

# Amphenol Commercial Class L

## MIL-DTL-22992

The Amphenol Class "L" heavy duty connectors are now available in a **lower cost** commercial version. 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 provide:

- **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 unmated, capped or uncapped.
- **Rugged Construction** - Machined from high strength aluminum. Straight-line attachment of accessories eliminates possibility of cable twisting or misalignment.
- **Accessories** - Supplied with all Class L connectors as indicated on the individual connector descriptions. Replacement accessories may be ordered separately.

| 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 (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                                                      | MIL-STD-1344, method 1001                   |
| Vibration                                      | Mated             | 10 to 55 Hz, .06 inch total excursion in 1 minute cycles for 6 hours, 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 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                               |

Wall Mount Receptacle  
(power source)



Straight Plug



Cable Connecting Receptacle without Coupling Ring



Wall Mount Plug with Coupling Ring (equipment end)



Contact Catalin Brandas for more information at [cbrandas@amphenol-aao.com](mailto:cbrandas@amphenol-aao.com) or call 607-563-5129

## Easy Steps to build a part number... Commercial Class L Series

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 |
|-------------------|--------------|------------|--------------------------------------|--------------------|--------------|---------------------------|
| CL90555*          | C            | 32         | 4                                    | 12                 | S            | Y                         |

## Step 1. Select a Commercial Number

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

## Step 2. Select a Shell Finish

|   | Designates                     |
|---|--------------------------------|
| C | Conductive for AC circuits     |
| N | Non-conductive for DC circuits |

## Grounding Assemblies: Finish C

| Shell Size | Current Rating Amps | Shell Master Key/Keyway Position |          |             |             |             |             |             |
|------------|---------------------|----------------------------------|----------|-------------|-------------|-------------|-------------|-------------|
|            |                     | 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°)    |

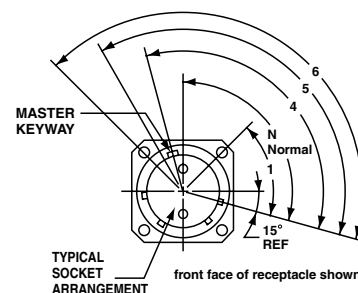
## Non-grounding Assemblies: Finish N

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

## Step 3. Select a Shell Size - (related directly to current carrying capability)

|    | Designates Current Carrying Capability |
|----|----------------------------------------|
| 28 | 40 amperes                             |
| 32 | 60 amperes                             |
| 44 | 100 amperes                            |
| 52 | 200 amperes                            |

Step 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

Step 5. Select an Insert Arrangement  
Contact Amphenol or see catalog 12-C Edition 4 Circular Interconnects for available insert arrangements for Class L connectors. Insert arrangements are determined by connector size (current carrying capability) and cable configuration to be accommodated.

## Step 6. Select a Contact Type

|   | Designates      |
|---|-----------------|
| P | Pin Contacts    |
| S | Socket Contacts |

MS90555/CL90555 and MS90557/CL90557 are supplied with socket contacts only. MS90556 /CL90556 and MS90558/CL90558 are supplied with pin contacts only.

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

Step 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. See catalog 12-C Edition 4 Circular Interconnects refer to page 466.

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