

TABLE OF CONTENTS

IEC-309-1 and IEC-309-2 Pin and Sleeve Devices

	Introduction	2-5
	Material Specifications	6-7
	North American Ratings (20 to 100 Amp)	8-16
	Accessories	17-18
	International Ratings (16 to 125 Amp)	19-28
	New Products	29-31
	Light & Stage	32-33
	Specialty Products	34-35
	Useful Tables	36-37
	Drawings and Dimensions	38-47


IEC-309-1 and IEC-309-2 Mechanical Interlocks

	Introduction	48-49
	North American Ratings (20 to 100 Amp)	50-55
	International Ratings (16 to 125 Amp)	56-60

Manual Disconnect Switches

	Manual Disconnect Switches	61-69
---	--------------------------------------	-------

Custom-Built Power Distribution Systems

	Custom-Built Power Distribution Systems	70-77
---	---	-------



WORLDWIDE INTERCHANGEABILITY, SAFETY AND RELIABILITY...

WORLDWIDE INTERCHANGEABILITY

Walther's pin & sleeve devices are built to IEC 309-1 and 309-2 specifications and are interchangeable with other manufacturers who conform to these IEC standards and color coding system... anywhere in the world. Manufacturers that do not comply with these standards have their own proprietary configurations and are not plug compatible with other pin & sleeve products. Once you have selected a proprietary configuration you are locked in to a single source. Specifying IEC 309-1 & 309-2 devices provides convenience and flexibility that users have come to accept almost without thinking.

SAFETY

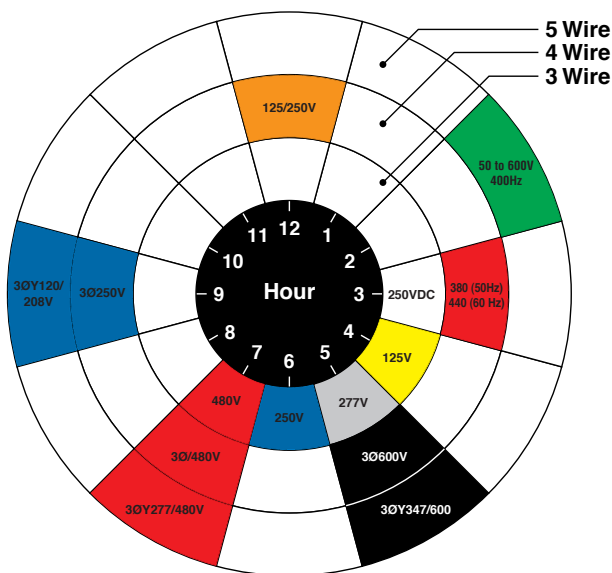
IEC 309-2 configurations for plugs (or inlets) and receptacles (or connectors) are single-rated which assures proper mating of devices with the same voltage and amperage. It is virtually impossible to couple a plug and receptacle of different voltage and /or amperage ratings.

The size of the device is determined by the amperage rating. Plugs and receptacles of different amperage ratings are not compatible because of the size variance.

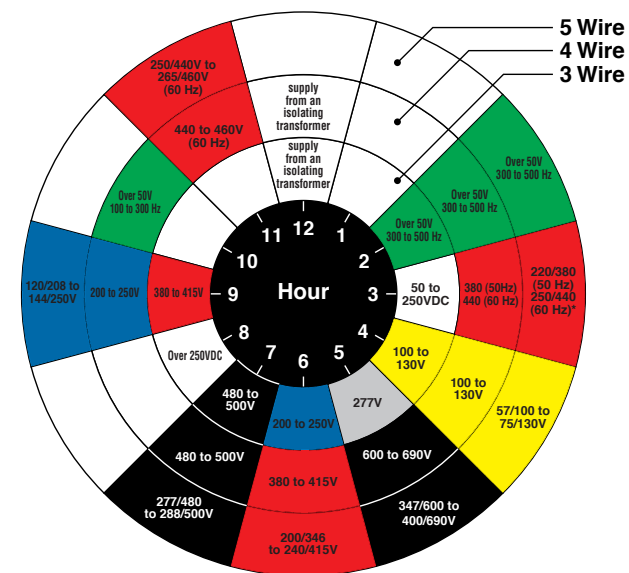
Many proprietary pin & sleeve configurations, that do not conform to the IEC standards, are designed to accommodate multiple voltage systems. A plug wired to a piece of equipment designed to operate at one voltage system could unintentionally be plugged into a receptacle wired with an unlike voltage. Mismatching voltages could cause damage to the equipment or even personal injury and is not considered safe electrical practice.

The voltage, of single rated Pin & Sleeve devices of the IEC 309-2 type, is determined by the location of the oversized female ground contact relative to the key-way located at the bottom of the housing. A clock face is used to represent the location of the ground sleeve for a specific voltage system. For example, a 480 VAC receptacle will have the oversized ground sleeve located in the 7 o'clock position. The corresponding grounding pin location on the plug or inlet is a mirror image of the female device. Devices of mismatched voltage systems simply cannot be mated. Each device is clearly marked with the voltage system for which it is intended to be used. The diagram below shows the keying position and the color coding that is associated with each voltage system.

Walther CEEtyp Female Ground Clockface Positions in Accordance with IEC 309-2 and UL 1686



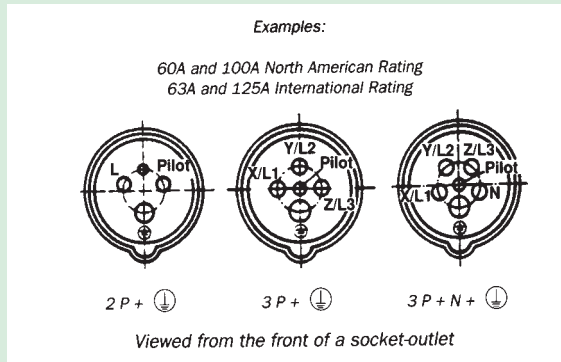
North American Rating
Voltage AC (Except where noted)



International Rating
Voltage AC (Except where noted)

The insulated housing is made from a high impact, nylon material. The nonmetallic device, while abuse and corrosion resistant, is also nonconductive, which enhances the safety of the product.

ELECTRICAL INTERLOCK



Plugs and receptacles rated 60 amps and above, feature an "electrical interlock" by way of a pilot pin on the plug and female sleeve on the receptacle that is shorter than the main pins. The pilot pin and female sleeve make contact last, and break contact first. This sequence turns the power on when the pilot pin and sleeve mate, and turns the power off before the phase contacts are disengaged. This prevents making or breaking the circuit under load.

RELIABILITY

Walther offers the widest variety of plugs, receptacles, connectors and inlets, made of the highest quality and design integrity in both splashproof and watertight versions.

Watertight (IP67) devices are designed for use in the most demanding environments that require safety, ease of use, reliability and durability. These devices can withstand impact and vibration and provide complete protection against dirt, dust, water jets and even temporary flooding. Watertight devices are available in 20, 30, 60 and 100 amp (North American) ratings and 16, 32, 63 and 125 amp (International) ratings.

Splashproof (IP44) devices are suitable and recommended for use in a variety of light industrial environments and provide complete protection against contact with live parts, damaging

deposits of dirt and dust and splashing water. Splashproof devices provide many of the heavy duty construction features found in the watertight products, but at a more economical cost. Splashproof devices are available in 20, 30 and 60 amp (North American) ratings and 16, 32 and 63 amp (International) ratings.

Watertight and splashproof devices provide exceptional UV stability for superior outdoor performance.

All Walther plugs and connectors are supplied with an internal cord clamp designed to firmly grip not only the outer cable jacket but also the internal conductors. The internal cord clamp eliminates strain on the terminals while providing high pull-out values without external protrusions to snag adjacent wiring or the installer.

In addition to the internal cord clamp, Watertight plugs and connectors are also supplied with an external cable gland. This cable gland serves as a secondary method of eliminating strain on the terminals and conductors while assuring watertight performance. Standard splashproof plugs and connectors are also supplied with the same external gland as the watertight devices. However, a cable sleeve, designed to speedup installation, is provided with a lower cost splashproof alternative.

All Walther plugs and connectors, furnished with either a cable gland or cable sleeve, meet the cord and cable secureness requirements defined in UL 1682, Section 33.

IEC 309 PIN AND SLEEVE DEVICES • DEGREES OF PROTECTION

TABLE 1 - CHARACTERISTICS DEFINED BY THE CEI 70-1 - IEC 529 - IEC 144 - UTE C 20-010 - DIN 40050 STANDARDS

First Digit - Protection against persons - touching and ingress of solid foreign objects			Second Digit - Protection against the penetration of liquids								
			IP_0	IP_1	IP_2	IP_3	IP_4	IP_5	IP_6	IP_7	IP_8
Non protected											
IP 0_		Without protection	IP 00								
IP 1_		Protection against touching with the hand and solid objects greater than 50mm dia.	IP 10	IP 11	IP 12						
IP 2_		Protection against touching with the finger and solid objects greater than 12mm dia.	IP 20	IP 21	IP 22	IP 23					
IP 3_		Protection against touching with tools, wires, etc. more than 2.5mm thick and solid objects greater than 2.5mm dia.	IP 30	IP 31	IP 32	IP 33	IP 34				
IP 4_		Protection against touching with tools, wires, etc. more than 1mm thick and solid objects greater than 1mm dia.	IP 40	IP 41	IP 42	IP 43	IP 44				
IP 5_		Unlimited protection against contact with live parts and damaging deposits of dust	IP 50				IP 54	IP 55			
IP 6_		Unlimited protection against contact with live parts and any penetration of dust	IP 60					IP 65	IP 66	IP 67	IP 68

In some countries a third digit (for mechanical security) is added.

TABLE 2

Designation	Intended Use and Description	Construction Requirements
3	Outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust and damage from external ice formation.	Splashproof (IP44)
4	Indoor and outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.	Watertight (IP67)
4X	Indoor and outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.	Watertight (IP67)
6	Indoor and outdoor use primarily to provide a degree of protection against hose-directed water, and the entry of water during occasional temporary submersion at a limited depth and damage from external ice formation.	Watertight (IP67)
12, 12K	Indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.	Splashproof (IP44)

This information is provided only as a general guide. No specific recommendation is intended. As each application may vary, testing should be conducted by the user in the intended environment.

IEC 309 PIN AND SLEEVE DEVICES

