

# COMMERCIAL CLASS L

## MIL-DTL-22992-STYLE

**Amphenol**  
Aerospace

PDS-235-3



### WALL MOUNT RECEPTACLE (POWER SOURCE)



### STRAIGHT PLUG



### CABLE CONNECTING RECEPTACLE WITHOUT COUPLING RING



### OVERVIEW

The Amphenol Class “L” heavy duty connectors are now available in a commercial version with new finishes. The Class L meets the demands for heavy duty & heavy power connectors that are critical for rugged environmental conditions.

### DESIGN FEATURES OF AMPHENOL CLASS L CONNECTORS:

- **New Finish (Alternate to Cadmium) - Durmalon is RoHS compliant and provides protection against 500 hours dynamic salt spray.**
- Greatest Capacity - Current ranges 40 to 200 amps, conductor sizes 6 to 4/0.
- Safety - Complete protection of personnel and equipment if connectors are inadvertently disconnected under load.
- Foolproof Mating - Design incorporates voltage, current, frequency, phase and grounding requirements
- Standardization - MIL-DTL-22992 Class L insert arrangements specify connector/cable combinations for maximum reliability.
- Serviceable Contacts - Contacts are normally crimped to the cable before connector assembly. No insertion tools required. Bushings are available to adapt smaller diameter wires to larger contacts.
- Arc Quenching Design - Recessed socket contacts within the insert create an arc suppressing chamber which protects the user when connectors are separated under load.
- Programmed Coupling Sequence - Grounding and neutral contacts engage before power contacts.
- Waterproof Design - A unique combination of grommets and seals provides waterproofing in any condition - mated or un-mated, capped or uncapped.
- Rugged Construction - Machined from high strength aluminum. Straight-line attachment of accessories eliminates possibility of cable twisting or misalignment. Never Die-cast.
- Accessories - Supplied with all Class L connectors as indicated on the individual connector descriptions. Replacement accessories may be ordered separately. Caps purchased separately.

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| Condition                                         | Configuration     | Description                                                                                                      | Reference                                   |
|---------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Thermal Shock                                     | Unmated           | Five complete on hour temperature cycles of -55°C to +125°C                                                      | MIL-STD-1344, method 1003, test condition A |
| Moisture Resistance<br>(Cable mounted connectors) | Mated             | Ten complete 24 hour cycles of +25°C to +65°C temperature at 90% to 98% humidity                                 | MIL-STD-202, method 106                     |
| Durability                                        | Mated             | 500 complete mating/unmating cycles                                                                              | MIL-DTL-22992                               |
| Salt Spray (Corrosion)                            | Unmated           | 48 hour exposure to atomized 5% saline solution at +35°C<br>500 hours for Durmalon plating                       | MIL-STD-1344, method 1001                   |
| Vibration                                         | Mated             | 10 to 55 Hz, .06 inch total excursion in 1 minute cycles for 6 hours,<br>55 to 2000 Hz, 10G peak amplitude sweep | MIL-STD-1344, method 2005                   |
| High Impact                                       | Mated             | Nine hammer blows from 1, 3 and 5 feet, three each in three axes<br>on mounting panel                            | MIL-STD-202, method 207                     |
| Heat Rise (Class L only)                          | Mated             | Maximum rated DC current for four hours at +25°C in still air                                                    | MIL-DTL-22992                               |
| Fluid Immersion                                   | Unmated           | 20 hours immersion in hydraulic fluid and lubricating oil                                                        | MIL-DTL-22992                               |
| Water Immersion                                   | Mated and Unmated | 4 hours immersion at 1 atmosphere pressure differential                                                          | MIL-DTL-22992                               |



### DURMALON FINISH

#### DURMALON™ - AMPHENOL'S ANSWER TO EU RoHS/ELV/CADMIUM FREE RESTRICTIONS

Commercial, industrial & military markets are rapidly moving away from restricted materials such as Cadmium (Cd) & Hexavalent Chromium (Cr(VI)). Both of these restricted materials are toxic and known carcinogens. Durmalon, like Olive-Drab Cadmium plating (Class W), meets 500 hours of dynamic salt spray, combined with 500 mating cycles and meets specified millivolt drop shell-to-shell conductivity. Durmalon has been proven to meet this requirement as well as Potassium Formate-Deicer fluid testing performed by Boeing.

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| 1.                 | 2.           | 3.         | 4.                                   | 5.                 | 6.           | 7.                        |
|--------------------|--------------|------------|--------------------------------------|--------------------|--------------|---------------------------|
| Commercial Number* | Shell Finish | Shell Size | Alternate Master Key/Keyway Position | Insert Arrangement | Contact Type | Alternate Insert Rotation |
| <b>CL90555</b>     | <b>C</b>     | <b>32</b>  | <b>X</b>                             | <b>13</b>          | <b>S</b>     | <b>Y</b>                  |

\*Commercial Numbers are supplied less protection caps and strain reliefs which can be added separately.

### 1. SELECT A COMMERCIAL NUMBER

|                |                                                    |
|----------------|----------------------------------------------------|
| <b>CL90555</b> | Wall Mount Receptacle (Power Source)               |
| <b>CL90556</b> | Straight Plug                                      |
| <b>CL90557</b> | Cable Connecting Receptacle without Coupling Ring  |
| <b>CL90558</b> | Wall Mount Plug with Coupling Ring (Equipment End) |

### 2. SELECT A SHELL FINISH\*

|          |                                           |
|----------|-------------------------------------------|
| <b>C</b> | **Conductive for AC circuits              |
| <b>N</b> | ***Non-conductive for DC circuits         |
| <b>D</b> | Durmalon: Nickel PTFE 500 hrs. salt spray |

\*Contact Amphenol for Black Zinc Nickel Availability

\*\*Grounding Assemblies: Finish C

\*\*\*Non-grounding Assemblies: Finish N

| Shell Master Key/Keyway Position |                     |               |          |             |             |             |             |             |
|----------------------------------|---------------------|---------------|----------|-------------|-------------|-------------|-------------|-------------|
| Shell Size                       | Current Rating Amps | 60Hz & 400 Hz |          |             |             |             |             |             |
|                                  |                     | 1 Phase       |          |             | 3 Phase     |             |             |             |
|                                  |                     | 2 Wire        |          | 3 Wire      | 3 Wire      | 4 Wire      |             |             |
|                                  |                     | 120 VAC       | 240 VAC  | 120/240 VAC | 450/480 VAC | 120/208 VAC | 240/416 VAC | 277/480 VAC |
| 28                               | 40                  | 4 (120°)      | 5 (135°) | 4 (120°)    | —           | 4 (120°)    | 5 (135°)    | 6 (150°)    |
| 32                               | 60                  | 4 (120°)      | 5 (135°) | 4 (120°)    | —           | 4 (120°)    | 5 (135°)    | 6 (150°)    |
| 44                               | 100                 | 4 (120°)      | —        | 4 (120°)    | 1 (60°)     | 4 (120°)    | 5 (135°)    | 6 (150°)    |
| 52                               | 200                 | —             | —        | 4 (120°)    | —           | 4 (120°)    | 5 (135°)    | 6 (150°)    |

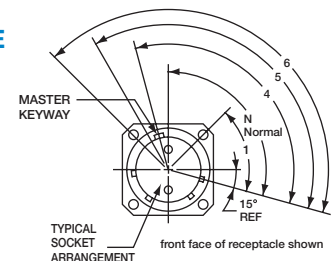
| Shell Master Key/Keyway Position |                     |                  |
|----------------------------------|---------------------|------------------|
| Shell Size                       | Current Rating Amps | DC 2 Wire 28 VDC |
| 28                               | 40                  | N (105°)         |
| 32                               | 60                  | N (105°)         |
| 44                               | 100                 | N (105°)         |
| 52                               | 200                 | N (105°)         |

### 3. SELECT A SHELL SIZE (RELATED DIRECTLY TO CURRENT CARRYING CAPABILITY)

|           |             |
|-----------|-------------|
| <b>28</b> | 40 amperes  |
| <b>32</b> | 60 amperes  |
| <b>44</b> | 100 amperes |
| <b>52</b> | 200 amperes |

### 4. SELECT AN ALTERNATE MASTER KEY/KEYWAY POSITION (IF NEEDED)

N designates normal position. Positions 1, 4, 5 and 6 of the master key/keyway prevent cross-mating of incompatible voltages.



Note that insert arrangement does not rotate with master key/keyway

### 5. SELECT AN INSERT ARRANGEMENT

Contact Amphenol or visit [www.amphenol-aerospace.com](http://www.amphenol-aerospace.com) for available insert arrangements for Class L connectors. Insert arrangements are determined by connector size (current carrying capability) and cable configuration to be accommodated.

### 6. SELECT A CONTACT TYPE

|          |                 |
|----------|-----------------|
| <b>P</b> | Pin Contacts    |
| <b>S</b> | Socket Contacts |

CL90555 and CL90557 are supplied with socket contacts only. CL90556 and CL90558 are supplied with pin contacts only.

### 7. SELECT AN ALTERNATE INSERT ROTATION IF NEEDED

Used to prevent cross-mating of incompatible frequencies. Absence of a letter in this space indicates Normal (0°) position of the insert.

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