

# REFERENCE GUIDE

## LEMO's CONCENTRIC CONTACTS IDENTIFICATION GUIDE ●

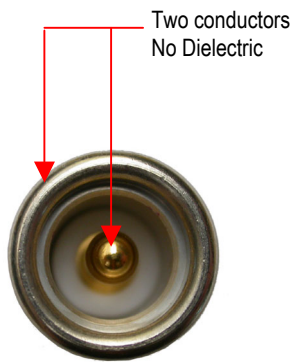


**INTRODUCTION**

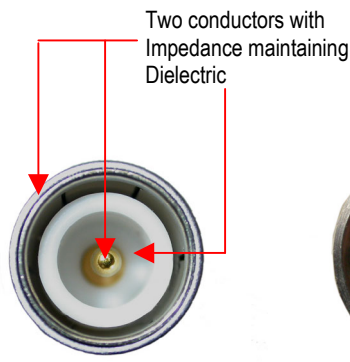
This guide is intended to assist with the identification of the various LEMO concentric contact types (single center pin) when the specific part number is not known.

**PROCEDURE**

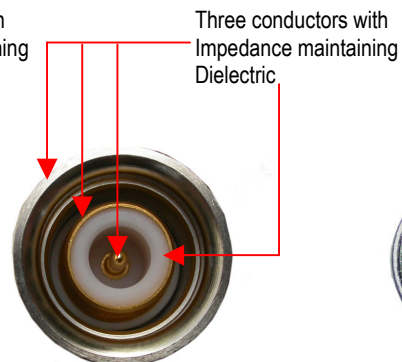
Use these visual images to assist in determining the different types of concentric electrical contact connectors.



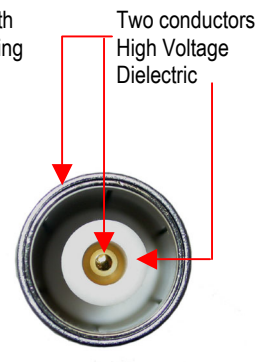
**Single Contact Plug**  
Type Code - 1XX



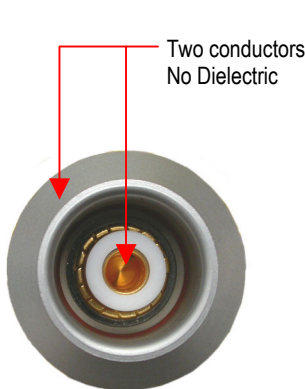
**Coaxial Plug**  
Type Code - 2XX



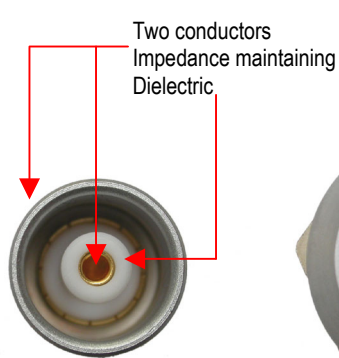
**Triaxial Plug**  
Type Code - 6XX



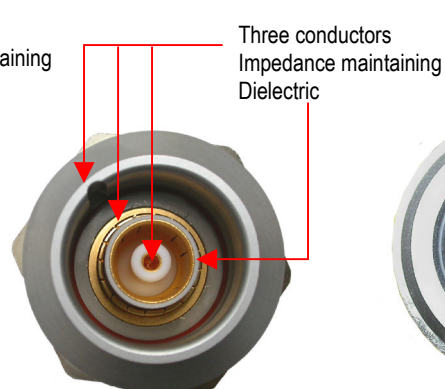
**High Voltage Plug**  
Type Code - 4XX



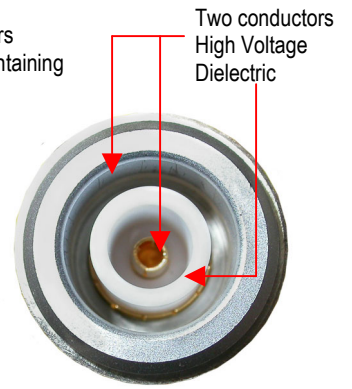
**Single Contact Receptacle**  
Type Code - 1XX



**Coaxial Receptacle**  
Type Code - 2XX



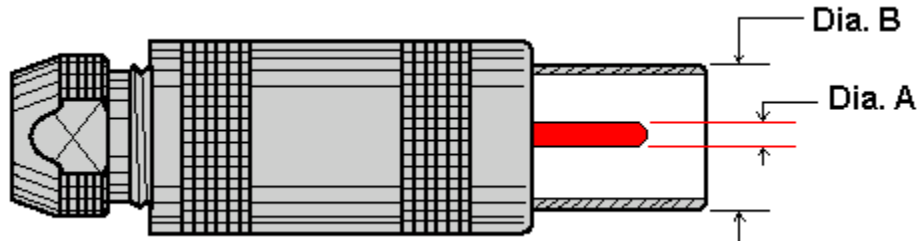
**Triaxial Receptacle**  
Type Code - 6XX



**High Voltage Receptacle**  
Type Code - 4XX

**Single Contact** (also referred to as 'Unipole')

If a single contact type has been determined from the images on page 2, the next step is to determine the connector size. Use Table 1 to determine the contact size and shell size.



| Ø A - mm (in.) | Type Code | Ø B - mm (in.) | Shell Size |
|----------------|-----------|----------------|------------|
| 1.3 (0.051)    | 113       | 5 (0.197)      | 00         |
| 1.6 (0.063)    | 116       | 7 (0.276)      | 0S         |
| 2.0 (0.079)    | 120       | 9 (0.354)      | 1S         |
| 3.0 (0.118)    | 130       | 9 (0.354)      | 1S         |
| 3.0 (0.118)    | 130       | 12 (0.472)     | 2S         |
| 4.0 (0.157)    | 140       | 12 (0.472)     | 2S         |
| 4.0 (0.157)    | 140       | 15 (0.591)     | 3S         |
| 6.0 (0.236)    | 160       | 15 (0.591)     | 3S         |
| 4.0 (0.157)    | 140       | 20 (0.787)     | 4S         |
| 6.0 (0.236)    | 160       | 20 (0.787)     | 4S         |
| 12 (0.472)     | 112       | 30 (1.181)     | 5S         |

Table 1

### Coaxial Contact

If a coaxial contact type has been determined from the images on page 2, the next step is to determine the impedance. This can be determined from the coaxial cable attached to the current plug, or from the manual of the instrument with the LEMO receptacle. The choices are 50-ohm impedance or 75-ohm impedance. If these methods are not available, measurement of the center pin will assist with identification. (Caution: This can be difficult since the pin is recessed down in the nose of the plug.)

| Impedance | Type Code | Center Pin - Ø mm (in) | Plug Nose - Ø mm (in) | Shell Size |
|-----------|-----------|------------------------|-----------------------|------------|
| 50 ohm    | 250       | 0.9 (0.035)            | 7 (0.276)             | 0S         |
| 50 ohm    | 250       | 1.6 (0.063)            | 9 (0.354)             | 1S         |
| 75 ohm    | 275       | 1.3 (0.051)            | 9 (0.354)             | 1S         |
| 50 ohm    | 250       | 2.0 (0.079)            | 12 (0.472)            | 2S         |
| 75 ohm    | 275       | 1.6 (0.063)            | 12 (0.472)            | 2S         |
| 50 ohm    | 250       | 3.0 (0.118)            | 15 (0.591)            | 3S         |
| 75 ohm    | 275       | 2.0 (0.079)            | 15 (0.591)            | 3S         |
| 50 ohm    | 250       | 4.0 (0.157)            | 20 (0.787)            | 4S         |
| 75 ohm    | 275       | 3.0 (0.118)            | 20 (0.787)            | 4S         |
| 50 ohm    | 250       | 5.0 (0.197)            | 30 (1.181)            | 5S         |
| 75 ohm    | 275       | 4.0 (0.157)            | 30 (1.181)            | 5S         |

Table 2

### Triax Contact

If a triaxial contact type has been determined from the images on page 2, the next step is to determine the impedance. This can be determined from the triaxial cable attached to the current plug or from the manual of the instrument with the LEMO receptacle. The choices are 50-ohm impedance or 75-ohm impedance. If these methods are not available, measurement of the center pin may assist with identification. (Caution: This can be difficult since the pin is recessed down in the nose of the plug.)

| Impedance | Type Code | Center Pin - Ø mm (in) | Plug Nose - Ø mm (in) | Shell Size |
|-----------|-----------|------------------------|-----------------------|------------|
| 50 ohm    | 650       | 0.9 (0.035)            | 7 (0.276)             | 0S         |
| 50 ohm    | 650       | 0.9 (0.035)            | 9 (0.354)             | 1S         |
| 50 ohm    | 650       | 1.6 (0.063)            | 12 (0.472)            | 2S         |
| 75 ohm    | 675       | 0.9 (0.035)            | 12 (0.472)            | 2S         |
| 50 ohm    | 650       | 2.0 (0.079)            | 15 (0.591)            | 3S         |
| 75 ohm    | 675       | 0.9 (0.035)            | 15 (0.591)            | 3S         |
| 50 ohm    | 650       | 3.0 (0.118)            | 20 (0.787)            | 4S         |
| 75 ohm    | 675       | 2.0 (0.079)            | 20 (0.787)            | 4S         |

Table 3

## High Voltage Contact

If a high voltage contact has been determined from the sample images, the next step is to confirm the operating voltage of the associated piece of equipment. The manual for the piece of equipment should indicate the operating voltage. LEMO high voltage receptacles typically have digit(s) marked on the shell of the receptacle to indicate the kilovolt rating. For safety reasons, determining the operating voltage is very important. Measurement of the center contact is a partial method for contact identification. (See Table 4.)

| Operating Voltage kV rms | Type Code | Center Pin<br>Ø mm (in) | Plug Nose<br>Ø mm (in) | Shell Size |
|--------------------------|-----------|-------------------------|------------------------|------------|
| 2.8                      | 403       | 0.9 (0.035)             | 7 (0.276)              | 0S         |
| 5.0                      | 405       | 1.3 (0.051)             | 9 (0.354)              | 1S         |
| 5.5                      | 408       | 2.0 (0.079)             | 12 (0.472)             | 2S         |
| 5.0                      | 405       | 4.0 (0.157)             | 15 (0.591)             | 3S         |
| 7.0                      | 410       | 2.0 (0.079)             | 15 (0.591)             | 3S         |
| 10.0                     | 415       | 1.3 (0.051)             | 15 (0.591)             | 3S         |
| 7.0                      | 410       | 2.5 (0.098)             | 20 (0.787)             | 4S         |

Table 4

Please note there are several other specialized high voltage connectors outside of the S Series high voltage connectors.

The information determined through this guide can be very helpful in determining a replacement or mating LEMO connector.



635 Park Court, Rohnert Park, CA 94928  
P.O. Box 2408, Rohnert Park, CA 94928-2408  
(800) 444-5366 • (707) 578-8811 • fax (707) 578-0869

[www.LemoUSA.com](http://www.LemoUSA.com) • email: [info@lemousa.com](mailto:info@lemousa.com)

---

Notice: The information contained in this document is subject to change without notice. LEMO makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. LEMO shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Reproduction, adaptation or translation of this document is prohibited without prior written permission of LEMO.