Face Diameter			Cast
inches (mm)	Color	Thermoplastic	Aluminum
1.36"-1.39"	Gray	HBL7423WO	HBL7420
(34.5-35.3)	Yellow	HBL74CM23WO	_
1.55" - 1.58"	Gray	HBL7425WOA	HBL7420
(39.4-35.3)	Yellow	HBL74CM25WO	A —
1.68" - 1.72"	Gray	HBL7424WO	HBL3393
(42.7-43.7)	Yellow	HBL74CM24WO	-
Wet Locations:	Chermoplastic	c w/ cover "open"	

ocations: Thermoplastic w/ cover "open" Cast Aluminum w/ cover "closed"



### NEC<sup>®</sup>406.9(B) Receptacles in Wet Locations.

15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. All 15- and 20-ampere, 125- and 250-volt nonlocking receptacles shall be listed weather-resistant type.

Exception: 15- and 20-ampere, 125- through 250-volt receptacles installed in a wet location and subject to routine high-pressure spray washing shall be permitted to have an enclosure that is weatherproof when the attachment plus is removed.



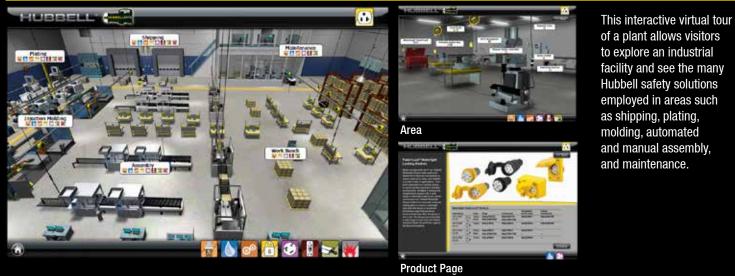
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# **HUBBELL<sup>®</sup> Online Tools**



### Safety eTour



### **Online Literature**

Hubbell offers an extensive literature library for product support. Downloadable PDFs are available online at www.hubbell.com.



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