

## STAMPED AND FORMED CONTACTS, PG 1 of 2

Click on [blue underlined part numbers](#) to be taken to their spec sheets.

### OPTIONS

**PART NUMBER:** [AT62-14-01XX](#)  
**DESCRIPTION:** CONTACT, SOCKET, STAMPED, SIZE 16

**MATERIAL:**  
 CONTACT BODY: COPPER ALLOY  
 HOOD: STAINLESS STEEL  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-00, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)



**PART NUMBER:** [AT62-16-01XX](#)  
**DESCRIPTION:** CONTACT, SOCKET, STAMPED, SIZE 16

**MATERIAL:**  
 CONTACT BODY: COPPER ALLOY  
 HOOD: STAINLESS STEEL  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-00, ATT-16-01, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)



**PART NUMBER:** [AT62-16-06XX](#)  
**DESCRIPTION:** CONTACT, SOCKET, STAMPED, SIZE 16

**MATERIAL:**  
 CONTACT BODY: COPPER ALLOY  
 HOOD: STAINLESS STEEL  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-01, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)



**PART NUMBER:** [AT60-14-01XX](#)  
**DESCRIPTION:** CONTACT, PIN, STAMPED, SIZE 16

**MATERIAL:** COPPER ALLOY  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-00, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)

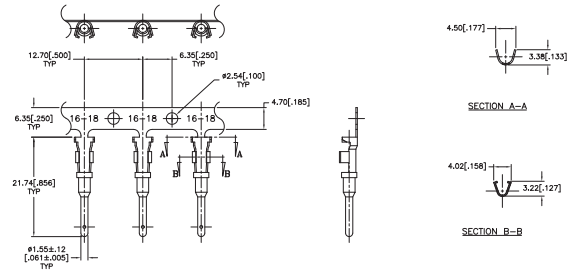


## STAMPED AND FORMED CONTACTS, PG 2 of 2

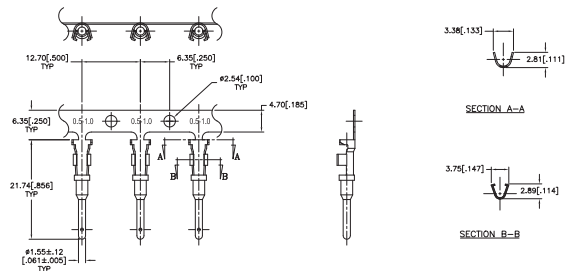
Click on [blue underlined part numbers](#) to be taken to their spec sheets.

### OPTIONS

**PART NUMBER:** [AT60-16-01XX](#)  
**DESCRIPTION:** CONTACT, PIN, STAMPED, SIZE 16  
**MATERIAL:** COPPER ALLOY  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-00, ATT-16-01, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)



**PART NUMBER:** [AT60-16-06XX](#)  
**DESCRIPTION:** CONTACT, PIN, STAMPED, SIZE 16  
**MATERIAL:** COPPER ALLOY  
**PLATING SUFFIX CODE:**  
 XX=22 NICKEL PLATING  
 XX=44 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** ATT-16-01, MFX-3950 & MFX-3953  
**CRIMPER SPECIFICATIONS:** S2-15223 & S2-15224  
**CRIMP INFORMATION DRAWING:** S2-15221 & S2-15222  
**CONTACTS PER REEL:** APPROX. 4000 (PARTIAL REELS AVAILABLE)



## SOLID/MACHINED CONTACTS

Click on [blue underlined part numbers](#) to be taken to their spec sheets.

### OPTIONS

MILITARY-STYLE

**PART NUMBER:** [AT60-202-16XX](#)  
**DESCRIPTION:** CONTACT, PIN, SOLID MACHINED, SIZE 16  
**MATERIAL:** COPPER ALLOY  
**PLATING SUFFIX CODE:**  
 XX=141 NICKEL PLATING  
 XX=31 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** CA-5D12 & CA-5E12  
**CRIMPER SPECIFICATIONS:** S2-15219 & S2-15220  
**CRIMP INFORMATION DRAWING:** S2-15218

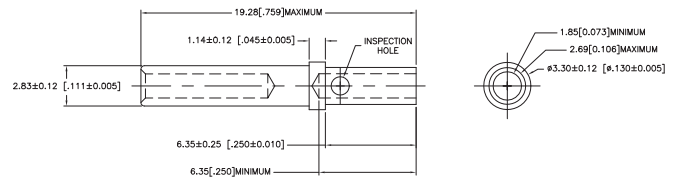


**PART NUMBER:** [AT62-201-16XX](#)  
**DESCRIPTION:** CONTACT, SOCKET, SOLID MACHINED, SIZE 16  
**MATERIAL:**  
 CONTACT BODY: COPPER ALLOY  
 HOOD: STAINLESS STEEL  
**PLATING SUFFIX CODE:**  
 XX=141 NICKEL PLATING  
 XX=31 GOLD PLATING  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** CA-5D12 & CA-5E12  
**CRIMPER SPECIFICATIONS:** S2-15219 & S2-15220  
**CRIMP INFORMATION DRAWING:** S2-15218



ROCKSOLID™ CONTACTS

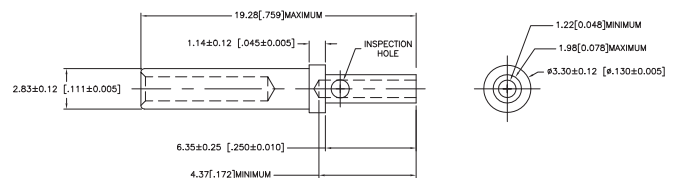
**PART NUMBER:** [65-54942-14](#)  
**DESCRIPTION:** CONTACT, SOCKET, ROCKSOLID, SIZE 16  
**AWG RANGE:** 14AWG  
**MATERIAL:** COPPER ALLOY  
**PLATING:** GOLD  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** CA-5D12 & CA-5E12  
**CRIMPER SPECIFICATIONS:** S2-15219 & S2-15220  
**CRIMP INFORMATION DRAWING:** S2-15218



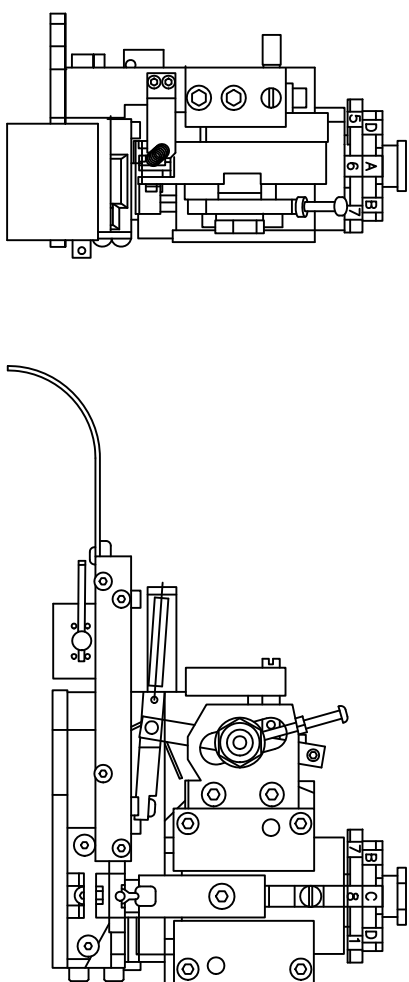
**PART NUMBER:** [65-54942-16](#)  
**DESCRIPTION:** CONTACT, SOCKET, ROCKSOLID, SIZE 16  
**AWG RANGE:** 16AWG  
**MATERIAL:** COPPER ALLOY  
**PLATING:** GOLD  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** CA-5D12 & CA-5E12  
**CRIMPER SPECIFICATIONS:** S2-15219 & S2-15220  
**CRIMP INFORMATION DRAWING:** S2-15218



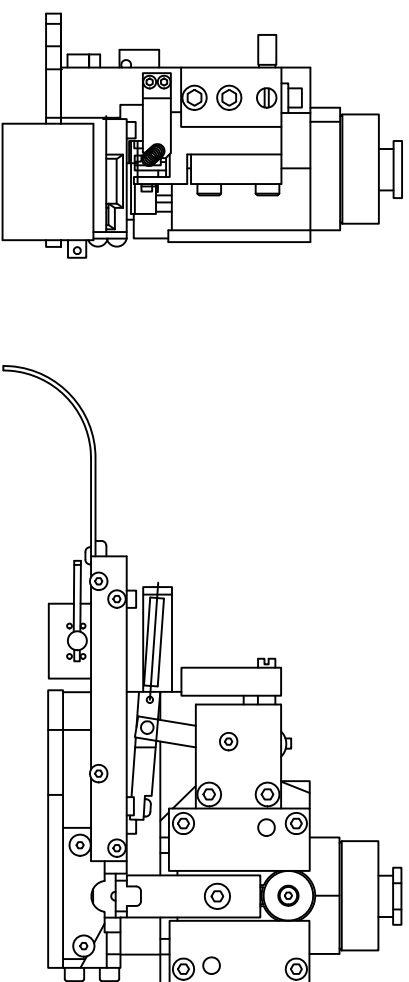
**PART NUMBER:** [65-54942-20](#)  
**DESCRIPTION:** CONTACT, SOCKET, ROCKSOLID, SIZE 16  
**AWG RANGE:** 20AWG  
**MATERIAL:** COPPER ALLOY  
**PLATING:** GOLD  
**CONTACT GENERAL DATA SPECIFICATION:** S2-15217  
**AVAILABLE CRIMPERS:** CA-5D12 & CA-5E12  
**CRIMPER SPECIFICATIONS:** S2-15219 & S2-15220  
**CRIMP INFORMATION DRAWING:** S2-15218



| REVISIONS |      |     | DATE                  | BY      | APPR   |
|-----------|------|-----|-----------------------|---------|--------|
| REV       | ZONE | ECO | DESCRIPTION           | B.D.B.  | M.R.F. |
| A1        | -    | -   | RELEASE NUMBER 016571 | 6/12/08 |        |



|                     |                               |
|---------------------|-------------------------------|
| SINE PART NUMBER    | MFX-3950                      |
| DEUTSCH PART NUMBER | DCT16-02-00                   |
| TYCO PART NUMBER    | 1-3-1385344-1, 2, 3, 4, 5 & 7 |



|                     |               |
|---------------------|---------------|
| SINE PART NUMBER    | MFX-3953      |
| DEUTSCH PART NUMBER | DCT1620-02-00 |

ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

ALL REFERENCES TO TYCO PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO TYCO ELECTRONICS.

|                                      |             |             |            |
|--------------------------------------|-------------|-------------|------------|
| QUANTITY                             | PART NUMBER | DESCRIPTION | ITEM       |
| MATERIALS LIST                       |             |             |            |
| UNLESS OTHERWISE SPECIFIED           |             |             |            |
| 1) All dimensions are in inches.     |             |             |            |
| 2) Pl. DEC 30.00 1 Precision 31/64   |             |             |            |
| 3) Pl. DEC 30.00 1 Angles 31/4       |             |             |            |
| 4) Fabrication Standards Per:        |             |             |            |
| a) MIL-STD-20020                     |             |             |            |
| b) MIL-STD-20020                     |             |             |            |
| c) MIL-STD-20020                     |             |             |            |
| d) MIL-STD-20020                     |             |             |            |
| APPROVAL SIGNATURES                  |             |             |            |
| DATE                                 | SIGNATURES  | DATE        | SIGNATURES |
| 6/9/09                               | BERNIM      | 6/9/09      | BERNIM     |
| 6/9/09                               | BERNIM      | 6/9/09      | BERNIM     |
| 6/9/09                               | BERNIM      | 6/9/09      | BERNIM     |
| 6/9/09                               | BERNIM      | 6/9/09      | BERNIM     |
| CUSTOMER: CRIMPER INFORMATION        |             |             |            |
| MFX-3950 & MFX-3953                  |             |             |            |
| A Subsidiary of Amphenol Corporation |             |             |            |
| 44724 Mowley Drive                   |             |             |            |
| Clinton Township, MI 48036           |             |             |            |
| SCALE: NONE                          |             |             |            |
| SIZE: 1/2" x 1/2" x 1/2"             |             |             |            |
| C 10K44                              |             |             |            |
| S2-15224                             |             |             |            |
| SHEET 1 OF 1                         |             |             |            |

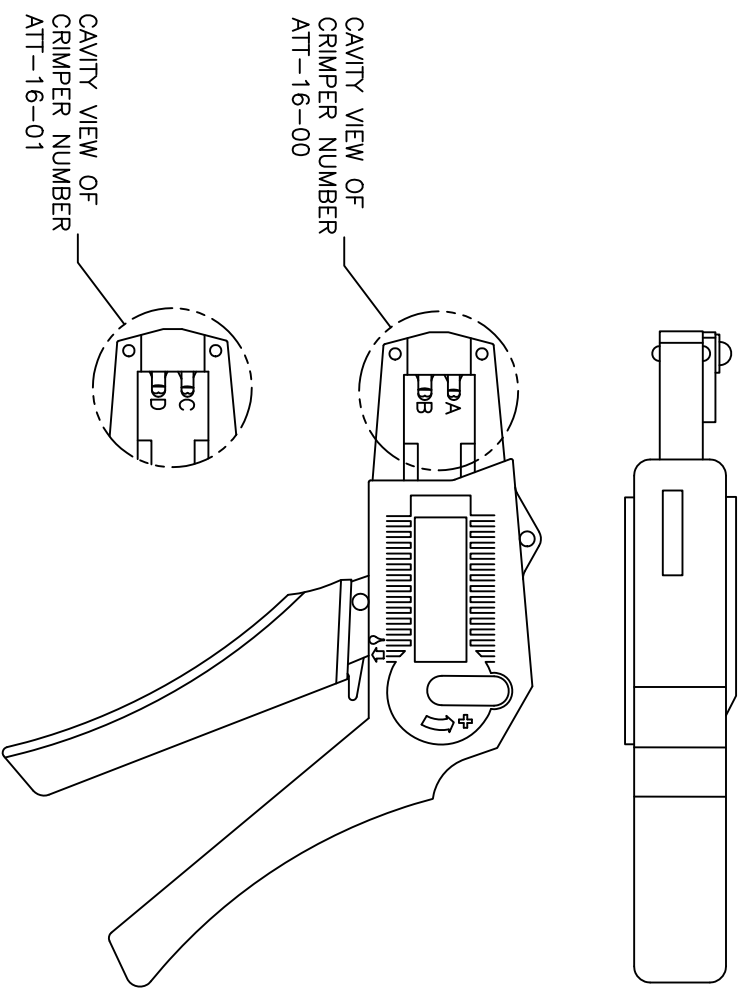
| REVISIONS |     |                       |         |        |        |
|-----------|-----|-----------------------|---------|--------|--------|
| REV       | ECO | DESCRIPTION           | DATE    | BY     | APPR   |
| A1        | -   | RELEASE NUMBER 016571 | 6/12/09 | B.D.B. | M.R.F. |

USE CRIMPER NUMBER:  
ATT-16-00 WITH CAVITY A & B

| CONTACT P/N: | INSULATION $\phi$ | CAVITY | WIRE SIZE          |
|--------------|-------------------|--------|--------------------|
| AT60-16-01** | .075 - .140       | B      | 1.5mm <sup>2</sup> |
| AT62-16-01** | [1.91 - 3.56]     | A      | 16AWG              |
|              |                   | A      | 1.0mm <sup>2</sup> |
| AT60-14-01** | .095 - .150       | B      | 14AWG              |
| AT62-14-01** | [2.41 - 3.81]     | B      | 2.0mm <sup>2</sup> |
|              |                   | B      | 1.5mm <sup>2</sup> |
|              |                   | A      | 1.5mm <sup>2</sup> |
|              |                   | A      | 16AWG              |
|              |                   | A      | 1.0mm <sup>2</sup> |
| AT60-16-06** | .055 - .100       | A      | 16AWG              |
| AT62-16-06** | [1.40 - 2.54]     | A      | 1.0mm <sup>2</sup> |

USE CRIMPER NUMBER:  
ATT-16-01 WITH CAVITY C & D

| CONTACT P/N: | INSULATION $\phi$ | CAVITY | WIRE SIZE          |
|--------------|-------------------|--------|--------------------|
| AT60-16-01** | .075 - .140       | D      | 18AWG              |
| AT62-16-01** | [1.91 - 3.56]     | D      | .75mm <sup>2</sup> |
| AT60-16-06** | .055 - .100       | D      | 18AWG              |
| AT62-16-06** | [1.40 - 2.54]     | D      | .75mm <sup>2</sup> |
|              |                   | C      | .50mm <sup>2</sup> |



ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

- NOTES (UNLESS OTHERWISE SPECIFIED):
- ALL DIMENSIONS IN INCHES [MILLIMETERS]
  - FOR PLATING CODES \*\* SEE CONTACT DATA DRAWINGS.
  - THIS TOOL IS FOR CRIMPING SIZE 16 CONTACTS ONLY TO WIRES LISTED IN THE CHARTS.
  - DEUTSCH IPD CROSS REFERENCE PART NUMBERS ARE DTT-16-00 AND DTT-16-01.

| QUANTITY | PART NUMBER | DESCRIPTION                          | ITEM     |
|----------|-------------|--------------------------------------|----------|
|          |             | <b>MATERIALS LIST</b>                |          |
|          |             | <b>SINE Systems Corporation</b>      |          |
|          |             | A Subsidiary of Amphenol Corporation |          |
|          |             | 44724 Morley Drive                   |          |
|          |             | Clifton Township, NJ 08036           |          |
|          |             | INSTRUCTIONS: ATT-16-00 & 01         |          |
|          |             | CRIMPER, HAND, STAMPED CONTACTS      |          |
|          |             | SIZE: FCSD NO/DWG NO:                | REVISION |
|          |             | B 16K44                              | A1       |
|          |             | SCALE: NONE                          |          |
|          |             | S2-15223                             |          |
|          |             | SHEET 1 OF 1                         |          |

| UNLESS OTHERWISE SPECIFIED       | SIGNATURES       | DATE   |
|----------------------------------|------------------|--------|
| 1) All dimensions are in inches. | DRAWN: BERNUJ    | 6/8/09 |
| 2) Tolerances are as follows:    | CHECKED: FORCE   | 6/8/09 |
| 3) 1/16 DEC .0006                | ENGINEER: BERNUJ |        |
| 3) 1/32 DEC .0003                | APPROVAL: BERNUJ | 6/8/09 |
| 4) Hole Reference = A            | CUSTOMER:        |        |
| MINIMUM SPECIFICATIONS:          |                  |        |
| M/A                              |                  |        |
| PROCESS SPECIFICATIONS:          |                  |        |
| NOT ASY:                         |                  |        |

| REV | ZONE | ECO | DESCRIPTION           | DATE    | BY     | APP    |
|-----|------|-----|-----------------------|---------|--------|--------|
| A1  | -    | -   | RELEASE NUMBER 016871 | 6/12/09 | B.D.B. | M.F.F. |

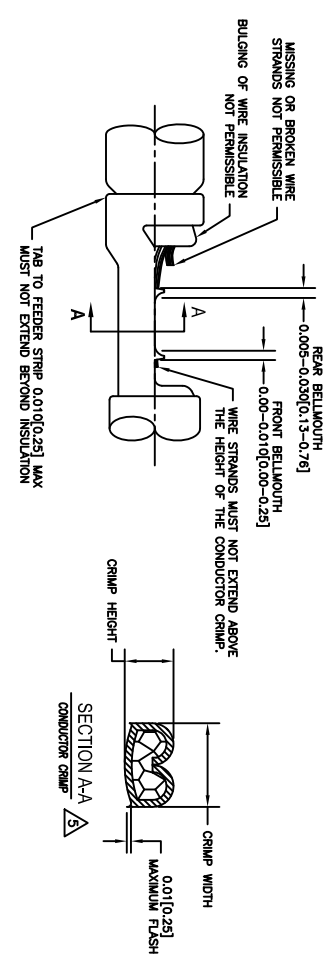
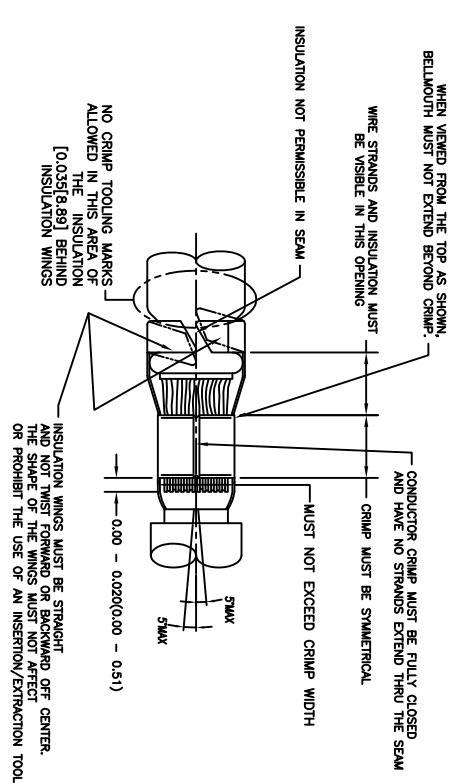
| STAMPED CONTACT PART NUMBER 106=PIN 106=SOCKET                          | SIZE | CONDUCTOR WIRE SIZE  | CRIMP HEIGHT   | CRIMP WIDTH            | CONDUCTOR PUNCH NUMBER | CONDUCTOR ANVIL NUMBER | CRIMP TENSILE REFERENCE |
|---|------|--|--|------------------------|------------------------|------------------------|-------------------------|
| A780-14-011x<br>A782-14-011x<br>INSULATION RANGE 0.095-0.150(2.41-3.81) | 16   | 14 AWG<br>2.00mm <sup>2</sup><br>1.50mm <sup>2</sup><br>16 AWG<br>1.00mm <sup>2</sup><br>18 AWG<br>0.75mm <sup>2</sup> | 0.055(1.40)<br>0.055(1.40)<br>0.055(1.39)<br>0.059(1.27)<br>0.049(1.24)<br>0.049(1.22) | ±0.003 INCH [±0.08 mm] | ATT17-002-0200         | ATT17-101-0200         | 28(111)                 |
| A780-16-011x<br>A782-16-011x<br>INSULATION RANGE 0.075-0.140(1.91-3.56) | 16   | 16 AWG<br>1.00mm <sup>2</sup><br>18 AWG<br>0.75mm <sup>2</sup>   | 0.059(1.27)<br>0.051(1.29)<br>0.050(1.27)<br>0.049(1.24)                               | ±0.003 INCH [±0.08 mm] | ATT17-003-0200         | ATT17-103-0200         | 28(111)                 |
| A780-16-066x<br>A782-16-066x<br>INSULATION RANGE 0.055-0.100(1.40-2.54) | 16   | 16 AWG<br>1.00mm <sup>2</sup><br>18 AWG<br>0.75mm <sup>2</sup><br>20 AWG<br>0.50mm <sup>2</sup>                        | 0.050(1.27)<br>0.049(1.24)<br>0.049(1.22)<br>0.049(1.22)<br>0.045(1.14)                | ±0.003 INCH [±0.08 mm] | ATT17-003-0200         | ATT17-103-0200         | 28(111)                 |

**CROSS REFERENCE**

| SINE PART NUMBER | DEUTSCH PART NUMBER |
|------------------|---------------------|
| MX-3950          | DC116-02-00         |
| ATT17-002-0200   | 1017-002-0200       |
| ATT17-003-0200   | 1017-003-0200       |
| ATT17-101-0200   | 1017-101-0200       |
| ATT17-103-0200   | 1017-103-0200       |
| ATT17-210-0200   | 1017-210-0200       |
| ATT17-211-0200   | 1017-211-0200       |
| ATT17-213-0200   | 1017-213-0200       |
| ATT17-214-0200   | 1017-214-0200       |
| ATT17-217-0200   | 1017-217-0200       |
| ATT17-218-0200   | 1017-218-0200       |
| ATT17-310-0200   | 1017-310-0200       |
| ATT17-311-0200   | 1017-311-0200       |
| ATT17-313-0200   | 1017-313-0200       |
| ATT17-304-0200   | 1017-304-0200       |
| ATT17-317-0200   | 1017-317-0200       |
| ATT17-318-0200   | 1017-318-0200       |

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN INCHES(mm).
2. FORCES ARE IN POUNDS(LBS) AND NEWTONS(N).
3. "X"= PLATING SUFFIX. SEE INDIVIDUAL CONTACT DRAWING.
4. WIRE STRIP LENGTH: 0.175±0.029(4.45±0.74). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE.
5. USE A BLADE MICROMETER (0.100(2.54) MIN SPACING AND 0.060(0.010(1.50)(0.040) ANVIL) TO MEASURE THE CONDUCTOR CRIMP. SEE SECTION AA.
6. CRIMP TENSILE STRENGTH IS DETERMINED AT A PULL RATE SPEED OF 1.00 INCH(25.4) PER MINUTE. INSULATION WINGS ARE REMOVED FOR TEST. ACTUAL CRIMP TENSILE STRENGTH DEPENDS ON WIRE/CONDUCTOR SIZE. VALUES ON THIS SPECIFICATION ARE FOR REFERENCE ONLY.
7. INSULATION DIAMETER RANGE IS DETERMINED BY CONNECTOR AND ITS WIRE SEAL SIZE. SEE CONNECTOR DRAWING FOR INSULATION RANGE.
8. INSULATION CRIMP DIAMETER SHOULD BE THE EQUAL OR LESS THAN THE DIAMETER OF THE WIRE INSULATION (HARD OR TEFION INSULATION MAY BE AN EXCEPTION). INSULATION CRIMP SHALL NOT AFFECT REMOVAL TOOL PERFORMANCE AND SHALL NOT DAMAGE CONNECTOR BROWNIE SEAL.
9. CONDUCTOR TYPE ARE PER SAE J1128(AWG) AND ISO 6722(METRIC)
10. FOR CONTACT MATERIAL AND PERFORMANCE DATA, SEE DRAWING S2-15217.
11. REFER TO S2-15223 AND S2-15224 AND CROSS REFERENCE CHARTS FOR CRIMP TOOL DATA.



A

B

C

D

| QUANTITY  | PART NUMBER | MATERIALS LIST | DESCRIPTION | ITEM |
|---|-------------|----------------|-------------|------|
| 1   |             |                |             |      |
| <p>UNLESS OTHERWISE SPECIFIED</p> <p>1) All dimensions are in inches.</p> <p>2) Plating: 5000 Ang</p> <p>3) Plating: 5000 Ang</p> <p>4) Plating: 5000 Ang</p> <p>5) Reduction Standard Per: AMS 2431</p> <p>6) Heat: S2-20020</p> <p>7) Material Specification: A</p> <p>8) Material Specification: A</p> <p>9) Material Specification: A</p> <p>10) Material Specification: A</p> <p>11) Material Specification: A</p> <p>12) Material Specification: A</p> <p>13) Material Specification: A</p> <p>14) Material Specification: A</p> <p>15) Material Specification: A</p> <p>16) Material Specification: A</p> <p>17) Material Specification: A</p> <p>18) Material Specification: A</p> <p>19) Material Specification: A</p> <p>20) Material Specification: A</p> <p>21) Material Specification: A</p> <p>22) Material Specification: A</p> <p>23) Material Specification: A</p> <p>24) Material Specification: A</p> <p>25) Material Specification: A</p> <p>26) Material Specification: A</p> <p>27) Material Specification: A</p> <p>28) Material Specification: A</p> <p>29) Material Specification: A</p> <p>30) Material Specification: A</p> <p>31) Material Specification: A</p> <p>32) Material Specification: A</p> <p>33) Material Specification: A</p> <p>34) Material Specification: A</p> <p>35) Material Specification: A</p> <p>36) Material Specification: A</p> <p>37) Material Specification: A</p> <p>38) Material Specification: A</p> <p>39) Material Specification: A</p> <p>40) Material Specification: A</p> <p>41) Material Specification: A</p> <p>42) Material Specification: A</p> <p>43) Material Specification: A</p> <p>44) Material Specification: A</p> <p>45) Material Specification: A</p> <p>46) Material Specification: A</p> <p>47) Material Specification: A</p> <p>48) Material Specification: A</p> <p>49) Material Specification: A</p> <p>50) Material Specification: A</p> <p>51) Material Specification: A</p> <p>52) Material Specification: A</p> <p>53) Material Specification: A</p> <p>54) Material Specification: A</p> <p>55) Material Specification: A</p> <p>56) Material Specification: A</p> <p>57) Material Specification: A</p> <p>58) Material Specification: A</p> <p>59) Material Specification: A</p> <p>60) Material Specification: A</p> <p>61) Material Specification: A</p> <p>62) Material Specification: A</p> <p>63) Material Specification: A</p> <p>64) Material Specification: A</p> <p>65) Material Specification: A</p> <p>66) Material Specification: A</p> <p>67) Material Specification: A</p> <p>68) Material Specification: A</p> <p>69) Material Specification: A</p> <p>70) Material Specification: A</p> <p>71) Material Specification: A</p> <p>72) Material Specification: A</p> <p>73) Material Specification: A</p> <p>74) Material Specification: A</p> <p>75) Material Specification: A</p> <p>76) Material Specification: A</p> <p>77) Material Specification: A</p> <p>78) Material Specification: A</p> <p>79) Material Specification: A</p> <p>80) Material Specification: A</p> <p>81) Material Specification: A</p> <p>82) Material Specification: A</p> <p>83) Material Specification: A</p> <p>84) Material Specification: A</p> <p>85) Material Specification: A</p> <p>86) Material Specification: A</p> <p>87) Material Specification: A</p> <p>88) Material Specification: A</p> <p>89) Material Specification: A</p> <p>90) Material Specification: A</p> <p>91) Material Specification: A</p> <p>92) Material Specification: A</p> <p>93) Material Specification: A</p> <p>94) Material Specification: A</p> <p>95) Material Specification: A</p> <p>96) Material Specification: A</p> <p>97) Material Specification: A</p> <p>98) Material Specification: A</p> <p>99) Material Specification: A</p> <p>100) Material Specification: A</p> |             |                |             |      |

ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

**CRIMP DATA, STAMPED CONTACTS FOR CRIMPER MFX-3950**

INSULATION RANGE: 0.055-0.100(1.40-2.54)

CONDUCTOR CRIMP: 0.010(0.25) MAXIMUM FLASH

CRIMP WIDTH: 0.010(0.25)

CRIMP HEIGHT: 0.010(0.25)

SECTION AA CONDUCTOR CRIMP

CRIMP DATA, STAMPED CONTACTS FOR CRIMPER MFX-3950

INSULATION RANGE: 0.055-0.100(1.40-2.54)

CONDUCTOR CRIMP: 0.010(0.25) MAXIMUM FLASH

CRIMP WIDTH: 0.010(0.25)

CRIMP HEIGHT: 0.010(0.25)

SECTION AA CONDUCTOR CRIMP

A

B

C

D

| REVISIONS |      |     |                       |         |        |        |
|-----------|------|-----|-----------------------|---------|--------|--------|
| REV       | ZONE | ECO | DESCRIPTION           | DATE    | BY     | APP    |
| A1        | -    | -   | RELEASE NUMBER 016971 | 6/12/09 | B.D.B. | M.F.F. |

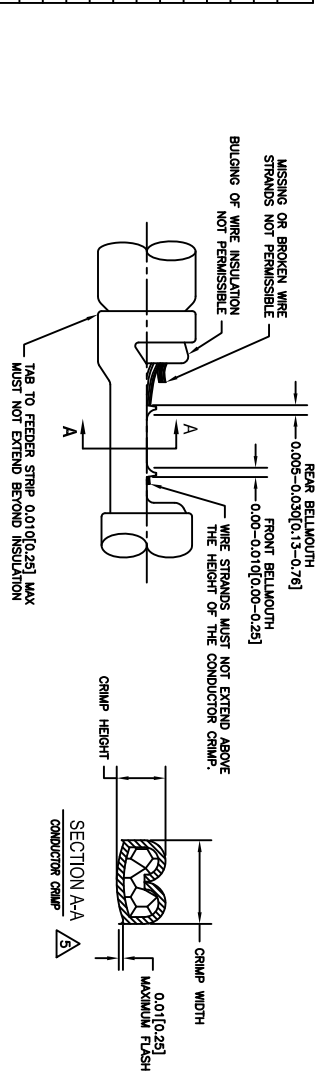
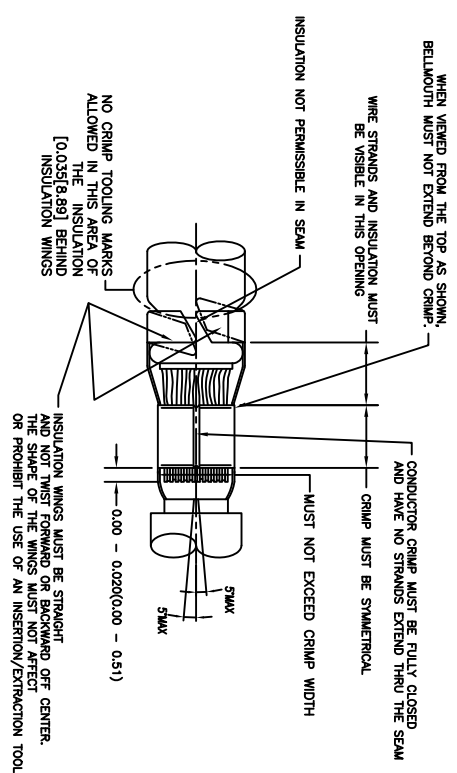
| STAMPED CONTACT PART NUMBER (1009=PIN, 1009=SOCKET)                     | SIZE | CONDUCTOR WIRE SIZE | CRIMP HEIGHT (+0.001/-0.002 INCH / +0.025/-0.05 mm) | CRIMP WIDTH (±0.013 INCH / ±0.08 mm) | CONDUCTOR PUNCH NUMBER | CONDUCTOR ANVIL NUMBER | CRIMP TENSILE REFERENCE (LBS/IN) |
|---|------|---------------------|---|--------------------------------------|------------------------|------------------------|----------------------------------|
| A160-14-011x<br>A162-14-011x<br>INSULATION RANGE 0.095-0.150(2.41-3.81) | 16   | 14 AWG              | 0.0591(1.40)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 2.00mm <sup>2</sup> | 0.0591(1.40)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 1.50mm <sup>2</sup> | 0.0591(1.40)  | 0.094(2.39)                          |                        |                        |                                  |
| A160-16-011x<br>A162-16-011x<br>INSULATION RANGE 0.075-0.140(1.91-3.59) | 16   | 16 AWG              | 0.0501(1.27)  | 0.094(2.39)                          | A117-083-0200          | A117-183-0200          | 29(111)                          |
|   |      | 1.00mm <sup>2</sup> | 0.0501(1.27)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 18 AWG              | 0.0491(1.24)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 0.75mm <sup>2</sup> | 0.0491(1.24)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 14 AWG              | 0.0591(1.40)  | 0.094(2.39)                          |                        |                        |                                  |
|   |      | 2.00mm <sup>2</sup> | 0.0591(1.40)  | 0.094(2.39)                          |                        |                        |                                  |
| A160-18-069x<br>A162-18-069x<br>INSULATION RANGE 0.059-0.100(1.49-2.54) | 16   | 18 AWG              | 0.0491(1.24)  | 0.079(2.01)                          | A117-082-0200          | A117-182-0200          | 29(111)                          |
|   |      | 0.75mm <sup>2</sup> | 0.0491(1.24)  | 0.079(2.01)                          |                        |                        |                                  |
|   |      | 20 AWG              | 0.0481(1.22)  | 0.079(2.01)                          |                        |                        |                                  |
|   |      | 0.50mm <sup>2</sup> | 0.0481(1.22)  | 0.079(2.01)                          |                        |                        |                                  |
|   |      | 0.50mm <sup>2</sup> | 0.0491(1.24)  | 0.079(2.01)                          |                        |                        |                                  |

**CROSS REFERENCE**

| INSULATION DIAMETER RANGE | INSULATION PUNCH NUMBER | INSULATION ANVIL NUMBER | SINE PART NUMBER | DEUTSCH PART NUMBER |
|---------------------------|-------------------------|-------------------------|------------------|---------------------|
| 0.120-0.150 [3.05-3.81]   | A117-225-0200           | A117-325-0200           | MFX-3953         | DCT1620-02-00       |
| 0.105-0.125 [2.67-3.18]   | A117-226-0200           | A117-326-0200           | A117-083-0200    | 1017-083-0200       |
| 0.085-0.111 [2.16-2.82]   | A117-227-0200           | A117-327-0200           | A117-082-0200    | 1017-082-0200       |
| 0.075-0.105 [1.91-2.67]   | A117-228-0200           | A117-328-0200           | A117-183-0200    | 1017-183-0200       |
| 0.063-0.094 [1.62-2.39]   | A117-229-0200           | A117-329-0200           | A117-182-0200    | 1017-182-0200       |
| 0.050-0.075 [1.27-1.91]   | A117-230-0200           | A117-330-0200           | A117-225-0200    | 1017-225-0200       |
|                           |                         |                         | A117-226-0200    | 1017-226-0200       |
|                           |                         |                         | A117-227-0200    | 1017-227-0200       |
|                           |                         |                         | A117-228-0200    | 1017-228-0200       |
|                           |                         |                         | A117-229-0200    | 1017-229-0200       |
|                           |                         |                         | A117-230-0200    | 1017-230-0200       |
|                           |                         |                         | A117-325-0200    | 1017-325-0200       |
|                           |                         |                         | A117-326-0200    | 1017-326-0200       |
|                           |                         |                         | A117-327-0200    | 1017-327-0200       |
|                           |                         |                         | A117-328-0200    | 1017-328-0200       |
|                           |                         |                         | A117-329-0200    | 1017-329-0200       |
|                           |                         |                         | A117-330-0200    | 1017-330-0200       |

**NOTES: UNLESS OTHERWISE SPECIFIED**

- ALL DIMENSIONS ARE IN INCHES(mm).
- FORCES ARE IN POUNDS(LBS) AND NEWTONS(N).
- "X"= PLATING SUFFIX. SEE INDIVIDUAL CONTACT DRAWING.
- WIRE STRIP LENGTH: 0.175±0.029(4.43±0.74). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE. USE A BLADE MICROMETER (0.100[2.54] MIN SPINDLE AND 0.060[0.010][1.50][0.040] ANVIL) TO MEASURE THE CONDUCTOR CRIMP. SEE SECTION AA.
- CRIMP TENSILE STRENGTH IS DETERMINED AT A PULL RATE SPEED OF 1.00 INCH(2.54) PER MINUTE. INSULATION WINGS ARE REMOVED FOR TEST. ACTUAL CRIMP TENSILE STRENGTH DEPENDS ON WIRE/CONDUCTOR SIZE. VALUES ON THIS SPECIFICATION ARE FOR REFERENCE ONLY.
- INSULATION DIAMETER RANGE IS DETERMINED BY CONNECTOR AND ITS WIRE SEAL SIZE. SEE CONNECTOR DRAWING FOR INSULATION RANGE.
- INSULATION CRIMP DIAMETER SHOULD BE THE EQUAL OR LESS THAN THE DIAMETER OF THE WIRE INSULATION (HARD OR TEFLON INSULATION MAY BE AN EXCEPTION). INSULATION CRIMP SHALL NOT AFFECT REMOVAL TOOL PERFORMANCE AND SHALL NOT DAMAGE CONNECTOR GROMMET SEAL.
- CONDUCTOR TYPE ARE PER SAE J1128(AWG) AND ISO 6122(METRIC)
- FOR CONTACT MATERIAL AND PERFORMANCE DATA, SEE DRAWING S2-15217.
- REFER TO S2-15223 AND S2-15224 AND CROSS REFERENCE CHARTS FOR CRIMP TOOL DATA.

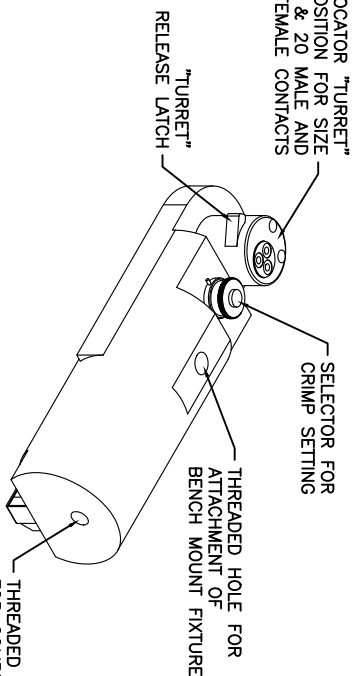
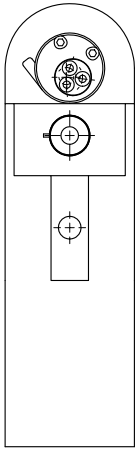


**ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.**

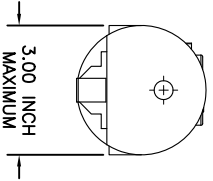
| QUANTITY | PART NUMBER | MATERIALS LIST | DESCRIPTION                                       | ITEM |
|----------|-------------|----------------|---|------|
|          |             |                | SINE Systems Corporation                          |      |
|          |             |                | A Subsidiary of Amphenol Corporation              |      |
|          |             |                | 44724 Moley Drive                                 |      |
|          |             |                | Clinton Township, MI 48036                        |      |
|          |             |                | CRIMP DATA, STAMPED CONTACTS FOR CRIMPER MFX-3953 |      |
|          |             |                | SIZE (P/N) (M/F) (M/F)                            |      |
|          |             |                | C (10K/4)   |      |
|          |             |                | S2-15221  |      |
|          |             |                | SHEET 1 OF 1                                      |      |

| REVOLUTIONS |      | DESCRIPTION | DATE                  | BY     | APPR   |
|-------------|------|-------------|-----------------------|--------|--------|
| REV         | ZONE | ECO         | RELEASE NUMBER 016571 | B.D.B. | M.R.F. |
| 1           | -    | -           | 6/12/09               |        |        |

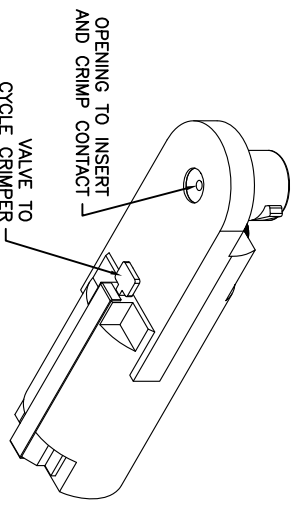
CONTACT LOCATOR "TURRET"  
THREE POSITION FOR SIZE  
12, 16 & 20 MALE AND  
FEMALE CONTACTS



THREADED OPENING  
FOR COMPRESSED  
AIR FITTING



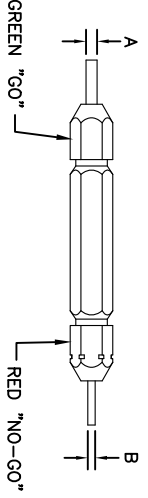
1. THE CA-5E12 IS A COMPRESSED AIR OPERATED HAND CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
2. 80-120 PSI COMPRESSED AIR.
3. WEIGHT: 3.1 LBS
4. SELECTING CONTACT SIZE: PRESS THE RELEASE LATCH ON SIDE OF THE CONTACT LOCATOR "TURRET". ROTATE TO THE DESIRED CONTACT SIZE. THE TOP OF THE "TURRET" IS EMBOSSED WITH THE CONTACT SIZES.
5. SELECTING WIRE SIZE: GRASP THE SELECTOR AND ROTATE TO THE DESIRED NUMBER.



| GAGE PART NO. | A GO DIA. | B NO-GO DIA. | SELECTOR NUMBER |
|---------------|-----------|--------------|-----------------|
| G125          | .0390     | .0440        | 4               |

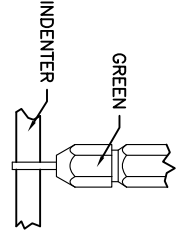
**GAGING INSTRUCTIONS**

CAUTION!  
DO NOT CRIMP GAGE!

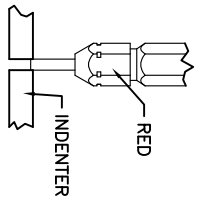


"GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "GO" GAGE END AS SHOWN. GAGE MUST PASS FREELY BETWEEN INDENTER TIPS.

"NO-GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "NO-GO" GAGE END AS SHOWN. THE "NO-GO" MAY PARTIALLY ENTER THE INDENTER OPENING, BUT MUST NOT PASS COMPLETELY THROUGH THE OPENING.



| SELECTOR NUMBER | A GO DIA. | B NO-GO DIA. |
|-----------------|-----------|--------------|
| 1               | .0280     | .0330        |
| 2               | .0320     | .0370        |
| 3               | .0360     | .0410        |
| 4               | .0390     | .0440        |
| 5               | .0450     | .0500        |
| 6               | .0520     | .0570        |
| 7               | .0590     | .0640        |
| 8               | .0880     | .0730        |



| CONTACT SIZE | LOCATOR "TURRET" POSITION COLOR | 26 AWG WIRE | 24 AWG WIRE | 22 AWG WIRE | 20 AWG WIRE | 18 AWG WIRE | 16 AWG WIRE | 14 AWG WIRE | 12 AWG WIRE |
|--------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 20-20        | RED                             | 1           | 2           | 3           | 4           |             |             |             |             |
| 16-22        | BLUE                            | 4           | 5           | 6           |             |             |             |             |             |
| 16-20        | BLUE                            | 1           | 2           | 3           | 4           |             |             |             |             |
| 16-16        | BLUE                            |             |             |             | 4           | 5           | 6           |             |             |
| 12-16        | YELLOW                          |             |             |             | 4           | 5           | 6           |             |             |
| 12-12        | YELLOW                          |             |             |             |             |             |             | 7           | 8           |

| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
|----------|-------------|-------------|------|
|          |             |             |      |

| MATERIALS LIST                     |            | DESCRIPTION |        |
|------------------------------------|------------|-------------|--------|
| UNLESS OTHERWISE SPECIFIED         | SIGNATURES | DATE        |        |
| 1) All dimensions are in inches.   | DATE:      | 6/2/09      |        |
| 2) Pl. SEC 34.00 1 Position 3.1/4" | ORDERED:   | 6/3/09      |        |
| 3) Pl. SEC 34.00 1 Position 3.1/4" | ENGINEER:  | BERNIM      | 6/3/09 |
| 4) Pl. SEC 34.00 1 Position 3.1/4" | APPROVAL:  | BERNIM      | 6/3/09 |
| 5) Revision Standard Per: A        | CUSTOMER:  |             |        |
| 6) Rev. SS-20020                   |            |             |        |
| 7) Material Specification:         |            |             |        |
| 8) Material Specification:         |            |             |        |
| 9) Material Specification:         |            |             |        |
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| 99) Material Specification:        |            |             |        |
| 100) Material Specification:       |            |             |        |

**SINE Systems Corporation**  
A Subsidiary of Amphenol Corporation  
44724 Mowley Drive  
Carlton Township, MI 48036

**INSTRUCTIONS FOR CA-5E12 CRIMPER, PNEUMATIC**

SIZE: 10K44  
SCALE: NONE  
S2-15220  
SHEET: 1 OF 1



| REV ZONE |   | ECO |   | REVISIONS      |        | DESCRIPTION | DATE    | BY     | APPR   |
|----------|---|-----|---|----------------|--------|-------------|---------|--------|--------|
| AI       | - | -   | - | RELEASE NUMBER | 016571 |             | 6/12/09 | B.D.B. | M.R.F. |

CONTACT LOCATOR  
"TURRET"  
THREE POSITIONS FOR  
SIZE 12, 16 & 20 MALE  
AND FEMALE CONTACTS

"TURRET" RELEASE LATCH

6.25 INCH  
MAXIMUM  
OPEN

2.30 INCH  
MAXIMUM  
CLOSED

SELECTOR FOR CRIMP  
SETTING

1.125 INCH MAX.

9.75 INCH MAXIMUM

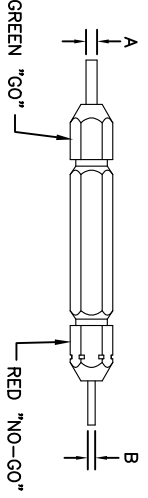
1.00 INCH MAX.

- NOTES:
- THE CA-5D12 IS A HAND OPERATED CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
  - WEIGHT: 1.64 LBS
  - SELECTING CONTACT SIZE: PRESS THE RELEASE LATCH ON SIDE OF THE CONTACT LOCATOR "TURRET". ROTATE TO THE DESIRED CONTACT SIZE. THE TOP OF THE "TURRET" IS EMBOSSED WITH THE CONTACT SIZES.
  - SELECTING WIRE SIZE: REMOVE THE LOCKING CLIP. GRASP THE SELECTOR AND ROTATE TO THE DESIRED NUMBER.

| GAGE PART NO. | A GO DIA. | B NO-GO DIA. | SELECTOR NUMBER |
|---------------|-----------|--------------|-----------------|
| G125          | .0390     | .0440        | 4               |

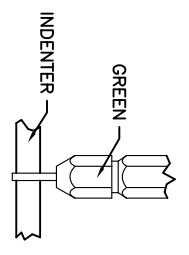
GAGING INSTRUCTIONS

CAUTION!  
DO NOT CRIMP GAGE!

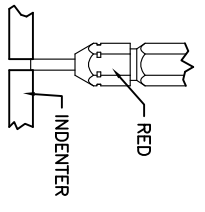


"GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "GO" GAGE END AS SHOWN. GAGE MUST PASS FREELY BETWEEN INDENTER TIPS.

"NO-GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "NO-GO" GAGE END AS SHOWN. THE "NO-GO" MAY PARTIALLY ENTER THE INDENTER OPENING, BUT MUST NOT PASS COMPLETELY THROUGH THE OPENING.



| SELECTOR NUMBER | A GO DIA. | B NO-GO DIA. |
|-----------------|-----------|--------------|
| 1               | .0280     | .0330        |
| 2               | .0320     | .0370        |
| 3               | .0360     | .0410        |
| 4               | .0390     | .0440        |
| 5               | .0450     | .0500        |
| 6               | .0520     | .0570        |
| 7               | .0590     | .0640        |
| 8               | .0880     | .0730        |



| CONTACT SIZE | LOCATOR "TURRET" POSITION | WIRE COLOR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|---------------------------|------------|---|---|---|---|---|---|---|---|
| 20-20        | RED                       | 1          | 2 | 3 | 4 |   |   |   |   |   |
| 16-22        | BLUE                      | 4          | 5 | 6 |   |   |   |   |   |   |
| 16-20        | BLUE                      | 1          | 2 | 3 | 4 |   |   |   |   |   |
| 16-16        | BLUE                      | 4          | 5 | 6 |   |   |   |   |   |   |
| 12-16        | YELLOW                    | 4          | 5 | 6 |   |   |   |   |   |   |
| 12-12        | YELLOW                    |            |   |   |   |   |   |   |   | 8 |

| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
|----------|-------------|-------------|------|
|          |             |             |      |

| MATERIALS LIST |  | DESCRIPTION |  |
|----------------|--|-------------|--|
|                |  |             |  |

SINE Systems Corporation  
A Subsidiary of Amphenol Corporation  
44724 Moley Drive  
Canton Township, MI 48036

INSTRUCTIONS FOR CA-5D12  
CRIMPER, HAND, MACHINED CONTACTS

|                            |  |
|----------------------------|--|
| UNLESS OTHERWISE SPECIFIED | 1) All dimensions are in inches.             |
|                            | 2) All tolerances are per ASME Y14.5-2001.   |
|                            | 3) Pl. SEC. 30.00 1 Position 3.1/4"          |
|                            | 4) Pl. SEC. 30.00 1 Position 3.1/4"          |
|                            | 5) Fabrication Standard Per: ASME Y14.5-2001 |
|                            | 6) Pl. SEC. 30.00 1 Position 3.1/4"          |
|                            | 7) Pl. SEC. 30.00 1 Position 3.1/4"          |
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|                            | 100) Pl. SEC. 30.00 1 Position 3.1/4"        |

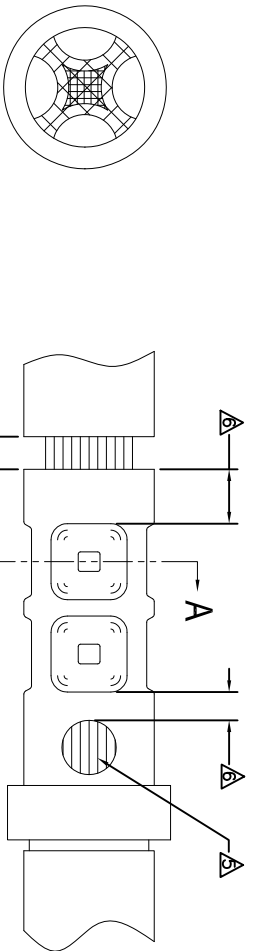
| REVOLUTIONS |      | DESCRIPTION | DATE                  | BY     | APPR   |
|-------------|------|-------------|-----------------------|--------|--------|
| REV         | ZONE | ECO         | RELEASE NUMBER 016571 | B.D.B. | M.R.F. |
| A1          | -    | -           | 6/12/09               |        |        |

| CONTACT P/N   | SIZE TYPE | WIRE SIZE   | REF. ONLY TENSILE LBS[N] |
|---------------|-----------|---|--------------------------|
| AT60-202-16XX | 16PIN     | 1.5mm <sup>2</sup><br>16AWG                                 | 35[156]                  |
| AT62-201-16XX | 16SOC     | 1.0mm <sup>2</sup><br>18AWG<br>0.75mm <sup>2</sup><br>20AWG | 25[111]                  |
|               |           | 0.50mm <sup>2</sup>   | 20[89]                   |

| RECOMMENDED STRIP LENGTH |                        |
|--------------------------|------------------------|
| CONTACT SIZE             | STRIP LENGTH INCH[MM]  |
| 16                       | 0.250-0.312[6.35-7.92] |

| CRIMP TOOLING |                        |                                   |                      |                  |                      |                          |
|---------------|------------------------|-----------------------------------|----------------------|------------------|----------------------|--------------------------|
| CONTACT SIZE  | CRIMP TOOL PART NUMBER | CONTACT LOCATOR "TURRET" POSITION | WIRE SELECTOR NUMBER | GO GAGE INCH[MM] | "NOGO" GAGE INCH[MM] | REMARKS                  |
| 16            | CA-5D12<br>CA-5E12     | BLUE                              | 6                    | 0.052[1.32]      | 0.057[1.45]          |                          |
| 16            | CA-5D12<br>CA-5E12     | BLUE                              | 4                    | 0.039[.991]      | 0.044[1.12]          | SIZE 16 WITH 20 AWG WIRE |

- NOTES: UNLESS OTHERWISE SPECIFIED
- 1. MINIMUM +/-0.0005 [0.013] TOLERANCE STEEL GAGE PINS. DO NOT CRIMP GAGE PINS. CLOSE DIE, THEN USE GAGE PINS.
  - 2. WHEN XX=31, CONTACT PLATING IS GOLD.
  - 3. WHEN XX=141, CONTACT PLATING IS NICKEL.
  - 4. PULL RATE OF 1.0 IN [25.4] PER MINUTE. ACTUAL STRENGTH DEPENDS ON WIRE SIZE.
  - 5. FOR CONTACT PERFORMANCE, MATERIAL SPECIFICATIONS AND APPLICATION DETAILS, SEE DRAWING S2-15217.
  - 6. CONDUCTOR STRANDS MUST BE VISIBLE THRU THE INSPECTION HOLE PRIOR TO CRIMP.
  - 7. PROPER CRIMP TOOLING WILL PRODUCE A CRIMP CENTERED BETWEEN THE INSPECTION HOLE AND CRIMP BARREL END.
  - 8. WIRE SIZES PER SAE J1128 AND J1560 [DIN 72551-6] REFERENCE INSTRUCTION MANUALS S2-15219 AND S2-15220 FOR CA-5D12 AND CA-5E12 HAND AND PNEUMATIC CRIMPER.
  - 9. THE CRIMP HEIGHT DIMENSION AFTER CRIMPING MAY VARY FROM THE VALUES LISTED FOR THE "GO-NOGO" PINS.



| QUANTITY | PART NUMBER    | DESCRIPTION | ITEM |
|----------|----------------|-------------|------|
|          | MATERIALS LIST |             |      |

| UNLESS OTHERWISE SPECIFIED            |          | SIGNATURES |        | DATE |  |
|---------------------------------------|----------|------------|--------|------|--|
| 1) All dimensions are in inches.      | DRWING   | BERNIM     | 6/3/09 |      |  |
| 2) All dimensions are in millimeters. | ENGINEER | RONCE      | 6/3/09 |      |  |
| 3) Pl. SEE 40.011                     | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 4) Pl. SEE 40.011                     | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 5) Fabrication Standards Per:         | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 6) Pl. SEE 40.011                     | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 7) Pl. SEE 40.011                     | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 8) Pl. SEE 40.011                     | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 9) Pl. SEE 40.011                     | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 10) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 11) Pl. SEE 40.011                    | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 12) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 13) Pl. SEE 40.011                    | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 14) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 15) Pl. SEE 40.011                    | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 16) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 17) Pl. SEE 40.011                    | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 18) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |
| 19) Pl. SEE 40.011                    | APPROVAL | BERNIM     | 6/3/09 |      |  |
| 20) Pl. SEE 40.011                    | CHECKED  | BERNIM     | 6/3/09 |      |  |

| PROCESS SPECIFICATIONS |    | MATERIAL SPECIFICATIONS |    |
|------------------------|----|-------------------------|----|
| 1) Pl. SEE 40.011      | MA | 1) Pl. SEE 40.011       | MA |
| 2) Pl. SEE 40.011      | MA | 2) Pl. SEE 40.011       | MA |
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| REVISONS |      |     | DESCRIPTION           | DATE    | BY     | APPR   |
|----------|------|-----|-----------------------|---------|--------|--------|
| REV      | ZONE | ECO | DESCRIPTION           | DATE    | B.D.B. | M.F.F. |
| 1        | -    | -   | RELEASE NUMBER 016971 | 6/12/09 |        |        |

| SOLID CONTACT SIZE | SOLID CONTACT PART NUMBERS |               | WIRE SIZE AVG (mm <sup>2</sup> ) | RECOMMENDED STRIP LENGTH INCH (mm) | MIN CONTACT RETENTION LBS (N) | REF CRIMP TENSILE LBS (N) | MAX RATED AMPS @ 125°C CONTINUOUS |
|--------------------|----------------------------|---------------|----------------------------------|------------------------------------|-------------------------------|---------------------------|-----------------------------------|
|                    | PIN                        | SOCKET        |                                  |                                    |                               |                           |                                   |
| 16                 | AT60-202-16**              | AT62-201-16** | 16-20 [1.5-0.5]                  | 0.25-0.31 [6.35-7.92]              | 25 [1111]                     | 35-20 [156-89]            | 13                                |

| S&P CONTACT SIZE | STAMPED CONTACT PART NUMBERS |              | WIRE SIZE AVG (mm <sup>2</sup> ) | WIRE INSULATION O.D. RANGE | RECOMMENDED STRIP LENGTH INCH (mm) | MIN CONTACT RETENTION LBS (N) | REF CRIMP TENSILE LBS (N) | MAX RATED AMPS @ 125°C CONTINUOUS |
|------------------|------------------------------|--------------|----------------------------------|----------------------------|------------------------------------|-------------------------------|---------------------------|-----------------------------------|
|                  | PIN                          | SOCKET       |                                  |                            |                                    |                               |                           |                                   |
| 16               | AT60-14-01**                 | AT62-14-01** | 14-16 [2.0-1.0]                  | .100 - .150 [2.54 - 3.81]  | 0.150-0.200 [3.81-5.08]            | 25 [1111]                     | 25 [1111]                 | 13                                |
| 16               | AT60-16-01**                 | AT62-16-01** | 16-18 [1.0-0.75]                 | .075 - .100 [1.90 - 2.54]  | 0.150-0.200 [3.81-5.08]            | 25 [1111]                     | 25 [1111]                 | 13                                |
| 16               | AT60-16-06**                 | AT62-16-06** | 18-20 [0.75-0.50]                | .055 - .095 [1.40 - 2.41]  | 0.150-0.200 [3.81-5.08]            | 25 [1111]                     | 25-15 [111-67]            | 13                                |

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE INCHES(MM).
2. ALL FORCES ARE IN LBS(POUNDS) AND "N" (NEWTONS).
3. CONTACT RETENTION TEST PULL RATE SHALL BE 1.0 INCH/2S. 4) PER MINUTE MAXIMUM. WIRE SIZE WILL AFFECT THE TRUE STRENGTH OF THE CRIMP.
4. WIRE SIZES AND INSULATION RANGES ARE FOR REFERENCE ONLY. THE ACTUAL INSULATION RANGE DEPENDS ON CONNECTOR GROMMET SEALING SIZE.

SEE SPECIFICATIONS LISTED BELOW FOR INDIVIDUAL CRIMP INFORMATION:

| "SOLID" CONTACTS | SIZE     | "STAMPED" CONTACTS | SIZE  |
|------------------|----------|--------------------|-------|
|                  | S2-15218 | S2-15222           | 16    |
|                  |          | S2-15221           | 16/20 |

- MAXIMUM RATED CURRENT IN CHART DEPENDS ON CONTACT SIZE. ACTUAL RATED CURRENT DEPENDS ON WIRE SIZE.
- CONTACT FACTORY FOR ALL AVAILABLE PLATING ON SPECIFIC CONTACTS.
- AMPHENOL SINE PERFORMANCE SPECIFICATIONS REQUIRE THE USE OF AMPHENOL SINE APPROVED TOOLING.

| CONTACT RESISTANCE STRENGTH (LESS DROP THROUGH WIRE) |              |                      |                    |
|--|--------------|----------------------|--------------------|
| WIRE AWG   | TEST CURRENT | MILLIVOLT DROP SOLID | MILLIVOLT DROP S&P |
| 14   | 18           | 60                   | 100                |
| 16   | 13           | 60                   | 100                |
| 18   | 10           | 60                   | 100                |
| 20   | 7.5          | 60                   | 100                |

**MATERIAL SPECIFICATION AND PLATING \*\* CODES**

|  |
|--|
| PIN: COPPER ALLOY  |
| SOCKET: COPPER ALLOY WITH STAINLESS STEEL SLEEVE                             |
| SOLID MACHINED CONTACT PLATING OPTIONS: <b>A</b>                             |
| 31= GOLD*  |
| 141= NICKEL  |
| STAMPED CONTACT PLATING OPTIONS: <b>A</b>                                    |
| 22= NICKEL   |
| 44= GOLD*  |
| 89= SELECTIVE GOLD*  |
| GOLD* PLATING IS AVAILABLE (RECOMMENDED) FOR ONLY (<5V) CIRCUIT APPLICATIONS |
| MATERIALS AND PLATINGS ARE ROHS COMPLIANT                                    |

4

3

2

1

| QUANTITY                   | PART NUMBER | DESCRIPTION | ITEM |
|----------------------------|-------------|-------------|------|
| UNLESS OTHERWISE SPECIFIED |             |             |      |
| 1                          | DATE        | SIGNATURES  |      |
| 2                          | DATE        | SIGNATURES  |      |
| 3                          | DATE        | SIGNATURES  |      |
| 4                          | DATE        | SIGNATURES  |      |
| 5                          | DATE        | SIGNATURES  |      |
| 6                          | DATE        | SIGNATURES  |      |
| 7                          | DATE        | SIGNATURES  |      |
| 8                          | DATE        | SIGNATURES  |      |
| 9                          | DATE        | SIGNATURES  |      |
| 10                         | DATE        | SIGNATURES  |      |
| 11                         | DATE        | SIGNATURES  |      |
| 12                         | DATE        | SIGNATURES  |      |
| 13                         | DATE        | SIGNATURES  |      |
| 14                         | DATE        | SIGNATURES  |      |
| 15                         | DATE        | SIGNATURES  |      |
| 16                         | DATE        | SIGNATURES  |      |
| 17                         | DATE        | SIGNATURES  |      |
| 18                         | DATE        | SIGNATURES  |      |
| 19                         | DATE        | SIGNATURES  |      |
| 20                         | DATE        | SIGNATURES  |      |
| 21                         | DATE        | SIGNATURES  |      |
| 22                         | DATE        | SIGNATURES  |      |
| 23                         | DATE        | SIGNATURES  |      |
| 24                         | DATE        | SIGNATURES  |      |
| 25                         | DATE        | SIGNATURES  |      |
| 26                         | DATE        | SIGNATURES  |      |
| 27                         | DATE        | SIGNATURES  |      |
| 28                         | DATE        | SIGNATURES  |      |
| 29                         | DATE        | SIGNATURES  |      |
| 30                         | DATE        | SIGNATURES  |      |
| 31                         | DATE        | SIGNATURES  |      |
| 32                         | DATE        | SIGNATURES  |      |
| 33                         | DATE        | SIGNATURES  |      |
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| 38                         | DATE        | SIGNATURES  |      |
| 39                         | DATE        | SIGNATURES  |      |
| 40                         | DATE        | SIGNATURES  |      |
| 41                         | DATE        | SIGNATURES  |      |
| 42                         | DATE        | SIGNATURES  |      |
| 43                         | DATE        | SIGNATURES  |      |
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CONTACT DATA, GENERAL

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Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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