

**Watertight When Unmated
For Unstoppable Performance**



Appleton™ U-Line™ Interchanger

15 and 20 Amp Plugs

Technology and Application Guide.





Exclusive NEMA Type 4 Watertight 15 and 20 Amp Plugs When Unmated

Ideal for use in hazardous, industrial, and wet locations, the Appleton™ U-Line™ Interchanger 15 and 20 Amp plugs by Emerson™ deliver power to portable and permanent equipment like: lighting systems, power tools, welding equipment, compressors, pumps, motors, and other similar devices.

With a wide range of ratings and certifications — Class I, Division 1 and 2 Groups B, C, D, Class I, Zone I Group IIB + H₂, Class II, Division 1 and 2 Groups F, G, and Class III when mated; plus a unique-to-market NEMA Type 4 watertight certification rating when unmated — this explosionproof and dust-ignitionproof solution is safe and reliable for use in outdoor environments like industrial construction sites, land drilling rigs, petrochemical and refining facilities.

Watertight. Helping to reduce the risks of power outages, and damage to vital equipment, this solution protects against ingress of water, even when the plug is not mated, eliminating the risk of short circuits in receptacles and equipment due to damaged plugs.

Easy to Wire. Dependable in virtually any environment or weather condition, this easy-to-wire solution offers larger easy to access terminals, and standard size combination screws to eliminate the need for special tools.

When you need to power portable and permanent equipment during turnarounds and other demanding maintenance applications, look no further than the ruggedly reliable Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs by Emerson™ — developed to withstand inclement weather and rough usage.

Redesigned for the Unexpected

In hazardous and industrial environments, equipment and plugs are often left outdoors and are subject to wet, damp, and corrosive conditions leaving them subject to dust and water ingress. The Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs address this and other operational issues, for an extremely resourceful and reliable product.



Easy to Wire

With larger, easy to access terminals and standard combination screws on its terminal block and insulator clamp, the Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs are easier and faster to wire.



Exceptional Reliability

A gasket has been added between the plug base and plug housing, and a sealing surface for the gasket on the inside of the plug housing. This design prevents water and dust ingress from entering the plug even when the plug is unmated. No other plug in the market offers this level of protection, assuring that regardless of weather conditions, portable and permanent equipment have a reliable and safe plug for power distribution.

Bringing Reliable Power To Temporary Locations



Every minute counts when a plant is shut down for maintenance and repairs. When time is of the essence — and solutions can't withstand harsh conditions and inclement weather — projects can be delayed, costs add up, and the potential for safety hazards increases. When it comes to supplying temporary power for equipment, you need plugs that are rugged, virtually maintenance free, and built to take abuse.

Designed to protect against water ingress, the Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs by Emerson™ are NEMA Type 4 Watertight rated—whether mated or not. From being dropped in a pile of snow, to being left out in the rain overnight, this solution was engineered to uphold the highest level of safety and reliability. The new plug construction offers an easy wiring feature with larger easy to access terminals and combination screws, making it the optimal choice for streamlining tedious wiring.

For Hard To Reach Areas, Long-Term Dependability Is Crucial



In drilling rig environments, extreme conditions and hazardous areas are the norm. To ensure safe and reliable power of receptacles and lighting fixtures, plugs must be able to withstand rigorous use and constant exposure to extreme weather conditions. In hard to reach locations, where these devices are found, access to power throughout your entire operation is essential to getting the job done promptly and safely without delays. To help reduce unplanned maintenance and downtime, Emerson™ offers the Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs. They are designed with a gasket providing NEMA Type 4 watertight ingress protection and increased product longevity.

Safety in these challenging environments is a top concern. Our plugs are designed for the long-haul and are the optimal choice for permanent or portable lighting equipment used on rig derricks, drilling floors, pumping stations, and other areas that require operator visibility for difficult tasks.

Engineered Versatility for Multiple Applications

The Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs by Emerson™ offer hazardous and industrial industries a safe and ready-to-use inclement weather solution with a NEMA Type 4 watertight rating when unmated, combination screws, easy wiring feature, and a single-piece shell design.

An ideal solution for plant turnarounds, hazardous applications, and a variety of other industrial environments. Typical applications of the Appleton™ U-Line™ Interchanger 15 and 20 Amp Plugs include:

- Any hazardous and industrial setting or equipment that requires portable power solutions for plant turnarounds: e.g. lighting systems, conveyors, heaters, motor-generator sets, power tools, welding equipment, compressors, pumps, and portable power carts.
- Locations where wet, damp, or corrosive conditions are present.
- Class I classified areas such as chemical plants, petrochemical plants, and refineries or any other location where ignitable vapors or gases are present.
- Class II locations such as process industries where there are combustible dusts in the air that are explosive or ignitable from handling products such as flour and grain commonly seen at grain elevators, flour mills, and agricultural plants.
- Any application, location, environment, or solution that requires: Class I, Division 1 and 2, Groups B, C, D ratings, and/or Class I, Zone I, Group IIB + H₂ ratings, and/or Class II, Division 1 and 2, Groups F, G ratings, and/or Class III ratings.
 - Chemical plants
 - Petrochemical facilities
 - Refineries
 - Drilling rigs
 - Grain elevators
 - Feed mills
 - Power plants
 - Water/wastewater treatment plants
 - Pulp and paper facilities
 - Beverage facilities



Chemical/Petrochemical Facilities



Water/Wastewater Facilities



Grain Processing Facilities

U-Line™ Interchanger 15 and 20 Amp Plug Features and Specifications

U-Line™ Interchanger 15 and 20 Amp Plug Features



A twist of the plug produces an audible "click" to indicate fast make and break of built-in switch contacts. Twisting plug locks it in place — cannot be accidentally pulled out.



Special neoprene watertight plug bushing accommodates flexible cord ranging from .538" to .639" in diameter.



Mechanical cable clamp on the plug prevents strain on cables and meets the UL 150 lb strain-relief test for classified locations.

U-Line™ Interchanger 15 and 20 Amp Plug Ordering Information

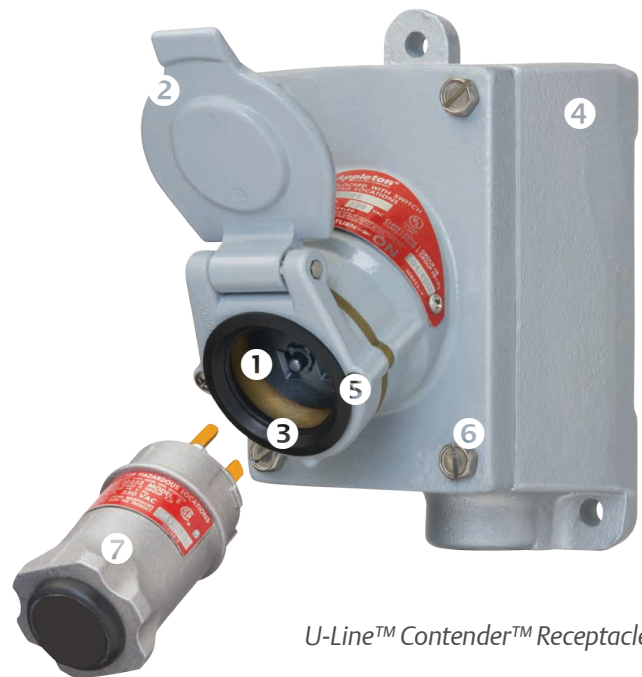
Amp	Wire/Pole	NEMA Plug Configurations			Catalog Number		Dimensions	
		5-15P	5-20P	6-20P	125 Vac	250 Vac		
U-Line™ Interchanger ECP Aluminum Plug								
15	2W, 3P				ECP-1523	—		
20	2W, 3P				ECP-2023	—		
20	2W, 3P				—	ECP-20232		
U-Line™ Interchanger NCP Thermoplastic Polyester Plug								
15	2W, 3P				NCP-1523	—		
20	2W, 3P				NCP-2023	—		
20	2W, 3P				—	NCP-20232		

U-Line™ Receptacle Family

Emerson™ offers an extensive line of Appleton™ receptacles in a variety of different materials, hazardous location ratings, and designs for numerous applications that are ideal for use throughout your facility. Bringing power to portable and permanent electrical devices should not bring hazards along with it. Our product offering is built upon our determination to keep facilities safe while providing equipment the necessary power to build, repair, and maintain operations.

Appleton™ U-Line™ Receptacle Features

















- ❶ Internal receptacle notch rejects standard NEMA plug configurations that could cause arcing in hazardous locations.
 - Receptacle mechanism locks the plug in place after inserting and rotating it so it cannot be withdrawn under load.
- ❷ Spring-loaded cover keeps dust and moisture out of receptacle when plug is not in use. A threaded NEMA 4X screw cover kit option is available for watertight applications.
- ❸ Large neoprene gasket in throat of receptacle "seals" around plug and/or cover for maximum ingress protection.
- ❹ Triple-coat – (1) zinc electroplate, (2) chromate and (3) epoxy powder coat provide NEMA 3RX rating for rough applications.
 - A temperature rating of -25 °C to +55 °C allows our receptacles to be used in the most extreme environments.
- ❺ External hardware is stainless steel to help improve product longevity and reduction in maintenance.
- ❻ Slotted hex-head screws allow easy access for internal wiring.
 - Complete intermateability permits use in retrofit applications. UL Classified for use with Crouse-Hinds Ark • Gard® and PowerGard™ series.
- ❼ Competitor plugs are intermatable with our extensive line of U-Line™ receptacles of like NEMA configurations.



U-Line™ Contender™ Receptacle

*U-Line™ Interchanger ECP
Aluminum Plug*

U-Line™ Receptacle Family at a Glance

	Certifications	Hazardous Location Classifications	Available Materials	GFCI Available
Appleton™ U-Line™ Factory Sealed 20 Amp Receptacles ①				
		Class I, Division 1 and 2, Groups B, C, D Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R, 3RX	Aluminum or Malleable Iron	Yes
Appleton™ U-Line™ 20 Amp Portable Receptacle with GFCI				
		Class I, Division 1 and 2, Groups C, D Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R, 3RX	Aluminum	Standard
Appleton™ U-Line™ 20 Amp ECH/ECHT Panel Mounting Receptacles				
		Class I, Division 1 and 2, Groups B, C, D Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R, 3RX, 4X, 12	Aluminum	No
Appleton™ U-Line™ Contender™ Factory Sealed 20 Amp Receptacles ①				
		Class I, Division 1, Groups C, D Class I, Division 2, Group B Class I, Zone 1, Group IIB Class I, Zone 2, Group IIB + H ₂ Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R, 3RX	Aluminum or Malleable Iron	Yes
Appleton™ U-Line™ N1 Series 20 Amp Receptacles				
		Class I, Division 1, Groups C, D Class I, Division 2, Group B NEMA 3, 3R, 3RX, 4X, 12	Thermoplastic Polyetherimide	No
Appleton™ U-Line™ N2 Factory Sealed 20 Amp Receptacles				
		Class I, Division 2, Groups B, C, D Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R, 3RX, 4X, 12	Thermoplastic Polyetherimide	No
Appleton™ U-Line™ ECS Factory Sealed 15 and 20 Amp Receptacles ①②				
		Class I, Division 1 and 2, Groups B, C, D Class I, Zone 1 and 2, Group IIB + H ₂ T6 Class II, Division 1 and 2, Group G – Coal Dust Class III NEMA Type 3, 4X	Aluminum	Yes
Appleton™ U-Line™ ECCL/ECC Factory Sealed 20 Amp Cable Connectors				
		Class I, Division 1 and 2, Groups B, C, D Class II, Division 1 and 2, Groups F, G Class III NEMA 3, 3R	Aluminum	No

① Select items are suitable for Class I, Group B, C and D; Class II, Groups F, G. See product catalog pages for suitable items.

② Select items are cSAus certified. See product catalog pages for suitable items.

U-Line™ Receptacle Family

Appleton™ U-Line™ Factory Sealed 20 Amp Receptacles



U-Line™ Factory Sealed 20 Amp Receptacles come equipped with a factory sealed switch interior that confines arcing inside the receptacle. The insulators provide superior dielectric and mechanical strength and lowest arc tracking. Energized receptacle contacts are deeply recessed to reduce danger of accidental touching.

- U-Line™ EFSR-K receptacle covers are UL Classified to mount on Killark™ SWB boxes.
- Choice of malleable iron receptacle cover and mounting box or aluminum receptacle cover and mounting box.
- Unique blade-type, brass contacts exert constant pressure along entire contact surface and provide superior electrical contact.

Appleton™ U-Line™ 20 Amp Portable Receptacle with GFCI



Portable Receptacle with GFCI assemblies provide required ground fault protection for portable electrical devices meeting all UL and CSA requirements. There is a convenient carry/hanging handle for increased mobility around your plant, and an LED indicator light to signal when the receptacle is energized.

- Provides earth leakage protection to maximize safety.
- Standard red or green LED pilot lights available; high intensity LED pilot light are rated at 100,000 hours.
- Smooth operating test and reset buttons.
- Heavy duty 0.91 meter (3 foot) SO power cord with U-Line™ 20 Amp NEMA 5-20R plug.

Appleton™ U-Line™ 20 Amp ECH/ECHT Panel Mounting Receptacles



ECH and ECHT Panel Mounting Receptacles feature a dead-front design making them ideal for use with electrical equipment like panelboards and enclosures. The ECHT is designed to be threaded into 1-1/2" NPT (tapered) threads, whereas the ECH is designed to be threaded into 2" NPSM (straight) threads.

- Furnished with steel locknut and neoprene sealing gasket.
- Gasketed construction protects receptacle against moisture and dirt with plug in or out.
- Spring-loaded cover and screw cap included for application flexibility.

Appleton™ U-Line™ Contender™ Factory Sealed 20 Amp Receptacles



Contender™ Factory Sealed 20 Amp Receptacles come equipped with pressure type terminals for ease of wiring and are available in malleable iron and aluminum. The neoprene gasket in the throat of the receptacle seals against the plug or the spring-loaded cover to seal out water, dust and corrosive compounds.

- Covers are UL Listed when used with Contender™ Series mounting boxes and are UL Classified when used with Crouse-Hinds™ EDST™ Series mounting boxes.
- Insulators provide superior dielectric and mechanical strength and lowest arc tracking.
- Dead-front design: receptacle is not energized until plug is fully inserted and switch is engaged.

U-Line™ Receptacle Family

Appleton™ U-Line™ N1 Series 20 Amp Receptacles



U-Line™ N1 Series 20 Amp Receptacles feature a nonmetallic Intraground™ enclosure with a labyrinth-path construction that provides explosionproof protection while withstanding the most extreme environments. An embedded aluminum grounding grid provides a complete grounding system eliminating the need for extra grounding components and wiring.

- Feed-thru or dead-end grounded 1/2" or 3/4" conduit openings for threaded conduit via supplied reducers.
- Excellent resistance to ultraviolet light, water, fungi and mold.
- Explosionproof when sealing fittings (sold separately) are installed at each conduit entrance.
- 5/16" thick thermoplastic enclosure walls provide superior impact resistance.

Appleton™ U-Line™ N2 Factory Sealed 20 Amp Receptacles



U-Line™ N2 Series 20 Amp Receptacles are rated for Class I, Division 2 environments and are factory sealed so no external seals are required. These nonmetallic receptacles stand up to extremely corrosive locations like off shore oil rigs. The silicone gasket, specially designed for the labyrinth-path joint between cover and body, prevents water and dust ingress.

- Excellent resistance to ultraviolet light, water, fungi and mold.
- Special grounding wire provided with each box provides safe grounding when cover is removed for maintenance.
- Nonmetallic Intraground™ enclosure with an embedded aluminum grounding grid eliminates the need for extra grounding components and wiring.
- Labyrinth-path construction assures flame-tight joint between body and cover.

Appleton™ U-Line™ ECS Factory Sealed 15 and 20 Amp Receptacles



ECS Factory Sealed 15 and 20 Amp Receptacles feature a durable cast aluminum housing with a baked gray epoxy powder coat finish for highly corrosive and demanding environments. These receptacles are rated for use in CEC governed locations, and are cCSAus certified to NEC requirements for use in NEC governed locations. The neoprene gasket in the throat of the receptacle seals against the plug or the spring-loaded cover to seal out water, dust and corrosive compounds.

- 3/4" thick flanges provide a large flame path for greater pressure dissipation.
- Complete with feed-thru hubs, close-up plug for dead-end use, adjustable mounting feet, internal ground screw and external stainless steel captive screws.
- Unique blade-type, brass contacts exert constant pressure along entire contact surface and provide superior electrical contact.
- Insulators provide superior dielectric and mechanical strength and lowest arc tracking.

Appleton™ U-Line™ ECCL/ECC Factory Sealed 20 Amp Cable Connectors



ECCL/ECC Factory Sealed 20 Amp Cable Connectors provide an easy way to extend the reach of your power supply to areas where a receptacle is limited in powering portable equipment. A gasket in the throat of the cable connector seals around the plug powering your equipment, protecting against moisture and combustible dusts. When not in use, a spring-loaded cover seals around the connector front providing reliable environmental protection.

- Internal receptacle notch rejects standard NEMA plug configurations.
- Interior switch cylinder has O-rings at each end to seal out moisture and combustible dusts.
- 2 bushings to accommodate different cable sizes.

Supplying power where it is needed.



Appleton™ is the cornerstone brands of Emerson's Electrical Apparatus and Lighting business; trusted worldwide to make electrical installations safer, more productive and more reliable.

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