

INCH-POUND

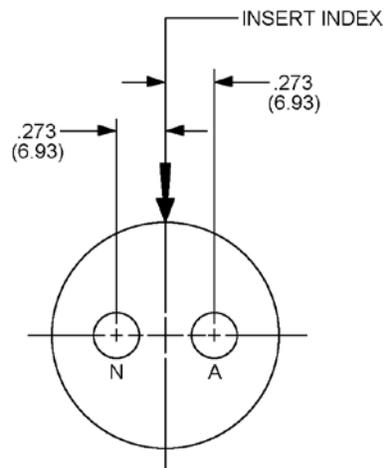
MS14054F  
8 May 2013  
SUPERSEDING  
MS14054E  
26 October 2005

### DETAIL SPECIFICATION SHEET

#### INSERT ARRANGEMENTS, ELECTRICAL CONNECTOR, SIZE 28, CLASS L, 40 AMPS

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall  
consist of this specification sheet and MIL-DTL-22992.



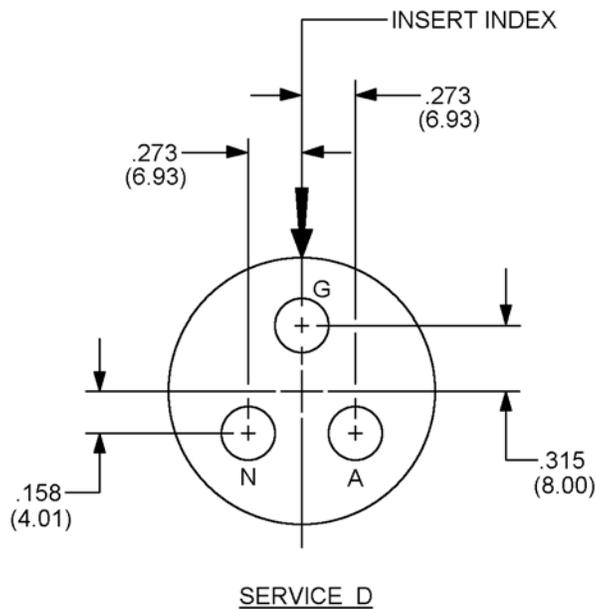
Quantity	Contact	Size	Socket SAE-AS39029/49 M39029-	Pin SAE-AS39029/48 M39029-
1	A	6	329	317
1	N	6N	329 (see note 6)	318

#### NOTES:

1. Dimensions are in inches. Metric equivalents are given for information only. Unless otherwise specified, tolerance is  $\pm .002$  (.05 mm).
2. Unless otherwise specified, front face of pin insert pattern is shown. Socket inserts are the reverse.
3. -02-Cable IPCEA 2-NO 8 conductor round type W.
4. -03-Cable-C0-02-HDF (2/6) 0930 in accordance with MIL-DTL-3432.
5. Mark 28-02 on 28-03 insert. Trademark and 28-( ) shall appear in available space. Contact identifying letter shall be located so as to identify relative contact.
6. Only the pin contact is lengthened and has the N (neutral) designation. The mating socket contact is the same as the power contact.

FIGURE 1. 28 volt DC two wire, -02 and -03 insert arrangements, service D.

MS14054F



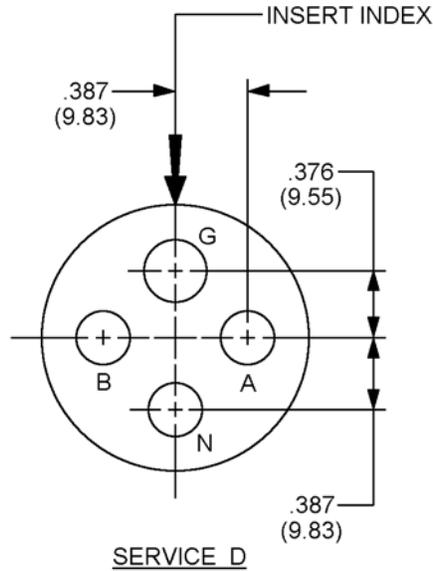
Quantity	Contact	Size	Socket SAE-AS39029/49 M39029-	Pin SAE-AS39029/48 M39029-
1	A	6	329	317
1	G, N	6N	329 (see note 6)	318

NOTES:

1. Dimensions are in inches. Metric equivalents are given for information only. Unless otherwise specified, tolerance is  $\pm .002$  (.05 mm).
2. Unless otherwise specified, front face of pin insert pattern is shown. Socket inserts are the reverse.
3. -04-Cable IPCEA 2-NO 8 conductor round type G.
4. -05-Cable-C0-02-HDF (2/6-2/10R) 0930 in accordance with MIL-DTL-3432.
5. Mark 28-04 on 28-05 insert. Trademark and 28-( ) shall appear in available space. Contact identifying letter shall be located so as to identify relative contact.
6. Only the pin contact is lengthened and has the N (neutral) designation. The mating socket contact is the same as the power contact.

FIGURE 2. AC single phase two wire grounding, -04 and -05 insert arrangements, service D.

MS14054F



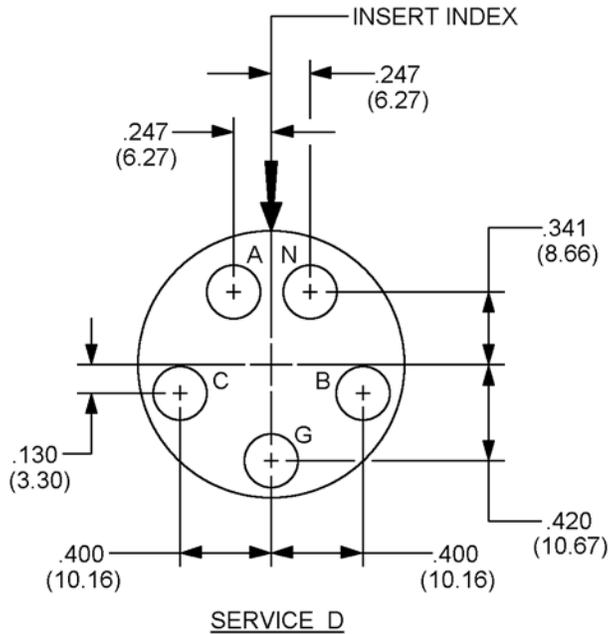
Quantity	Contact	Size	Socket SAE-AS39029/49 M39029-	Pin SAE-AS39029/48 M39029-
2	A, B	6	329	317
1	N	6N	329 (see note 6)	318
1	G	4N	331 (see note 6)	321

NOTES:

1. Dimensions are in inches. Metric equivalents are given for information only. Unless otherwise specified, tolerance is  $\pm .002$  (.05 mm).
2. Unless otherwise specified, front face of pin insert pattern is shown. Socket inserts are the reverse.
3. -06-Cable IPCEA 3-NO 8 conductor round type G.
4. -07-Cable-C0-03-HDF (3/6-3/10R) 1000 in accordance with MIL-DTL-3432.
5. Mark 28-06 on 28-07 insert. Trademark and 28-( ) shall appear in available space. Contact identifying letter shall be located so as to identify relative contact.
6. Only the pin contact is lengthened and has the N (neutral) designation. The mating socket contact is the same as the power contact.

FIGURE 3. AC single phase three wire grounding, -06 and -07 insert arrangements, service D.

MS14054F



Quantity	Contact	Size	Socket SAE-AS39029/49 M39029-	Pin SAE-AS39029/48 M39029-
3	A, B, C	6	329	317
2	N, G	6N	329 (see note 6)	318

NOTES:

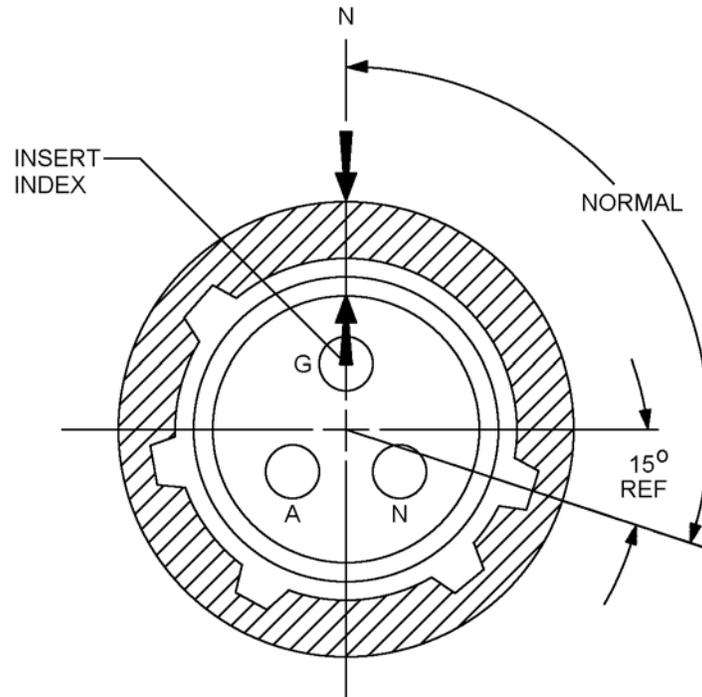
1. Dimensions are in inches. Metric equivalents are given for information only. Unless otherwise specified, tolerance is  $\pm .002$  (.05 mm).
2. Unless otherwise specified, front face of pin insert pattern is shown. Socket inserts are the reverse.
3. -12-Cable IPCEA 4-NO 8 conductor round type G.
4. -13-Cable-C0-04-HDF (4/6-4/12R) 1090 in accordance with MIL-DTL-3432.
5. Mark 28-12 on 28-13 insert. Trademark and 28-( ) shall appear in available space. Contact identifying letter shall be located so as to identify relative contact.
6. Only the pin contact is lengthened and has the N (neutral) designation. The mating socket contact is the same as the power contact.

FIGURE 4. AC three phase four wire grounding, -12 and -13 insert arrangements, service D.

Insert rotation (degrees from normal)				
Arrangement number	Normal DC or 60 Hz (see figures 6 through 9)	Alternate (see figures 6 through 9) 400 Hz		
		W	X	Y
28 – 04 28 – 05	0°	---	---	180°
28 – 06 28 – 07	0°	---	---	---
28 – 12 28 – 13	0°	---	---	180°
28 – 03 28 – 02	0°	---	---	---

FIGURE 5. Insert arrangements and rotations.

MS14054F

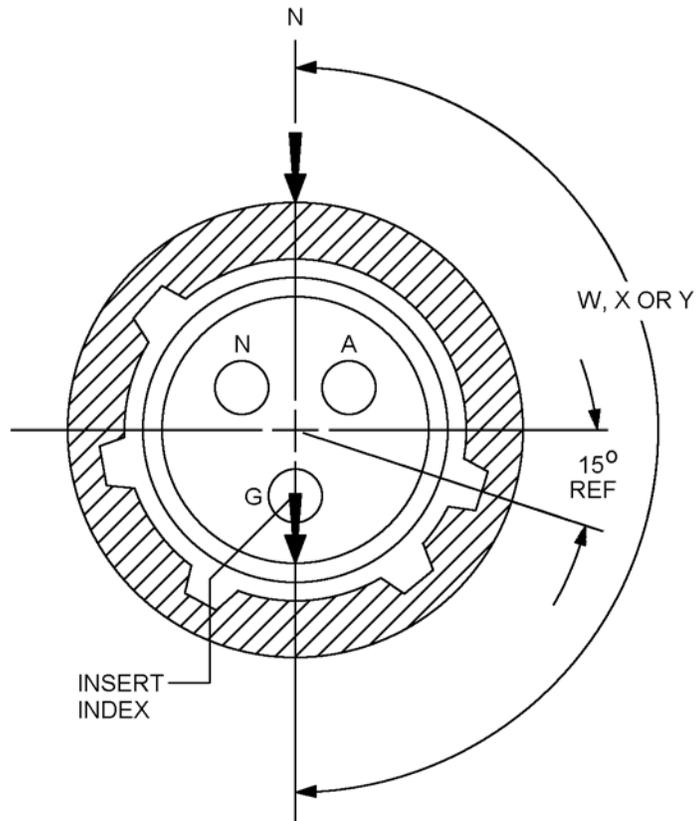


NOTES:

1. For use with connectors under MS90555 and MS90557 utilizing socket contacts and normal keying.
2. Front face of socket insert shown.

FIGURE 6. Socket contact pattern and polarization, insert in normal position (60 Hz power only).

MS14054F

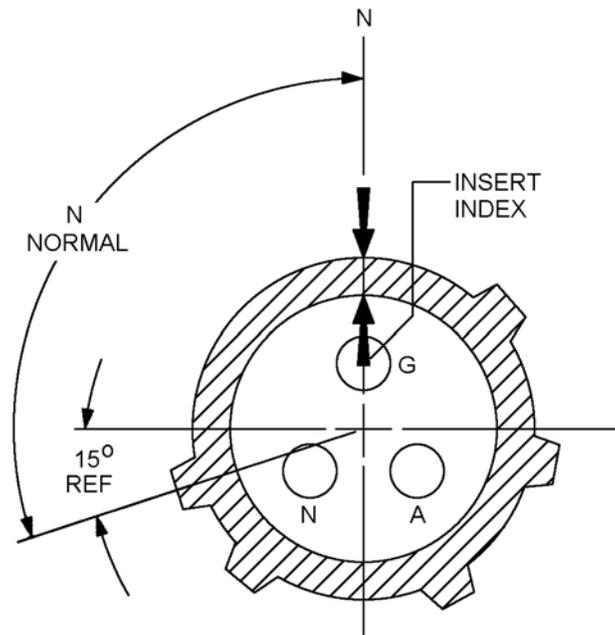


NOTES:

1. For use with connectors under MS90555 and MS90557 utilizing socket contacts and alternate (Y) keying.
2. Front face of socket insert shown.

FIGURE 7. Socket contact pattern and polarization, insert in alternate position (400 Hz power only).

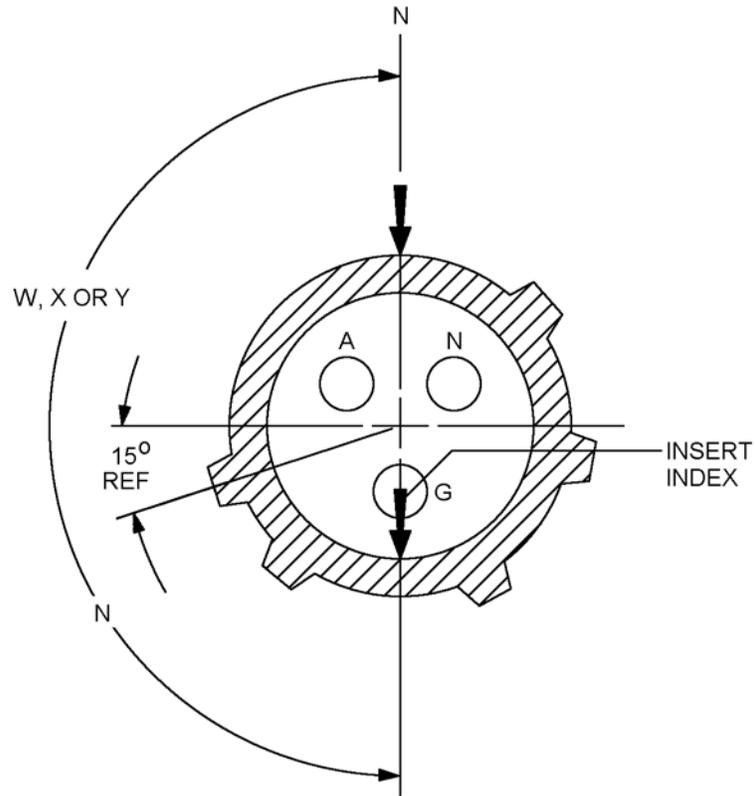
MS14054F



NOTES:

1. For use with connectors under MS90556 and MS90558 utilizing pin contacts and normal keying.
2. Front face of pin insert shown.

FIGURE 8. Socket contact pattern and polarization, insert in normal position (60 Hz power only).



NOTES:

1. For use with connectors under MS90556 and MS90558 utilizing pin contacts and alternate (Y) keying.
2. Front face of pin insert shown.

FIGURE 9. Socket contact pattern and polarization, insert in alternate position (400 Hz power only).

MS14054F

REQUIREMENTS:

Design and construction, see figures 1 through 9 and table I.

Neutral pin (N) is not connected to shell.

Grounding pin (G) is connected to shell.

Applicable SAE-AS39029/112 crimp bushings shall be supplied with the contacts for insert arrangements as specified.

TABLE I. Accessories.

Insert arrangement	Contacts		Cable conductors MS90556 and MS90557 <sup>1/</sup>		Contact bushings required (in accordance with SAE-AS39029/112)	
	Quantity	Size	Quantity	Size	Quantity	PIN MS3348-
28 – 02	2	6	2	B	2	6-BL
28 – 04	2	6	2	8	2	6-8L
	1	6	2	10(G)	-	-
28 – 06	3	6	3	8	3	6-8L
	1	4	3	12(G)	1	4-8L
28 – 07	3	6	3	7	-	-
	1	4	3	10(G)	1	4-6L
28 – 12	4	6	4	8	4	6-8L
	1	6	4	12G	-	-

<sup>1/</sup> (G) designates grounding.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-DTL-22992, this document references the following:

- MIL-DTL-3432
- MS90555
- MS90556
- MS90557
- MS90558
- SAE-AS39029/48
- SAE-AS39029/49
- SAE-AS39029/112

MS14054F

CONCLUDING MATERIAL

Custodians:

Army – CR  
Navy - EC  
Air Force – 85  
DLA – CC

Preparing activity:

DLA – CC

Review activities:

Army – AT, AV, CR4, MI  
Navy – AS, CG, MC, OS, YD  
Air Force – 19, 99

(Project 5935–2013-093)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.