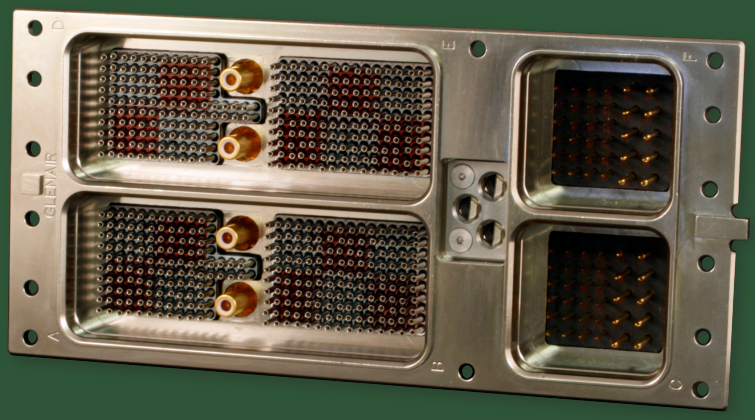
SERIES 28

HiPer-D® vs. ARINC 600

Smaller, lighter HiPer-Ds with robust EMI/grounding performance save weight, and reduce assembly time and complexity compared to conventional ARINC backplane/ motherboard configurations.



Legacy ARINC 600 type solutions are no longer optimized for the size and weight reduction requirements of today's aircraft industry.

High-performance HiPer-D® connectors with their advanced EMI shielding, grounding, environmental sealing, and guide-pin-managed blind mate capabilities allow designers to implement a distributed architecture model with significant performance advantages.

Available HiPer-D® insert arrangements, from 9 – 104 way and supported contact types including size #22 and #20 signal as well as size #8 power and coax.

The opportunity to replace big, bulky and expensive ARINC 600 type rack-and-panel connectors with a distributed architecture utilizing discrete D-subminiature connectors is finally realized with the high-performance Glenair HiPer-D®. With the outstanding performance of the HiPer-D, system designers are now able to optimize available space in equipment consoles and boxes without compromising EMC or temperature tolerances. Distributed interconnect architectures of this type also allow for easier troubleshooting, and the ability to eliminate expensive motherboards and of course, cumbersome rack-and-panel ARINC connectors. The ability to separate out intrinsically safe functions—for example segregating power circuits completely from signal circuits—allows designers to build handier systems which are easier to assemble and maintain.

Glenair®

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Glendale, CA
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SERIES 28

Hi-Speed HiPer-D® Connectors

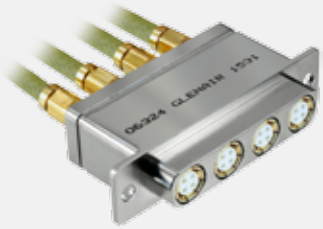
Product selection guide

Reference and Technical Data	
Introduction to Hi-Speed HiPer-D Connectors	Page D-2
Contact Arrangements, Product Features, Cutaway Views	Page D-3
Contact Information and Specifications	Page D-4
SpeedMaster™ Contact Performance Overview	Page D-10
SpeedMaster™ Contact Description	Page D-12
SpeedMaster™ Compliance Testing	Page D-13.

Hi-Speed HiPer-D Connectors

280-082P Page D-6

The Hi-Speed HiPer-D® pin connector features a one piece rugged machined aluminum shell and an optional ground spring for improved resistance to electromagnetic interference. Supplied with a choice of coax, twinax, quadrax or Ochito (octaxial) contacts. Hi-Speed HiPer-D connectors are nonenvironmental.



280-083S Page D-8

The Hi-Speed HiPer-D® socket connector features a one piece rugged machined aluminum shell. Supplied with a choice of coax, twinax, quadrax or Ochito (octaxial) contacts. Hi-Speed HiPer-D connectors are nonenvironmental.

280-101M and 280-098F Page D-14

The Hi-Speed HiPer-D® connectors with SpeedMaster™ 10G contact modules utilize industry standard size 22D contacts. In-line connector shells are made from machined aluminum and available with 2 or 4 cavities. 280-101M is a cable plug while 280-098F is a cable receptacle.

280-102M and 280-099F Page D-16

The Hi-Speed HiPer-D® connectors with SpeedMaster™ 10G contact modules utilize industry standard size 22D contacts. Rear panel mount connector shells are made from machined aluminum and available with 2 or 4 cavities. 280-102M is a panel mount plug while 280-099F is a panel mount receptacle..

280-103M and 280-100F Page D-18

The Hi-Speed HiPer-D® connectors with SpeedMaster™ 10G contact modules utilize industry standard size 22D contacts. Float mount connector shells are made from machined aluminum and available with 2 or 4 cavities. 280-103M is a panel mount plug while 280-100F is a panel mount receptacle..

D

Series 28

Hi-Speed HiPerD Connectors

Now available, HiPer-D® Connectors for high speed applications. Available with one to five cavities, these connectors accept size 8 coax, twinax, quadrax and Ochito (octaxial) contacts. These M24308-style connectors fit standard D Subminiature panel cutouts. Rugged all-metal construction with optional EMI spring. Connector shell has keyway for contact orientation.

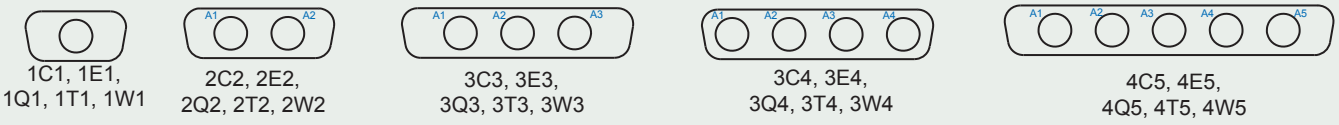
HiPer-D Pin

HiPer-D Socket

Product Facts

- **Ideally suited for high speed data applications**
- **Rugged machined one-piece aluminum shell**
- **For use with coax, twinax, quadrax, and ochito contacts**
- **Easy contact installation and removal**
- **Fits panel footprint of M24308 D-Sub products**
- **Available in 5 contact arrangements**
- **Optional EMI ground spring**

Contact Arrangements



1C1, 1E1, 1Q1, 1T1, 1W1

2C2, 2E2, 2Q2, 2T2, 2W2

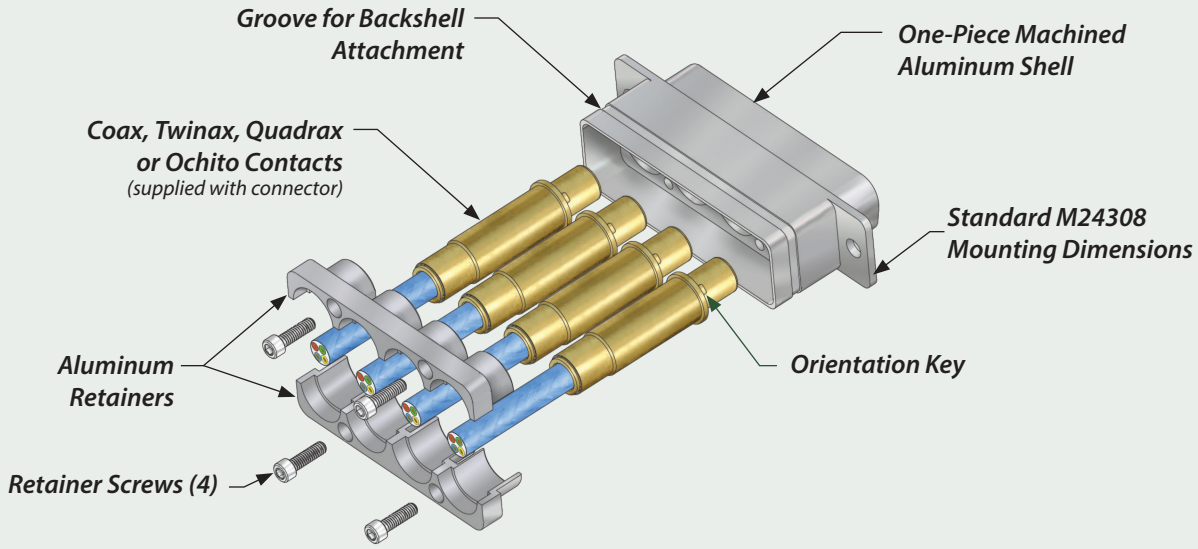
3C3, 3E3, 3Q3, 3T3, 3W3

3C4, 3E4, 3Q4, 3T4, 3W4

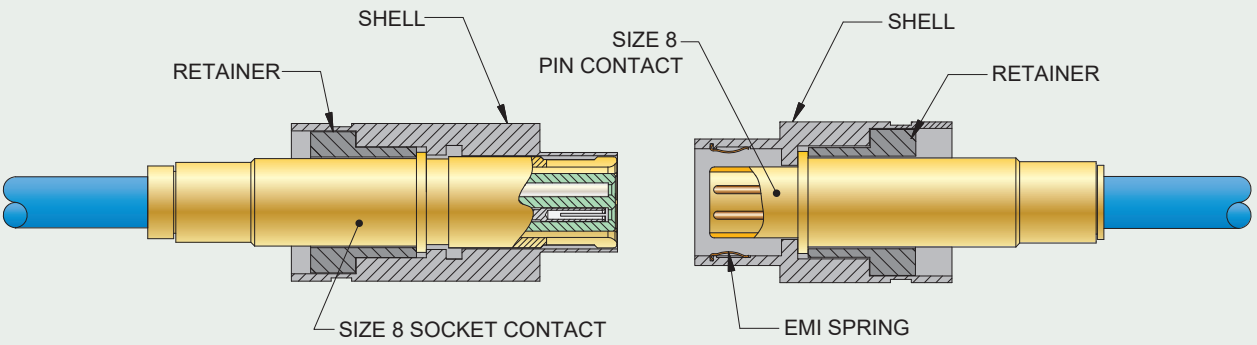
4C5, 4E5, 4Q5, 4T5, 4W5

Cavity identification is shown for the mating face of pin connector.

Product Features



Cutaway Views



Pin Connector **Socket Connector**

Coax Contacts for Hi-Speed HiPer-D

Specifications

- Cable accommodation: RG316, RG316DS, RG142, RG400
- Operating temperature: -65 ºC. to +175 ºC.
- Nominal impedance: 50 ohms
- Frequency range: DC – 3 GHz
- DWV: 1300 Vac
- Durability: 500 mating cycles
- Shock: EIA-364-27 condition D
- Vibration: EIA-364-28 condition VI
- Meets applicable SAE AS39029 requirements

Construction

- Center contact, contact body, crimp ferrule: copper alloy, 50 microinches gold over nickel plating
- Insulator: fluoroplastic

Notes

1. Center contact is solder termination.
2. Shield ferrule is hex crimp termination.

Concentric Twinax Contacts for Hi-Speed HiPer-D

Specifications

- 77 ohm and 100 ohm versions
- Operating temperature: -65 ºC. to +175 ºC.
- Wire accommodation: M17/176-0002 (77 ohm), 0024A0024 (TE), GSC-02-81416-00 (Gore)
- DWV: 500 Vac (intermediate contact to outer body)
- Durability: 500 mating cycles
- Shock: MIL-DTL-38999 Series III
- Vibration: MIL-DTL-38999 Series III
- Meets applicable SAE AS39029 requirements

Construction

- Center contact, intermediate contact, outer contact, crimp ferrule: copper alloy, 50 microinches gold over nickel plating
- Insulator: PEEK and PTFE
- Socket contact hood: stainless steel

Notes

1. Crimp termination.

Differential Twinax Contacts for Hi-Speed HiPer-D

Specifications

- Wire accommodation: #24 and #26 AWG shielded twisted pair
- Frequency range: DC – 20 MHz
- Operating temperature: -65 ºC. to +175 ºC.
- DWV: 500 Vac (inner contact to outer body)
- Durability: 500 mating cycles
- Shock: MIL-DTL-38999 Series III
- Vibration: MIL-DTL-38999 Series III
- Meets applicable SAE AS39029 requirements

Construction

- Inner contact, outer contact, crimp ferrule: copper alloy, 50 microinches gold over nickel plating
- Insulator: PPS

Notes

1. Crimp termination.

Quadrax Contacts for Hi-Speed HiPer-D

Specifications

- Wire accommodation: 22, 24, and 26 AWG shielded quad cable
- Operating temperature: -65 ºC. to +175 ºC.
- Characteristic impedance: 100 ohms
- Propagation delay: ANSI/TIA-568-C.2 paragraph 6.8.18 (Cat 5e)
- Insertion loss: ANSI/TIA-568-C.2 paragraph 6.8.7 (Cat 5e)
- Near-End Crosstalk: ANSI/TIA-568-C.2 paragraph 6.8.8 (Cat 5e)
- Far-End Crosstalk: ANSI/TIA-568-C.2 paragraph 6.8.10 (Cat 5e)
- Return Loss: ANSI/TIA-568-C.2 paragraph 6.8.6 (Cat 5e)
- Frequency range: DC – 3 GHz
- DWV: 500 Vac inner contacts to outer contact, 1000 Vac inner contact to inner contact
- Insulation resistance: 5000 megohms min.
- Durability: 500 mating cycles
- Shock: MIL-DTL-38999 Series III
- Vibration: MIL-DTL-38999 Series III
- Meets SAE AS39029/119 and /120 requirements

Construction

- Inner contacts, outer contact, shield crimp ferrule: copper alloy, 50 microinches gold over nickel plating
- Insulator: PPS

Notes

1. Crimp termination

El Ochito® Contacts for Hi-Speed HiPer-D

Specifications

- Wire accommodation: 22, 24, and 26 AWG shielded twisted pair cable
- Operating temperature: -65 ºC. to +175 ºC.
- Characteristic impedance: 100 ohms
- Propagation delay: ANSI/TIA-568-C.2 (Cat 6a, 10GBASE-T)
- Insertion loss: ANSI/TIA-568-C.2 (Cat 6a, 10GBASE-T)
- Near-End Crosstalk: ANSI/TIA-568-C.2 (Cat 6a, 10GBASE-T)
- Far-End Crosstalk: ANSI/TIA-568-C.2 (Cat 6a, 10GBASE-T)
- Return Loss: ANSI/TIA-568-C.2 (Cat 6a, 10GBASE-T)
- Frequency range: DC – 3 GHz
- DWV: 500 Vac inner contacts to outer contact, 1000 Vac inner contact to inner contact
- Insulation resistance: 5000 megohms min.
- Durability: 500 mating cycles
- Shock: MIL-DTL-38999 Series III
- Vibration: MIL-DTL-38999 Series III

Construction

- Inner contacts, outer contact, shield crimp ferrule: copper alloy, 50 microinches gold over nickel plating
- Insulator: PPS

Notes

1. Crimp termination

D

Hi-Speed HiPer-D® Connectors

280-082P pin connector with size #8 coax, twinax, quadrax and El Ochito® (octaxial) contacts

- **Rugged machined one-piece shell**
- **Coax, twinax, quadrax, and El Ochito® contacts**
- **Easy contact installation and removal**
- **Fits panel footprint of M24308 D-Sub products**

The Hi-Speed HiPer-D® is a M24308-type connector with keyed cavities for size 8 coax, twinax, quadrax and El Ochito® contacts. The Hi-Speed HiPer-D® pin connector features a one piece rugged machined aluminum metal housing and an optional ground spring for improved resistance to electromagnetic interference. Easy contact installation and removal, no tool required. Aluminum retainers captivate contacts. Available with 1, 2, 3, 4 or 5 cavities, these high-density connectors provide size and weight savings compared to circular connectors. Hi-Speed, HiPer-D® connectors fit standard M24308 panel cutouts. Hi-Speed, HiPer-D® connectors are non-environmental.

D

Technical Data

Specifications

- Operating temperature: -65 ºC. to +200 ºC.
- Durability: 500 mating cycles
- Shock: EIA-364-27 condition E
- Vibration: EIA-364-28 condition IV
- Humidity: EIA-364-31 condition 4
- Salt spray: EIA-364-26 condition B
- Maximum Mating Force:
  shell size 1: 10 lbs.
  shell size 2: 17 lbs.
  shell size 3: 28 lbs.
  shell size 4: 39 lbs.

Construction

- Shell: aluminum alloy
- Ground spring: beryllium copper, nickel plated
- Retainers: aluminum aluminum alloy
- Screws: stainless steel, passivated

Ordering Information

Sample Part Number	280-082P	2Q2	ME	G	N	-05

Basic Part Number	**280-082P**
Shell Size- Insert Arrangement	*See Table 1*
Shell Finish *(See Section A for Additional Finishes)*	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **Z2** = Gold over Electroless Nickel **JF** = Yellow Chromate over Cadmium
Ground Spring	**G** = Supplied with EMIGround Spring **N** = No Ground Spring
Mating Hardware *(See Table 3 for details)*	**N** = No Hardware (Through-Hole) **P** = #4-40 Female Jackpost **L** = Captive Jackscrew, Hex Head, Low Profile **K** = Slot Head Jackscrew, Extended Length **S** = Screwlock, Male, Hex Head, Low Profile **T** = Screwlock, Male, Slot Head, Extended Length
Hi-Speed Contact Option	*See Table 2 for contact dash numbers. Omit if ordered less contacts.*

Table 1
Shell Size – Insert Arrangement

Shell Size	No of Contacts	Coax	Differential Twinax	Concentric Twinax	Quadrax	Ochito (Octo-Ax)	Less Contacts
1	1	1C1	1D1	1T1	1Q1	1E1	1W1
2	2	2C2	2D2	2T2	2Q2	2E2	2W2
3	3	3C3	3D3	3T3	3Q3	3E3	3W3
3	4	3C4	3D4	3T4	3Q4	3E4	3W4
4	5	4C5	4D5	4T5	4Q5	4E5	4W5

Contact Arrangements

1Q1, 1T1, 1D1, 1C1, 1E1, 1W1

2Q2, 2T2, 2D2, 2C2, 2E2, 2W2

3Q3, 3T3, 3D3, 3C3, 3E3, 3W3

3Q4, 3T4, 3D4, 3C4, 3E4, 3W4

4Q5, 4T5, 4D5, 4C5, 4E5, 4W5

Cavity identification is shown for the mating face of pin connector.

Hi-Speed HiPer-D® Connectors

280-082P pin connector with size #8 coax, twinax, quadrax and El Ochito® (octaxial) contacts

Table 2
Size 8 Pin Contacts for 280-082P Connectors

Contact Type	Dash No.	Cable Type	Ref. Contact Part Nmber*
Coax *(1C1, 2C2, 3C3, 3C4, 4C5)*	-01	RG316DS	852-110-01
	-02	RG316	852-110-02
	-03	RG142, RG400	852-110-03
Concentric Twinax *(1T1, 2T2, 3T3, 3T4, 4T5)*	-01	0024A0024 (TE) GSC-03-81416-00 (Gore)	853-011
	-02	M17/176-00002	853-003-08-625
Differential Twinax *(1D1, 2D2, 3D3, 3D4, 4D5)*	-01	RCN8945 (Gore)	853-014-01
	-02	GSC-03-83971-00 (Gore)	853-014-02
	-03	10612 (TE)	853-014-03
	-04	0024A0024 (TE)	853-014-04
	-05	M17/176-00002 5M2022-003	853-014-05
	-06	1350SB (Belden)	853-014-06
	-07	2525B0524 (TE)	853-014-07
Quadrax *(1Q1, 2Q2, 3Q3, 3Q4, 4Q5)*	-01	NF26Q100-01 (Carlisle)	854-001-01
	-02	E51424 (PIC) NF24Q100-01 (Carlisle)	854-001-02
	-03	NF26Q100-01 (Carlisle) E51426 (PIC)	854-001-03
	-04	F 4704-4 (Draka) E50424 (PIC)	854-001-04
	-05	NF22Q100-01	854-001-05
El Ochito® *(1E1, 2E2, 3E3, 3E4, 4E5)*	-01	E6A326 (PIC)	858-003-01
	-02	RCN9047-26 (Gore)	858-016-01

* Refer to the RF Datalink & Contacts Catalog for detailed information

280-082P DIMENSIONS

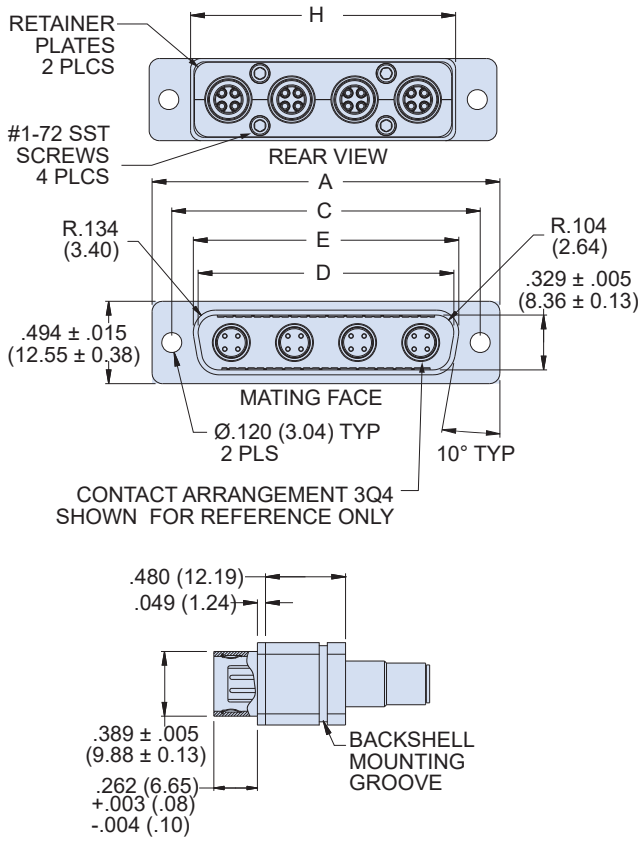
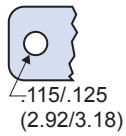
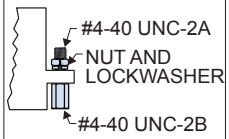
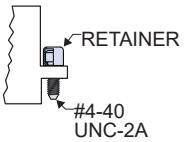
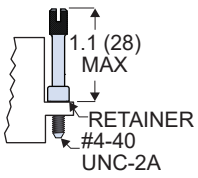
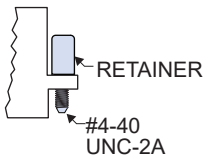
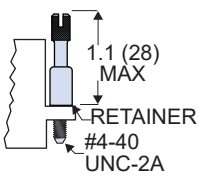


Table 3
Mating Hardware

N Thru-Hole, No Hardware	P Female Jackpost	L Captive Jackscrew, Hex Head, Low Profile
		
K Slot-Head Extended Jackscrew	**S** Captive Screwlock, Hex Head, Low Profile	**T** Slot-Head Extended Length, Screwlock
		

Dimensions

Shell Size	A		C Basic		D		E		H	
	In. ±.015	mm. ± 0.38			In. ±.005	mm. ± 0.13	In. ±.005	mm. ± 0.13	In. ±.005	mm. ± 0.13
1	1.213	30.81	0.984	24.99	0.666	16.92	0.726	18.44	0.745	18.92
2	1.541	39.14	1.312	33.32	0.994	25.25	1.054	26.77	1.075	27.31
3	2.088	53.04	1.852	47.04	1.534	38.96	1.594	40.49	1.615	41.02
4	2.729	69.32	2.500	63.50	2.182	55.42	2.242	56.95	2.260	57.40

NOTES

1. Connectors are supplied with unassembled contacts.
2. 280-082P pin connectors are intermateable with cable-mount 280-083S socket connectors and with 280-085S and 280-091S printed circuit board connectors.
3. When rear panel mounting, order connector without hardware (N option) and order jackpost kit 289-015 separately.
4. Connectors are compatible with HiPer-D® protective covers and 289T005 HiPer-D® backshells.

D

Hi-Speed HiPer-D® Connectors

280-083S socket connector with for size 8 coax, twinax, quadrax and El Ochito® (octaxial) contacts

- **Rugged machined one-piece shell**
- **Coax, twinax, quadrax, and El Ochito® contacts**
- **Easy contact installation and removal**
- **Fits panel footprint of M24308 D-Sub products**

D

Technical Data

Specifications

- Operating temperature: -65 ºC. to +200 ºC.
- Durability: 500 mating cycles
- Shock: EIA-364-27 condition E
- Vibration: EIA-364-28 condition IV
- Humidity: EIA-364-31 condition 4
- Salt spray: EIA-364-26 condition B
- Maximum Mating Force:
  shell size 1: 10 lbs.
  shell size 2: 17 lbs.
  shell size 3: 28 lbs.
  shell size 4: 39 lbs.

Construction

- Shell: aluminum alloy
- Retainers: aluminum alloy
- Screws: stainless steel, passivated

The Hi-Speed HiPer-D® is a M24308-type connector with keyed cavities for size 8 coax, twinax, quadrax and El Ochito® contacts. The Hi-Speed HiPer-D® socket connector features a one piece machined aluminum shell. Easy contact installation and removal, no tool required. Aluminum retainers captivate contacts. Available with 1, 2, 3, 4 or 5 cavities, these connectors provide size and weight savings compared to circular connectors. Hi-Speed, HiPer-D® connectors fit standard M24308 panel cutouts. Hi-Speed HiPer-D® connectors are non-environmental.

Ordering Information

Sample Part Number	280-083S	4T5	MT	N	-01
Basic Part Number	**280-083S**				
Shell Size- Insert Arrangement	*See Table 1*				
Shell Finish *(See Section A for Additional Finishes)*	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **Z2** = Gold over Electroless Nickel **JF** = Yellow Chromate over Cadmium				
Mating Hardware *(See Table 3 for details)*	**N** = No Hardware (Through-Hole) **P** = #4-40 Female Jackpost **L** = Captive Jackscrew, Hex Head, Low Profile **K** = Slot Head Jackscrew, Extended Length **S** = Screwlock, Male, Hex Head, Low Profile **T** = Screwlock, Male, Slot Head, Extended Length				
Hi-Speed Contact Option	*See Table 2 for contact dash numbers. Omit if ordered less contacts.*				

Table 1
Shell Size – Insert Arrangement

Shell Size	No of Contacts	Coax	Differential Twinax	Concentric Twinax	Quadrax	Ochito (Octo-Ax)	Less Contacts
1	1	1C1	1D1	1T1	1Q1	1E1	1W1
2	2	2C2	2D2	2T2	2Q2	2E2	2W2
3	3	3C3	3D3	3T3	3Q3	3E3	3W3
3	4	3C4	3D4	3T4	3Q4	3E4	3W4
4	5	4C5	4D5	4T5	4Q5	4E5	4W5

Contact Arrangements

1Q1, 1T1, 1D1, 1C1, 1E1, 1W1

2Q2, 2T2, 2D2, 2C2, 2E2, 2W2

3Q3, 3T3, 3D3, 3C3, 3E3, 3W3

3Q4, 3T4, 3D4, 3C4, 3E4, 3W4

4Q5, 4T5, 4D5, 4C5, 4E5, 4W5

Cavity identification is shown for the mating face of pin connector.

280-083S socket connector with size 8 coax, twinax, quadrax and El Ochito® (octaxial) contacts

Table 2
Size 8 Pin Contacts for 280-083S Connectors

Contact Type	Dash No.	Cable Type	Ref. Contact Part Nmber
Coax *(1C1, 2C2, 3C3, 3C4, 4C5)*	-01	RG316DS	852-111-01
	-02	RG316	852-111-02
	-03	RG142, RG400	852-111-03
Concentric Twinax *(1T1, 2T2, 3T3, 3T4, 4T5)*	-01	0024A0024 (TE) GSC-03-81416-00 (Gore)	853-012
	-02	M17/176-00002	853-004-08-628
Differential Twinax *(1D1, 2D2, 3D3, 3D4, 4D5)*	-01	RCN8945 (Gore)	853-013-01
	-02	GSC-03-83971-00 (Gore)	853-013-02
	-03	10612 (TE)	853-013-03
	-04	0024A0024 (TE)	853-013-04
	-05	M17/176-00002 5M2022-003	853-013-05
	-06	1350SB (Belden)	853-013-06
	-07	2525B0524 (TE)	853-013-07
Quadrax *(1Q1, 2Q2, 3Q3, 3Q4, 4Q5)*	-01	NF26Q100-01 (Carlisle)	854-002-01
	-02	E51424 (PIC) NF24Q100-01 (Carlisle)	854-002-02
	-03	NF26Q100-01 (Carlisle) E51426 (PIC)	854-002-03
	-04	F 4704-4 (Draka) E50424 (PIC)	854-002-04
	-05	NF22Q100-01 (Carlisle)	854-002-05
El Ochito® *(1E1, 2E2, 3E3, 3E4, 4E5)*	-01	E6A326 (PIC)	858-003-01
	-02	RCN9047-26 (Gore)	858-017-01

* Refer to the RF Datalink & Contacts Catalog for detailed information

280-083S DIMENSIONS

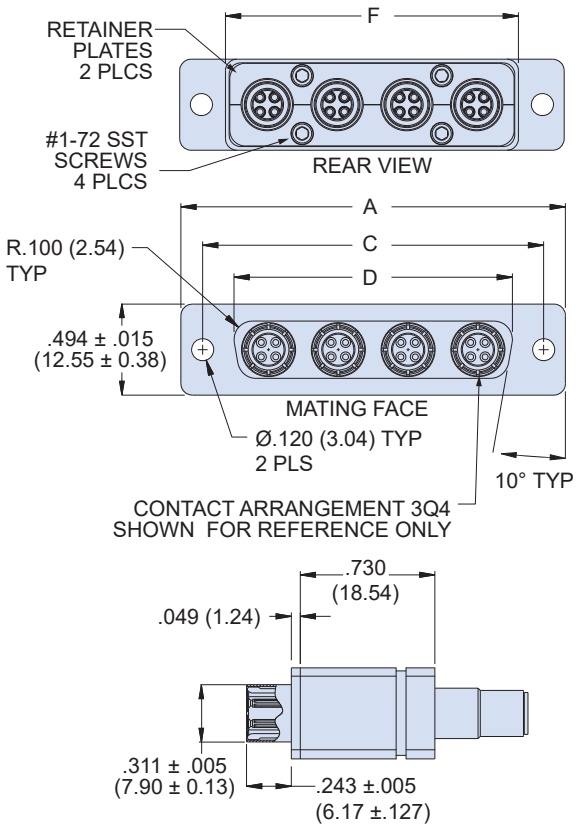
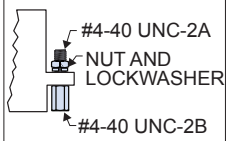
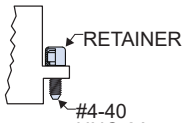
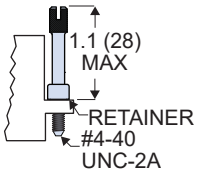
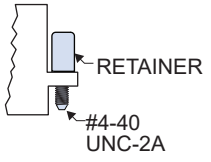
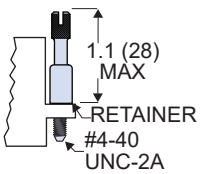


Table 3
Mating Hardware

N Thru-Hole, No Hardware	P Female Jackpost	L Captive Jackscrew, Hex Head, Low Profile
		
K Slot-Head Extended Jackscrew	**S** Captive Screwlock, Hex Head, Low Profile	**T** Slot-Head Extended Length, Screwlock
		

Dimensions

Shell Size	A		C Basic		D		F	
	In. ±.015	mm. ± 0.38			In. ±.003	mm. ± 0.08	In. ±.005	mm. ± 0.13
1	1.213	30.81	.984	24.99	.643	16.33	.745	18.92
2	1.541	39.14	1.312	33.32	.971	24.66	1.075	27.31
3	2.088	53.04	1.852	47.04	1.511	38.38	1.615	41.02
4	2.729	69.32	2.500	63.50	2.159	54.84	2.260	57.40

NOTES

1. Connectors are supplied with unassembled contacts.
2. 280-083S socket connectors are intermateable with cable-mount 280-082P pin connectors and with 280-084P and 280-090P printed circuit board connectors.
3. When rear panel mounting, order connector without hardware (N option) and order jackpost kit 289-015 separately.
4. Connectors are compatible with HiPer-D® protective covers and 289T005 HiPer-D® backshells.

SPEEDMASTER™

NEXT-GENERATION

SpeedMaster™ 10G

High-speed, repairable IFEC connection system

Newly developed SpeedMaster™ 10G is purpose-designed to meet the performance requirements and installation/use preferences of aerospace industry IFEC manufacturers. Optimized for high-speed Cat 6A Ethernet performance, the SpeedMaster™ 10G system offers industry-leading NEXT, return loss and insertion loss performance due to its highly-engineered isolation and separation architecture. Easy to assemble, terminate, install and repair, the SpeedMaster™ 10G utilizes size #22D contacts, tools, and cable, and meets the broad range of aerospace industry requirements for vibration, temperature cycling, durability, and safety performance.

- **Utilizes aerospace industry standard #22D contacts, tools and widely available Ethernet flight cable**
- **Fast, easy termination**
- **Significant weight reduction compared to Quadrax solutions (reduces cable requirement by ½)**
- **High-density, repairable solution—ideally suited for today's networked IFEC environments**

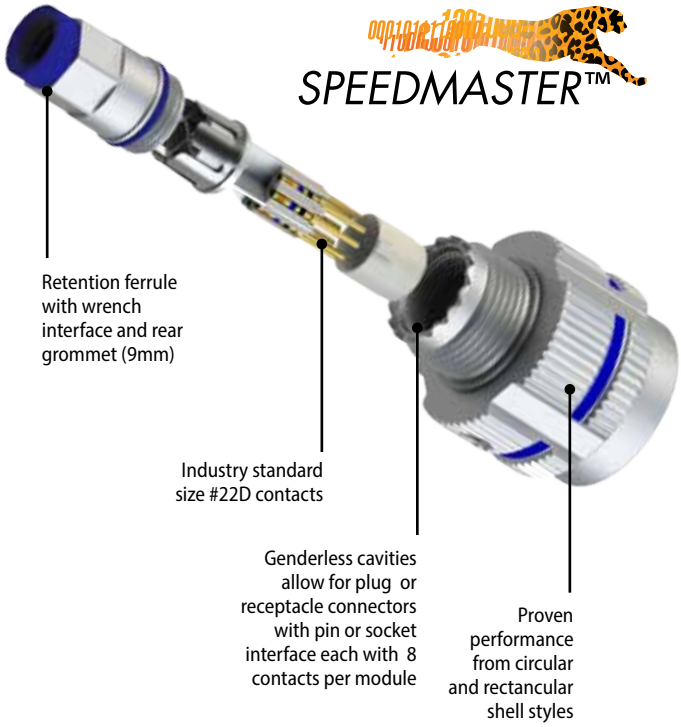
Mighty Mouse Locking Push/Pull Plug and Receptacle

HiPer-D Rectangular (M24308)

SuperNine® Plug and Receptacle

Hi-Speed HiPer-D® Connectors

Repairable IFEC 10G Connection System



The SpeedMaster™ Difference

SpeedMaster™ the high-speed multi-contact solution for the Mighty Mouse, HiPer-D, SuperNine 38999 type family of connectors. Each SpeedMaster™ module consists of 4 pairs of pins or sockets incorporating industry standard, size 22D contacts to provide 10G performance. Contacts are crimp terminated for easy replacement. Each module is individually sealed within the shell, and retained in place with a threaded ferrule. Additionally, module cavities are genderless allowing a pin or socket interface for plugs or receptacles. These features result in a two fold benefit. An easily removable and repairable contact makes this high-performance, robust connector an excellent choice for reducing network downtime and improving overall network performance. Additionally Glenair offers this robost connector in 3 connector packages, including our small form factor Mighty Mouse Series 824 Locking Push / Pull, HiPer-D (M24308) rectangular D-Sub, and our 38999 type "better than QPL" connectors allowing you to custom fit your application needs. Meet the demand for next generation IFEC networks with SpeedMaster™, the next generation contact system from Glenair.

D

SPEEDMASTER™ 10G NEXT-GENERATION IFEC CONNECTION SYSTEM

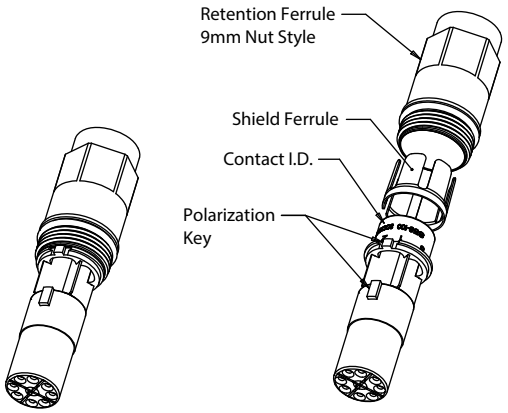
SpeedMaster™ 10G modular inserts are available for Series 23 SuperNine – 38999, Series 80 Mighty Mouse – Locking Push / Pull and Series 28 HiPer-D – M24308 rectangular D-Sub connectors

The SpeedMaster™ 10G is optimized for high-speed / Ethernet performance and incorporates standard M39029 #22D contacts isolated for superior NEXT, return loss and insertion loss performance

Hi-Speed HiPer-D® Connectors

858-100 and 858-101, SpeedMaster™ 10GBase-T Cat 6a Contacts

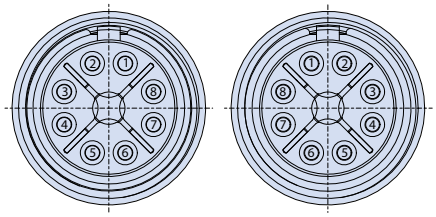
858-100 SPEEDMASTER™ SOCKET MODULE



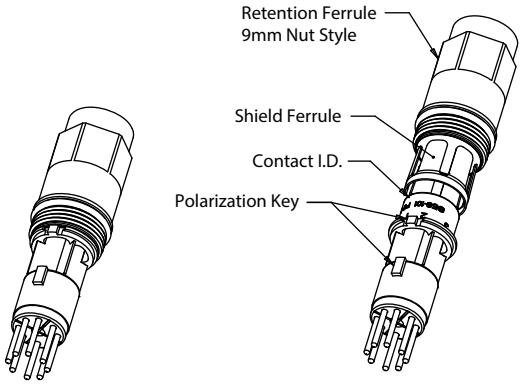
858	-100	-1
Product Code	Basic No	See Cable Size Table

Cable Size	
Cable Size	Cable Ø
1	.280 (7.11)
2	.270 (6.86)
3	.260 (6.60)
4	.250 (6.35)
5	.240 (6.10)
6	.230 (5.84)
7	.220 (5.59)

Speedmaster™ Module Inner Contact Pinout		
	Pin Out	
	Location	Color
	1	Orng/Wht
	2	Orange
	3	Blu/Wht
	4	Blue
	5	Brwn/Wht
	6	Brown
	7	Grn/White
	8	Green



858-101 SPEEDMASTER™ PIN MODULE



858	-101	-1
Product Code	Basic No	See Cable Size Table

SPEEDMASTER™ MODULE MATERIAL/FINISH

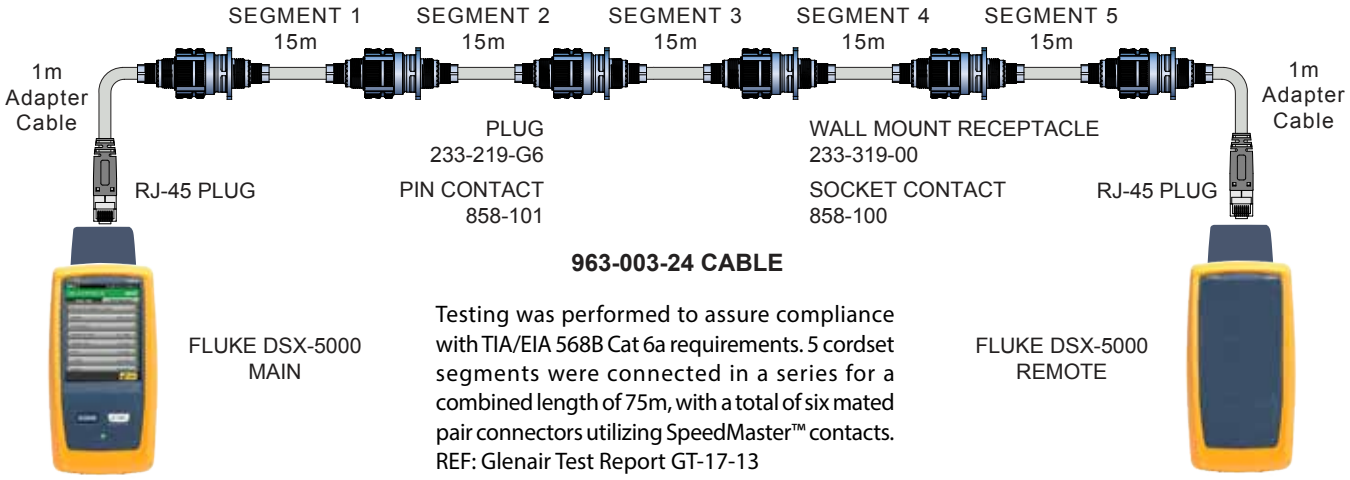
1. **IMPORTANT: SpeedMaster™ high-speed modules are only designed to be installed in "Glenair SpeedMaster™ series connectors.**
2. High-speed module is designed to accommodate cable with wire insulation up to Ø.055 inches and cable jackets up to Ø.280 inches. See cables table for suggest list.
3. For cables in-between sizes, select smaller size.
4. See AI85082 for assembly instructions
5. Tools Needed:
   - M39029/57-354 contacts:
     Basic tool M22520/2-01 (Glenair P/N 809-015
     Positioner, Daniels PN K41 (Glenair P/N 859-019)
6. Material/Finish
   - Isolator body - copper alloy / electroless nickel.
   - Contacts - copper alloy / gold plated
   - Retention ferrule - copper alloy / electroless nickel.
   - Inner shield ferrule: copper alloy / electroless nickel.
   - Insulators - rigid dielectric / N.A.
   - O-rings/grommets - fluorosilicone blend / N.A

Cables*					
Cable P/N	Cable Category	Cable Construction	Wire Gage	Cable Ø	Assembly Instructions
963-003-24	CAT 6A	SF/UTP	24	.280 (7.11)	AI85082
963-003-26	CAT 6A	SF/UTP	26	.220 (5.59)	
963-037	CAT 6A	SF/UTP	24	.260 (6.60)	
963-038	CAT 6A	SF/UTP	24	.270 (6.86)	

*Consult factory for use with other cable

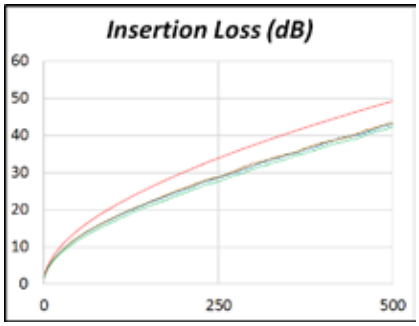
Hi-Speed HiPer-D® Connectors

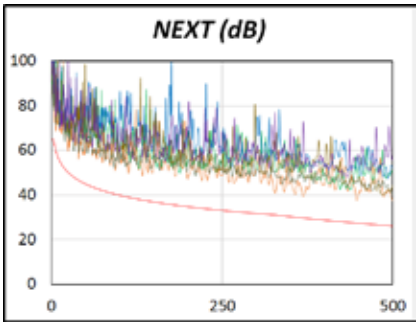
10GBase-T Cat 6A Compliance Testing Contacts

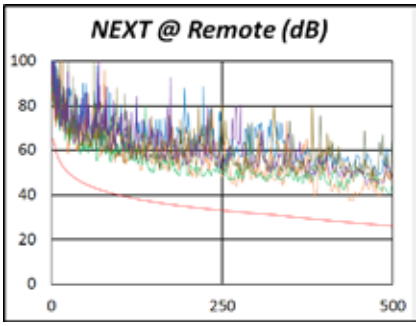


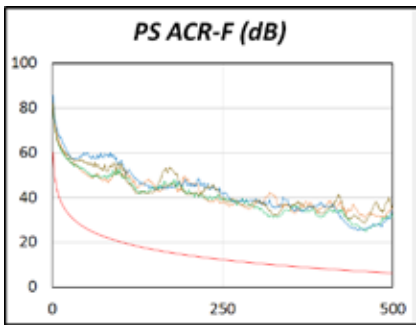
963-003-24 CABLE

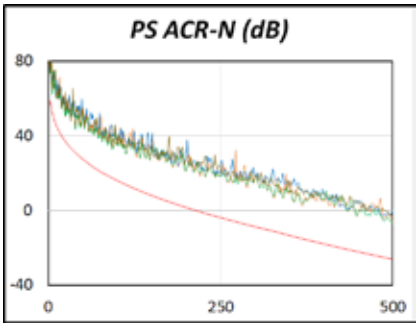
Testing was performed to assure compliance with TIA/EIA 568B Cat 6a requirements. 5 cordset segments were connected in a series for a combined length of 75m, with a total of six mated pair connectors utilizing SpeedMaster™ contacts. REF: Glenair Test Report GT-17-13

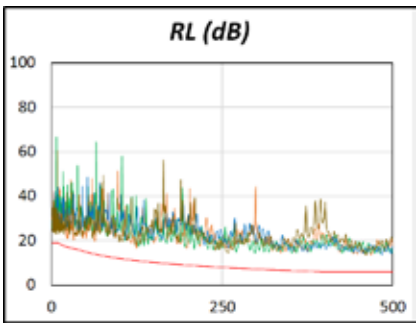


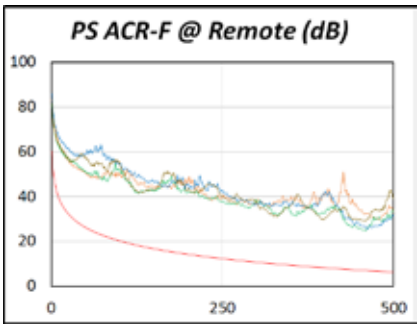


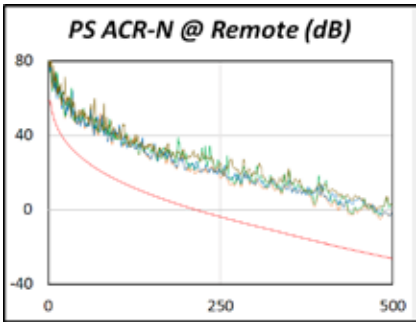


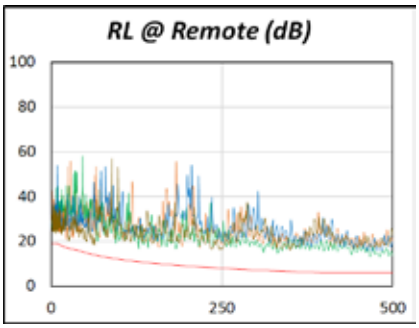












D

Hi-Speed HiPer-D® Connectors

280-101M plug or 280-098F receptacle, in-line connectors with SpeedMaster 10G contact modules

Part Number Development						
Sample Part Number	**280-101M**	**4**	**P**	**MT**	**N**	**-1**

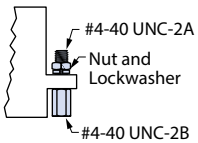
Series	**280-101M** = In-line cable plug **280-098F** = In-line cable receptacle
Cavity Count	**2** = 2 Cavities **4** = 4 Cavities
Module Type	**P** = Pin **S** = Socket
Material and Finish	**NF** = Aluminum alloy / Cadmium olive drab over electroless nickel **MT** = Aluminum alloy / nickel-PTFE **ME** = Aluminum alloy / electroless nickel **ZR** = Aluminum alloy / zinc nickel black RoHs compliant
Hardware Options	**N, P, L, K, S, T**
Cable Size	See cable size table

Cables*					
Cable P/N	**Cable Category**	**Cable Construction**	**Wire Gage**	**Cable Dia.**	**Assembly Instructions**
963-003-24	CAT 6A	SF/UTP	24	.280 (7.11)	AI85082
963-003-26	CAT 6A	SF/UTP	26	.220 (5.59)	
963-037	CAT 6A	SF/UTP	24	.260 (6.60)	
963-038	CAT 6A	SF/UTP	24	.270 (6.86)	

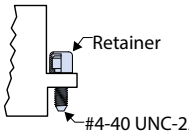
*Contact factory to inquire about use with other cables

Mating Hardware

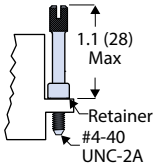
P — Female Jackpost



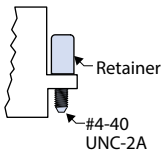
L — Captive Jackscrew, Hex Head, Low Profile



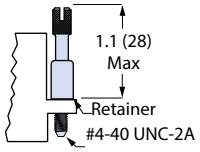
K — Slot-Head Extended Jackscrew



S — Captive Screwlock, Hex Head, Low Profile



T — Slot-Head Extended Length, Screwlock



Cable Size	
Cable Size	**Cable Diameter**
1	.280 (7.11)
2	.274 (6.96)
3	.260 (6.60)
4	.250 (6.35)
5	.240 (6.10)
6	.230 (5.84)
7	.220 (5.59)

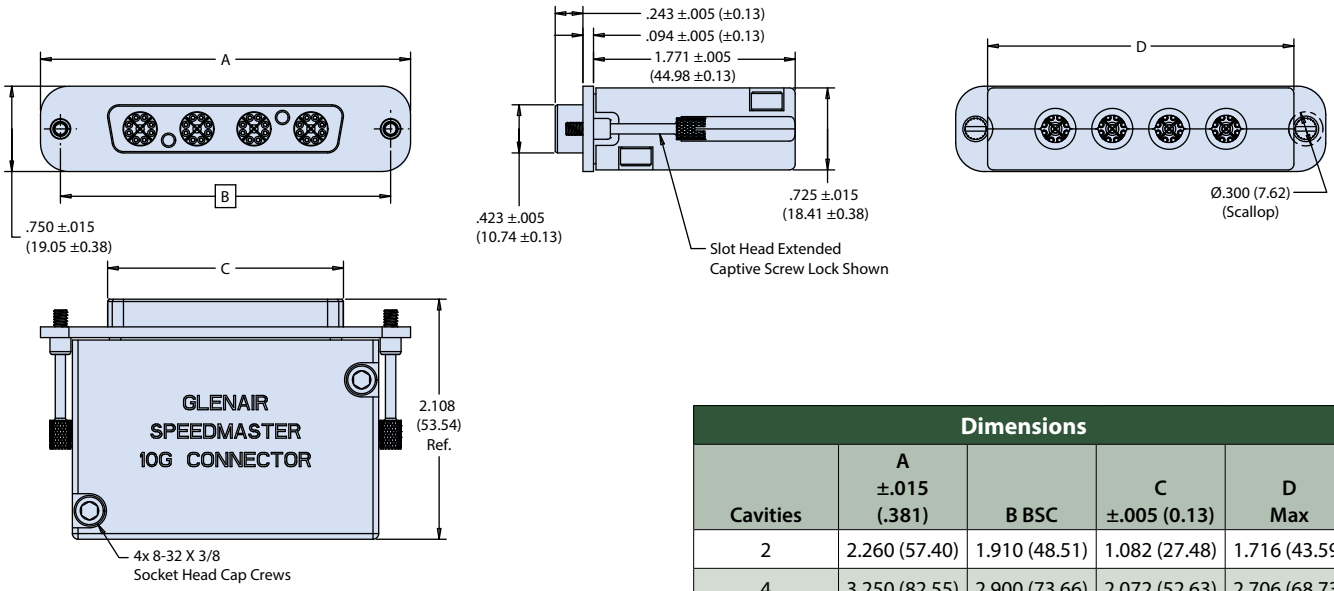
NOTES

1. Spare high-speed modules (858-100, 858-101) may be ordered separately. Module wrench tool (607-011) supplied with each connector.
2. See Assembly instructions AI 85082 for high-speed module terminations. See assembly instructions AI85089 for module installation.
3. See page 6 for SpeedMaster™ module inner contact pinout
4. For cables in-between sizes, select smaller size. Maximum cable diameter is .280 (7.11)
5. Material / Finish:
   - Shells: see part number development table
   - Hardware: stainless steel - passivated
   - Grounding spring: BeCu alloy / electroless nickel
   - Seals, o-ring: fluorosilicone blend / N.A.

Hi-Speed HiPer-D® Connectors

280-101M plug or 280-098F receptacle, in-line connectors with SpeedMaster 10G contact modules

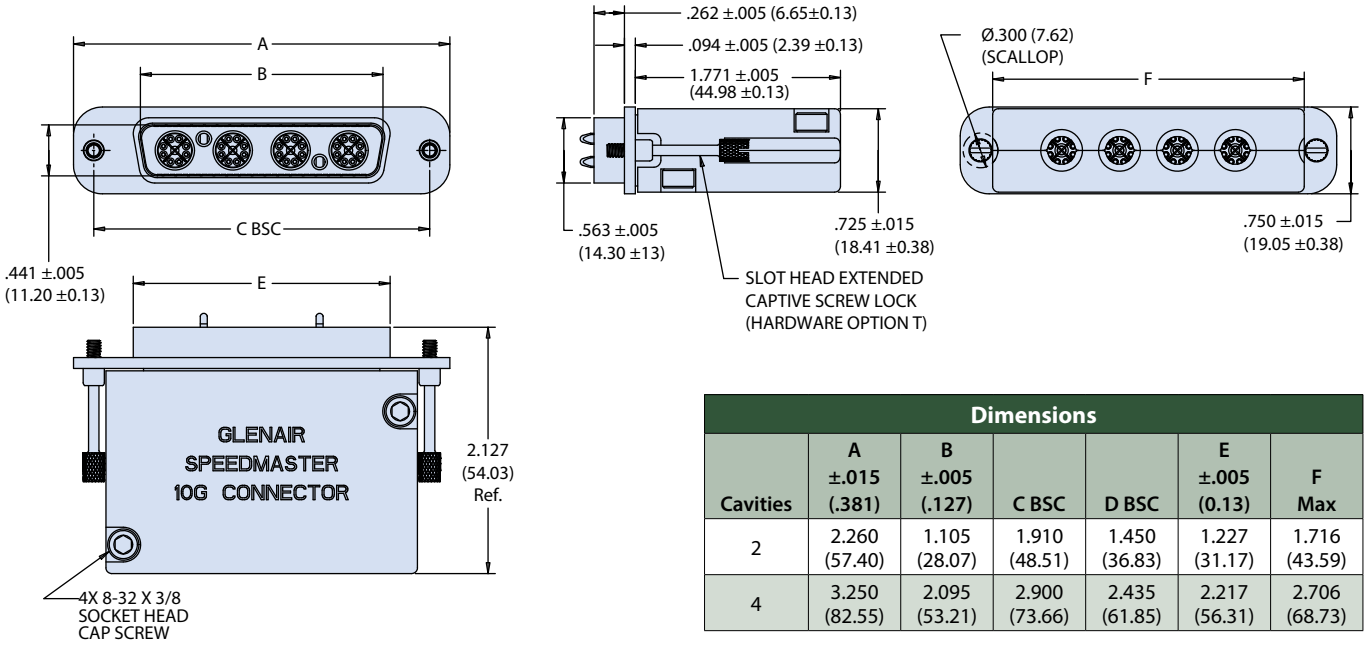
280-101 HIPER-D™ IN-LINE CONNECTOR, RECEPTACLE



Dimensions				
Cavities	A ±.015 (.381)	B BSC	C ±.005 (0.13)	D Max
2	2.260 (57.40)	1.910 (48.51)	1.082 (27.48)	1.716 (43.59)
4	3.250 (82.55)	2.900 (73.66)	2.072 (52.63)	2.706 (68.73)

D

280-098 HIPER-D™ IN-LINE CONNECTOR , PLUG



Dimensions						
Cavities	A ±.015 (.381)	B ±.005 (.127)	C BSC	D BSC	E ±.005 (0.13)	F Max
2	2.260 (57.40)	1.105 (28.07)	1.910 (48.51)	1.450 (36.83)	1.227 (31.17)	1.716 (43.59)
4	3.250 (82.55)	2.095 (53.21)	2.900 (73.66)	2.435 (61.85)	2.217 (56.31)	2.706 (68.73)

Dimensions in Inches (millimeters) are subject to change without notice.

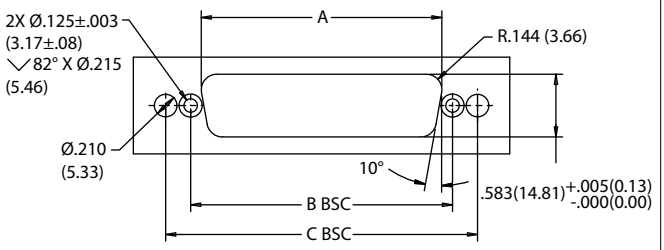
Hi-Speed HiPer-D® Connectors

280-102M plug or 280-099F receptacle, rear panel mount connectors with SpeedMaster 10G contact modules

Part Number Development						
Sample Part Number	**280-102M**	**4**	**P**	**MT**	**P**	**-1**

Series	**280-102M** = rear panel mount plug **280-099F** = rear panel mount receptacle
Cavity Count	**2** = 2 Cavities **4** = 4 Cavities
Module Type	**P** = Pin **S** = Socket
Material and Finish	**NF** = Aluminum alloy / Cadmium olive drab over electroless nickel **MT** = Aluminum alloy / nickel-PTFE **ME** = Aluminum alloy / electroless nickel **ZR** = Aluminum alloy / zinc nickel black RoHs compliant
Hardware Options	**P** = Female jackpost
Cable Size	See cable size table

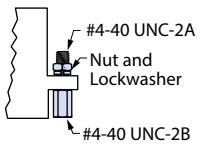
Panel Cut-Out Dimensions



Cavities	A +.005 (.13) -.000 (.00)	B BSC	C BSC
2	1.247 (31.67)	1.450 (36.83)	1.910 (48.51)
4	2.237 (56.82)	2.435 (61.85)	2.900 (73.66)

Mating Hardware

P
Female Jackpost



Cable Size

Cable Size	Cable Diameter
1	.280 (7.11)
2	.274 (6.96)
3	.260 (6.60)
4	.250 (6.35)
5	.240 (6.10)
6	.230 (5.84)
7	.220 (5.59)

Cables*

Cable P/N	Cable Category	Cable Construction	Wire Gage	Cable Dia.	Assembly Instructions
963-003-24	CAT 6A	SF/UTP	24	.280 (7.11)	AI85082
963-003-26	CAT 6A	SF/UTP	26	.220 (5.59)	
963-037	CAT 6A	SF/UTP	24	.260 (6.60)	
963-038	CAT 6A	SF/UTP	24	.270 (6.86)	

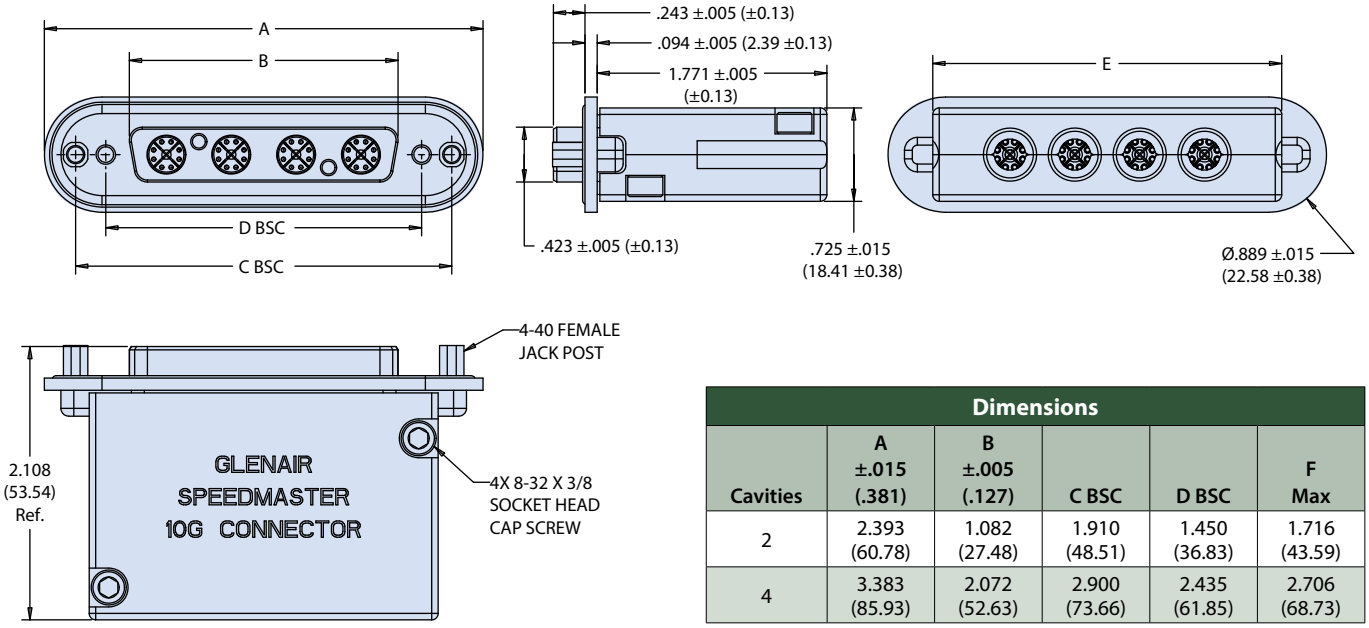
*Contact factory to inquire about use with other cables

NOTES

1. Spare high-speed modules (858-100, 858-101) may be ordered separately. Module wrench tool (607-011) supplied with each connector.
2. See Assembly instructions AI 85082 for high-speed module terminations. See assembly instructions AI85089 for module installation.
3. See page 6 for SpeedMaster™ module inner contact pinout
4. For cables in-between sizes, select smaller size. Maximum cable diameter is .280 (7.11)
5. Material / Finish:
   - Shells: part number development table
   - Hardware: stainless steel - passivated
   - Grounding spring: BeCu alloy / electroless nickel
   - Seals, o-ring: fluorosilicone blend / N.A.

280-102M plug or 280-099F receptacle, rear panel mount connectors with SpeedMaster 10G contact modules

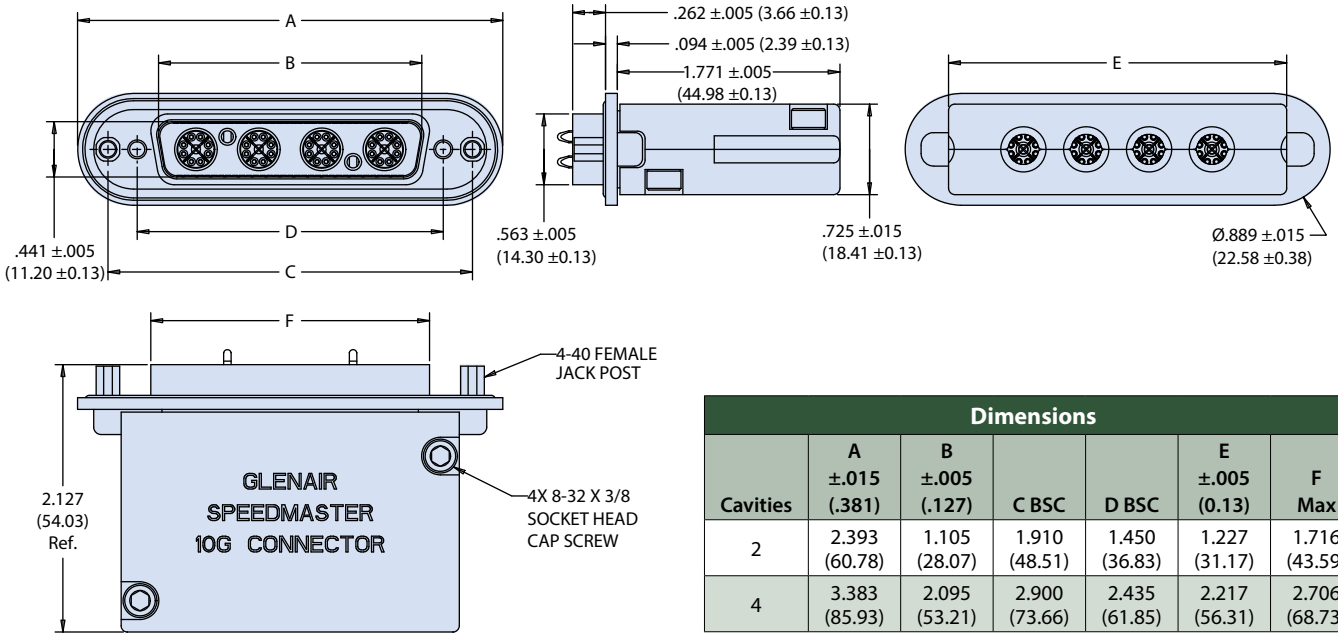
280-102 HIPER-D™ REAR PANEL MOUNT CONNECTOR , PLUG



Dimensions					
Cavities	A ±.015 (.381)	B ±.005 (.127)	C BSC	D BSC	F Max
2	2.393 (60.78)	1.082 (27.48)	1.910 (48.51)	1.450 (36.83)	1.716 (43.59)
4	3.383 (85.93)	2.072 (52.63)	2.900 (73.66)	2.435 (61.85)	2.706 (68.73)

D

280-099 HIPER-D™ REAR PANEL MOUNT CONNECTOR, RECEPTACLE



Dimensions						
Cavities	A ±.015 (.381)	B ±.005 (.127)	C BSC	D BSC	E ±.005 (0.13)	F Max
2	2.393 (60.78)	1.105 (28.07)	1.910 (48.51)	1.450 (36.83)	1.227 (31.17)	1.716 (43.59)
4	3.383 (85.93)	2.095 (53.21)	2.900 (73.66)	2.435 (61.85)	2.217 (56.31)	2.706 (68.73)

Dimensions in Inches (millimeters) are subject to change without notice.

Hi-Speed HiPer-D® Connectors

280-103M plug or 280-100F receptacle, float mount connectors with SpeedMaster 10G contact modules

Part Number Development						
Sample Part Number	**280-103M**	**4**	**P**	**MT**	**N**	**-1**

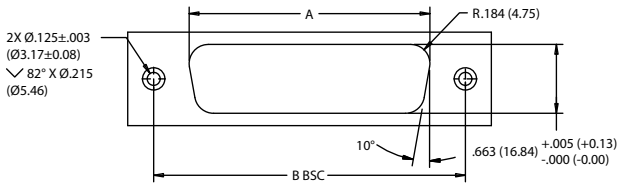
Series	**280-103M** = Float mount plug **280-100F** = Float mount receptacle
Cavity Count	**2** = 2 Cavities **4** = 4 Cavities
Module Type	**P** = Pin **S** = Socket
Material and Finish	**NF** = Aluminum alloy / Cadmium olive drab over electroless nickel **MT** = Aluminum alloy / nickel-PTFE **ME** = Aluminum alloy / electroless nickel **ZR** = Aluminum alloy / zinc nickel black RoHs compliant
Hardware Options	**N** = No hardware
Cable Size	See cable size table

Cable Size	
Cable Size	**Cable Diameter**
1	.280 (7.11)
2	.274 (6.96)
3	.260 (6.60)
4	.250 (6.35)
5	.240 (6.10)
6	.230 (5.84)
7	.220 (5.59)

Cables*					
Cable P/N	**Cable Category**	**Cable Construction**	**Wire Gage**	**Cable Dia.**	**Assembly Instructions**
963-003-24	CAT 6A	SF/UTP	24	.280 (7.11)	AI85082
963-003-26	CAT 6A	SF/UTP	26	.220 (5.59)	
963-037	CAT 6A	SF/UTP	24	.260 (6.60)	
963-038	CAT 6A	SF/UTP	24	.270 (6.86)	

*Contact factory to inquire about use with other cables

Panel Cut-Out Dimensions



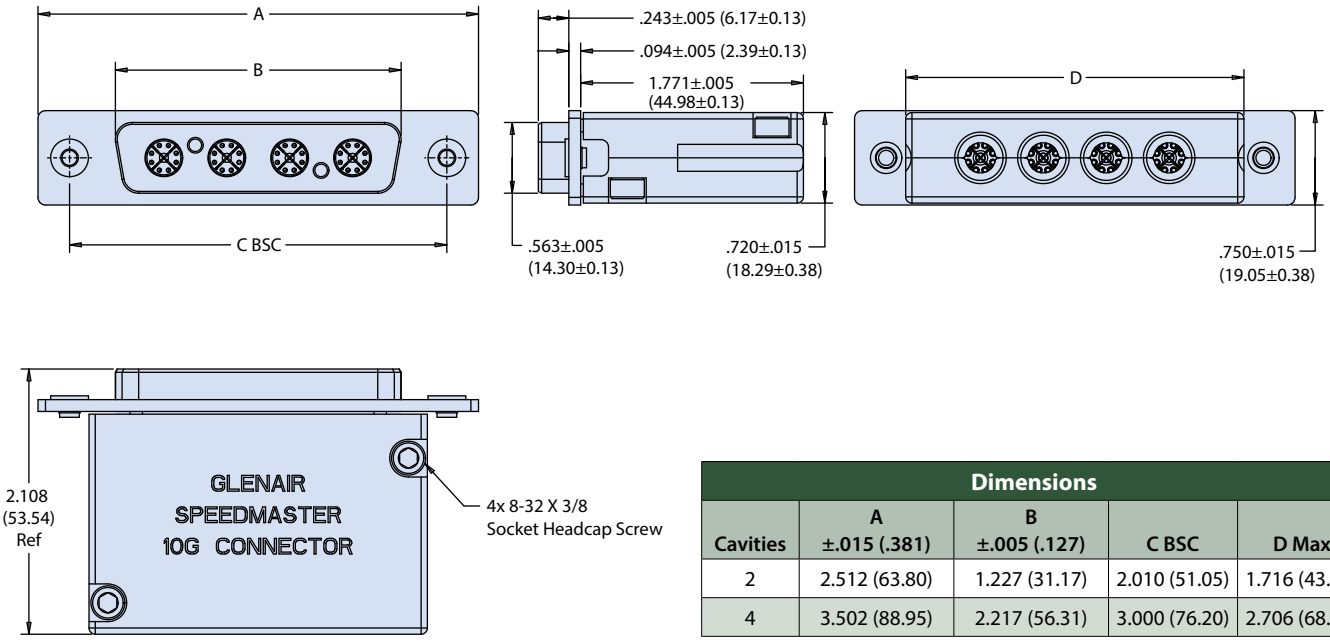
Cavities	A +.005 (+0.13) -.000 (-.00)	B BSC
2	1.327 (33.71)	2.010 (51.05)
4	2.317 (58.85)	3.000 (76.20)

NOTES

1. Spare high-speed modules (858-100, 858-101) may be ordered separately. Module wrench tool (607-011) supplied with each connector.
2. See Assembly instructions AI 85082 for high-speed module terminations. See assembly instructions AI85089 for module installation.
3. See page 6 for SpeedMaster™ module inner contact pinout
4. For cables in-between sizes, select smaller size. Maximum cable diameter is .280 (7.11)
5. Material / Finish:
   - Shells: part number development table
   - Hardware: stainless steel - passivated
   - Grounding spring: BeCu alloy / electroless nickel
   - Seals, o-ring: fluorosilicone blend / N.A.

280-103M plug or 280-100F receptacle, float mount connectors with SpeedMaster 10G contact modules

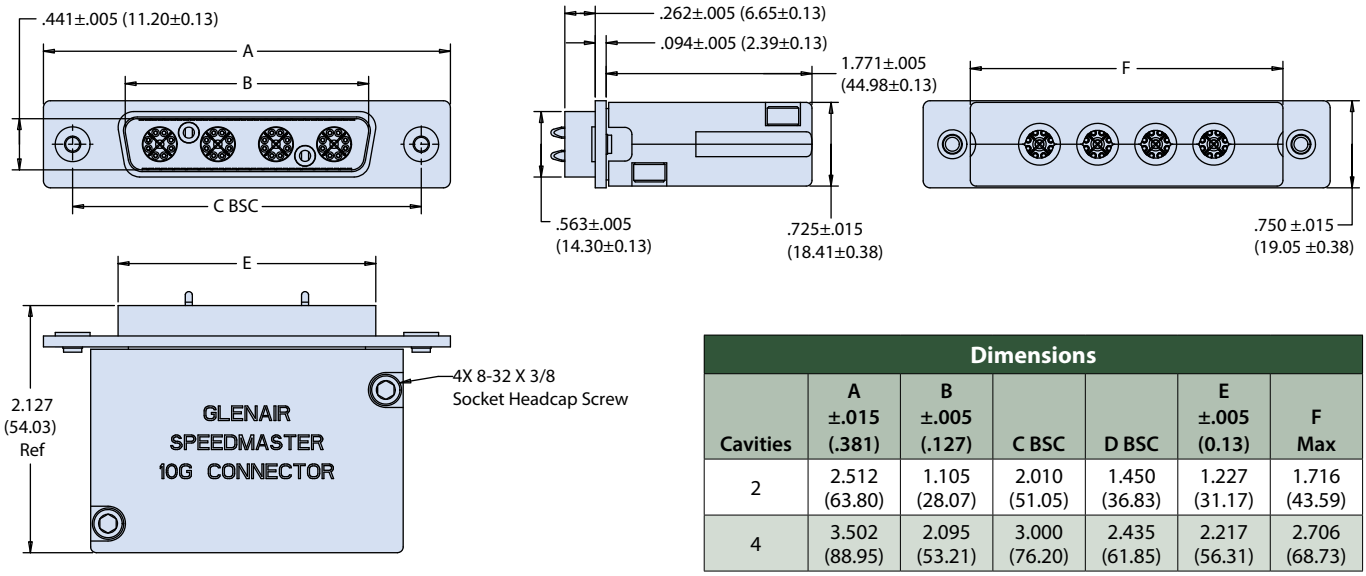
280-103 HIPER-D™ FLOAT MOUNT CONNECTOR , PLUG



Dimensions				
Cavities	A ±.015 (.381)	B ±.005 (.127)	C BSC	D Max
2	2.512 (63.80)	1.227 (31.17)	2.010 (51.05)	1.716 (43.59)
4	3.502 (88.95)	2.217 (56.31)	3.000 (76.20)	2.706 (68.73)

D

280-100 HIPER-D™ FLOAT MOUNT CONNECTOR, RECEPTACLE



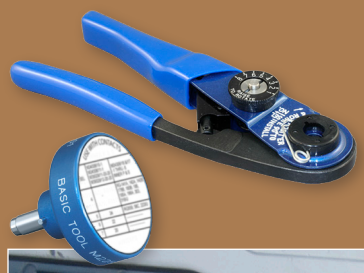
Dimensions						
Cavities	A ±.015 (.381)	B ±.005 (.127)	C BSC	D BSC	E ±.005 (0.13)	F Max
2	2.512 (63.80)	1.105 (28.07)	2.010 (51.05)	1.450 (36.83)	1.227 (31.17)	1.716 (43.59)
4	3.502 (88.95)	2.095 (53.21)	3.000 (76.20)	2.435 (61.85)	2.217 (56.31)	2.706 (68.73)

Dimensions in Inches (millimeters) are subject to change without notice.

SERIES 28
CONTACTS AND CRIMP TOOLS

HiPer-D Accessories

Installation and removal tools for size #8 high-speed data and size #20 signal and power contacts



Glenair offers Mil-Spec M24308 rectangular connector compliant contacts and the tools neccessary to properly terminate, maintain, and replace them. Our high availablity business model ensures contacts are always in stock, helping you avoid costly equipment downtime – with no dollar or quantity minimums. In addition to the broadest selection and availability, Glenair also delivers outstanding interconnection compatibility. Glenair QPL SAEAS39029 contacts are guaranteed to mate properly and perform at the upper limits of application and specification requirements.

Glenair, Inc.
1211 Air Way
Glendale, CA 91201-2497
818-247-6000
sales@glenair.com
www.glenair.com

SERIES 28

HiPer-D® Contacts and Tools

Product Selection Guide

#20 Contacts E-2

Crimp contacts for standard HiPer-D® connectors

#22 Contacts E-3

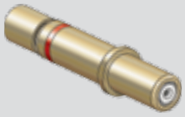
Crimp contacts for high density HiPer-D® connectors

#8 Power Contacts for Combo HiPer-D® E-4

Crimp contacts for AWG #12 and #16 wire

50 Ohm Coax Contacts for Combo HiPer-D® E-5

Size #8 50 ohm coax contacts for RG316 and RG178 cable



75 Ohm Coax Contacts and Cable for Combo HiPer-D® E-6

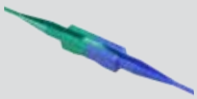
75 ohm coax contacts for RG179, RS170 and SMPTE 292M applications

High Frequency 50 Ohm Coax Contacts for Combo HiPer-D® E-8

50 ohm coax contacts for M17/133-RG405 equivalent flexible cable

Crimp Tools E-9

Crimp tools for terminating #20, #22 and #8 power and #8 coax contacts

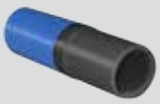


Contact Insertion and Removal Tools E-10

Plastic tools for inserting and extracting #8, #20 and #22 contacts

Grommet Sealing Plugs E-10

MS27488 hole filler plugs for unused connector cavities



Sealing Boot E-10

Sealing boot for #8 combo HiPer-D® contacts

E

HiPer-D® Contacts and Tools

#20 crimp contacts for standard HiPer-D® connectors

#20 CRIMP CONTACTS

Fig. 1
Pin Contact

Fig. 2
Socket Contact

#20 contacts accept #20 to #24 AWG wire. These gold-plated copper alloy contacts meet the requirements of SAE AS39029. Use with all Series 28 HiPer-D® crimp connectors with size #20 cavities.

Contact Type	Fig.	Wire Size	Part Number	M39029 Part Number
Pin	*1*	#20-24	**850-022-20-369**	**M39029/64-369**
Socket	*2*	#20-24	**850-021-20-368**	**M39029/63-368**

Material and Finish

Copper alloy, 50 microinches gold plated per ASTM B488 Type II Code C Class 1,27 over nickel plate per QQ-N-290 Class 2, 50-150 microinches.
Socket contact hood: 305 CRES, passivated.

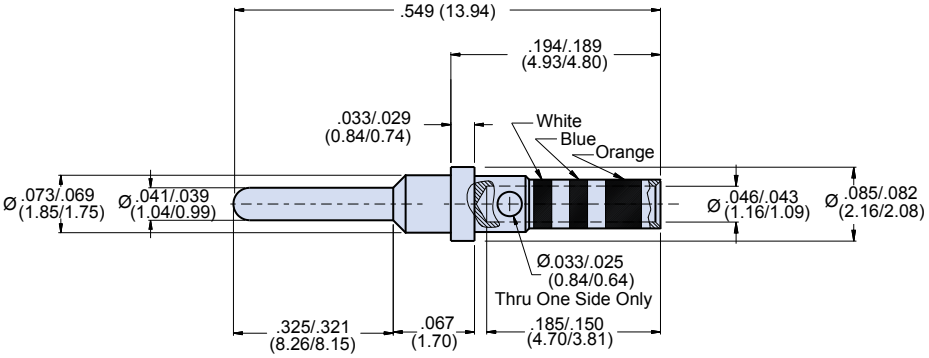
Specifications

AWG Wire Accommodation: #20 - #24
Current Rating: 7.5 Amps maximum
Voltage Drop (at 7.5 Amps and 25° C, #20AWG silver-plated wire): 55 millivolts maximum
Temperature Range: -65° to + 200° C.
Socket Min. Separation Force : 0.7 ounces
See SAE AS39029 for additional electrical, mechanical and environmental specifications.

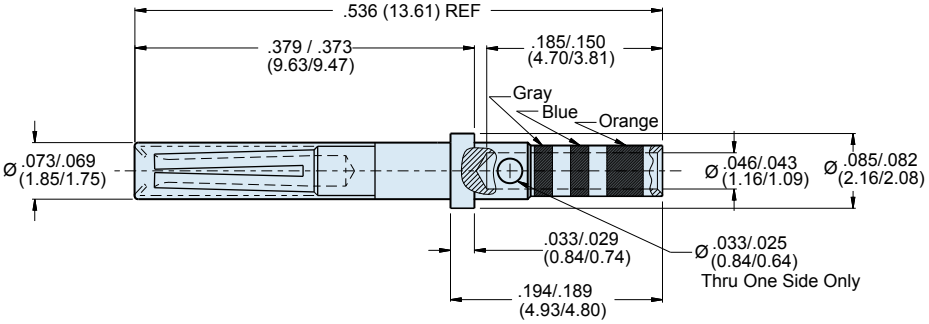
Crimp Tools and Insertion/ Removal Tools

Crimper: 809-015 (M22520/2-01)
Positioner: 859-016 (M22520/2-08)
Insertion/Removal Tool: 859-017 (M81969/39-01)

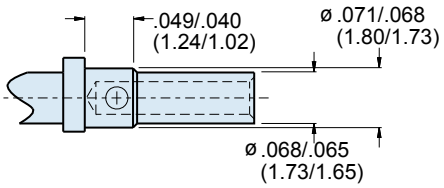
Crimp Tensile Strength		
Axial load in minimum pounds.		
Wire Gage	Silver or Tin Coated Copper Wire	Nickel Coated Copper Wire
#20	20	19
#22	12	8
#24	8	6



Pin Contact



Socket Contact



Pin and Socket Crimp Barrel Dimensions

#22 CRIMP CONTACTS

Fig. 1
Pin Contact

Fig. 2
Socket Contact

Material and Finish

Copper alloy, 50 microinches gold plated per ASTM B488 Type II Code C Class 1,27 over nickel plate per QQ-N-290 Class 2, 50-150 microinches.
Socket contact hood: 305 CRES, passivated.

Specifications

AWG Wire Accommodation: #22 - #28
Current Rating: 5 Amps maximum
Voltage Drop (at 5 Amps and 25° C, #22 AWG silver-plated wire): 73 mV. maximum
Temperature Range: -65° to + 200° C.
Socket Minimum Sep. Force: 0.7 ounces
See SAE AS39029 for additional electrical, mechanical and environmental specifications.

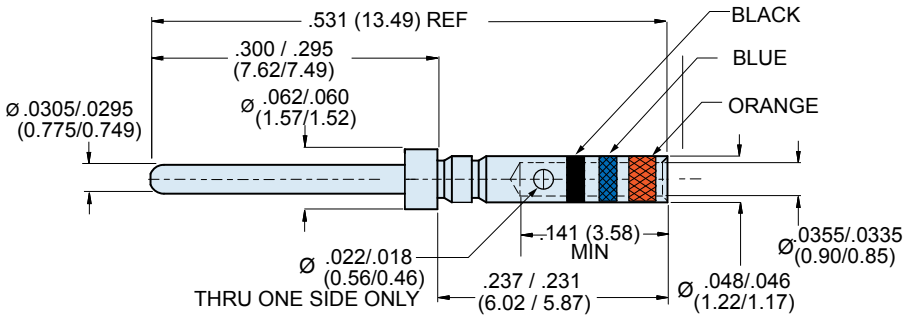
Crimp Tools and Insertion/ Removal Tools

Crimper: 809-015 (M22520/2-01)
Positioner: Pin 859-018 (M22520/2-09)
Socket 859-019 (M22520/2-06)
Insertion/Removal Tool:
859-020 (M81969/14-01)

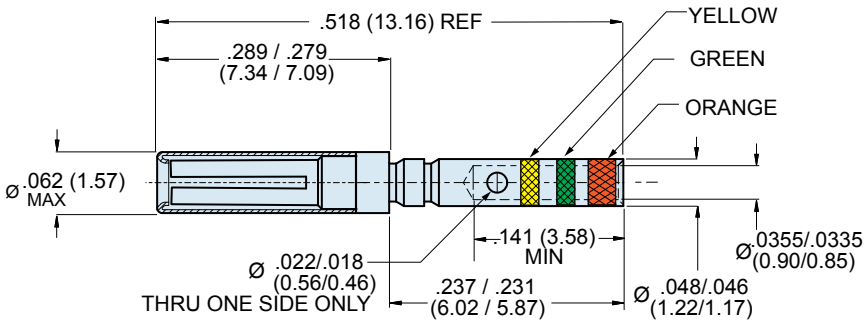
Crimp Tensile Strength		
Axial load in minimum pounds.		
Wire Gage	**Silver or Tin Coated Copper Wire**	**Nickel Coated Copper Wire**
#22	12	8
#24	8	6
#26	5	3
#28	3	2

#22 contacts accept #22 to #28 AWG wire. These gold-plated copper alloy contacts meet the requirements of SAE AS39029. Use with all Series 28 HiPer-D® crimp connectors with size #22 cavities.

Contact Type	Fig.	Wire Size	Part Number	M39029 Part Number
Pin	*1*	#22-28	850-002-22-360	M39029/58-360
Socket	*2*	#22-28	850-003-22-354	M39029/57-354



Pin Contact



Socket Contact

E

HiPer-D® Contacts and Tools

#8 power contacts for combo HiPer-D® connectors

#8 POWER CONTACTS FOR COMBO HIPER-D CONNECTORS

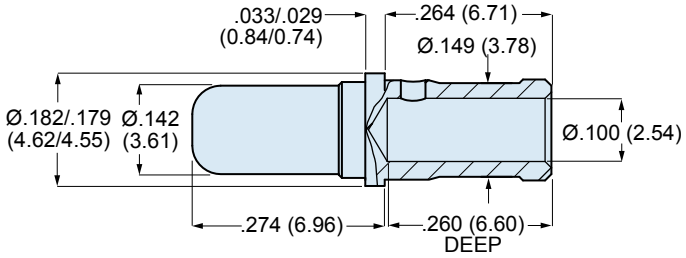
These size #8 contacts snap into Glenair combo HiPer-D® size #8 cavities and can be removed with a plastic extraction tool. Crimp termination. Two sizes are available, #0812 for AWG 12-14 wire, and #0816 for AWG 16-18 wire. Gold plated copper alloy, 1000 VAC DWV rating, 23 amp current rating. Optional sealing boot prevents moisture ingress. ***Intermateable with standard D-Subminiature size #8 power contacts.***

Fig. 1
Pin Contact
850-056

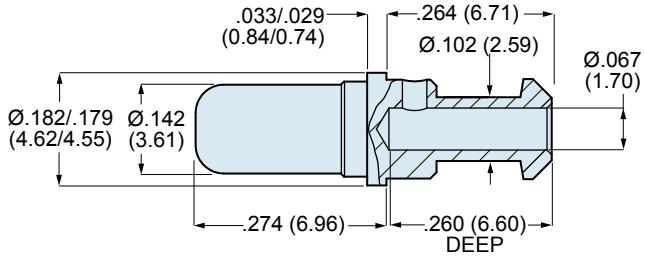
Fig. 2
Socket Contact
850-057

Fig.	Contact Type	AWG Wire Size	Part Number Contact Only	Part Number Contact and Sealing Boot
1	Pin	#12, #14	850-056-0812	850-056-0812F
		#16, #18	850-056-0816	850-056-0816F
2	Socket	#12, #14	850-057-0812	850-057-0812F
		#16, #18	850-057-0816	850-057-0816F

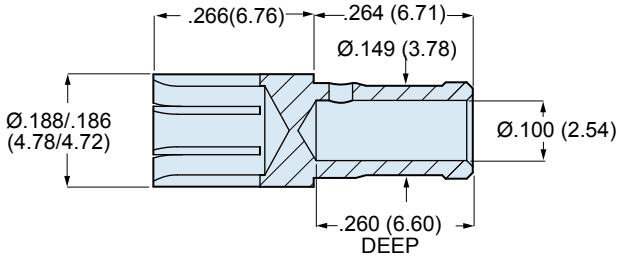
Pin Contact
850-056-0812



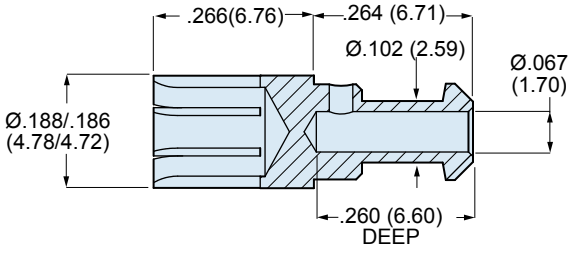
Pin Contact
850-056-0816



Socket Contact
850-057-0812



Socket Contact
850-057-0816



Material and Finish

Contact: Copper alloy, 50 microinches gold over nickel.

Sealing Boot: Thermoplastic and Fluorosilicone

Specifications

Current Rating: 23 Amps
Contact Resistance: 10 milliohms
Crimp Tensile Strength: AS39029 Table 10
Temperature Range: -65° to + 200° C.

Tools

Crimp Tool: 859-081 (Daniels M309)
Positioner for Crimp Tool: 859-083 (Daniels TP1711
Insertion/Extraction Tool: 809-132 (M81969/14-04)

E

50 OHM COAX CONTACTS FOR COMBO HIPER-D CONNECTORS

These coax contacts snap into Glenair combo HiPer-D® size #8 cavities and can be removed with a plastic extraction tool. Crimp termination. 50 ohm nominal impedance, DC - 3GHz frequency range. Gold plated copper alloy, Teflon® dielectric. 1000 VAC DWV rating, 5 Amp current rating. Optional sealing boot prevents moisture ingress. ***Intermateable with standard D-Subminiature size #8 socket coaxial contacts.***

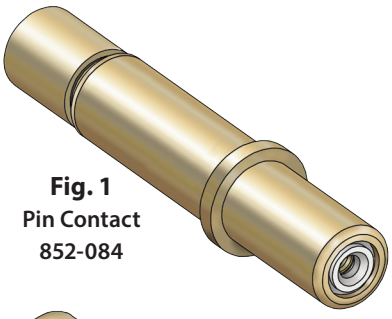


Fig. 1
Pin Contact
852-084

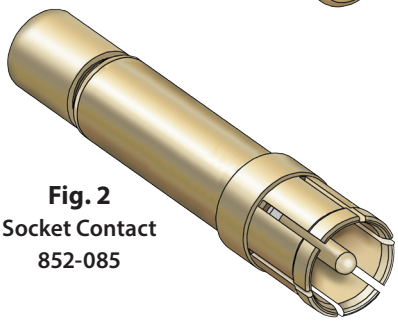


Fig. 2
Socket Contact
852-085

Fig.	Contact Type	Cable Accommodation	Part Number Contact Only	Part Number Contact and Sealing Boot
1	Pin	M17/113-RG316	852-084-01	852-084-01F
		M17/93-RG178	852-084-02	852-084-02F
		M17/152-00001 (RG316DS)	852-084-03	852-084-03F
2	Socket	M17/113-RG316	852-085-01	852-085-01F
		M17/93-RG178	852-085-02	852-085-02F
		M17/152-00001 (RG316DS)	852-085-03	852-085-03F

Material and Finish

Contact and Crimp Sleeve: Copper alloy, 50 microinches gold over nickel.

Dielectric: Teflon®

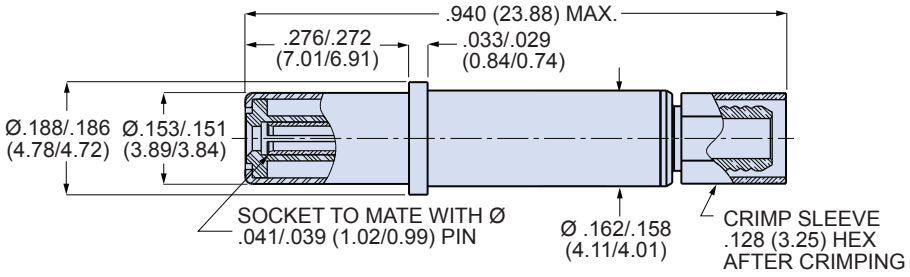
Sealing Boot: Thermoplastic and Fluorosilicone

Specifications

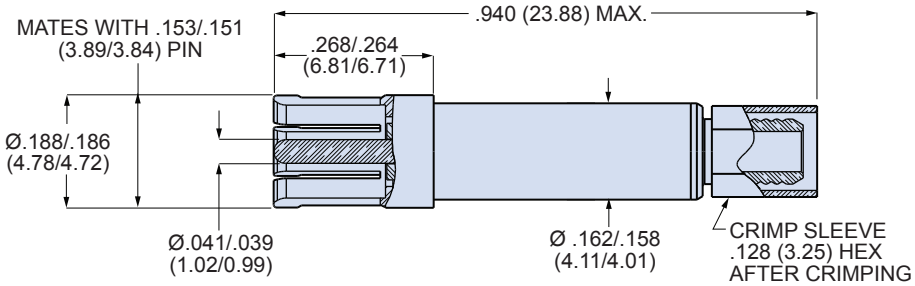
Impedance: 50 ohms
Frequency: DC – 3GHz
Current Rating: 5 Amps maximum
Contact Resistance: 10 milliohms
Temperature Range: -65° to + 200° C.
Dielectric Withstanding Voltage: 1000 VAC
Insulation Resistance: 5 gigohms

Tools

Crimp Tool for Inner Contact: 809-015 (M22520/2-01, Daniels AFM8)
Inner Contact Positioner: 859-099 (Daniels K264)
Hex Crimp Tool for Cable Shield: 809-129 (M22520/5-01, Daniels HX4)
Hex Die Set: 809-130 (M22520/5-03)
Insertion/Extraction Tool: 809-132 (M81969/14-04)



Pin Contact
852-084



Socket Contact
852-085

E

75 OHM COAX CONTACTS

Fig. 1
Pin Contact
852-086

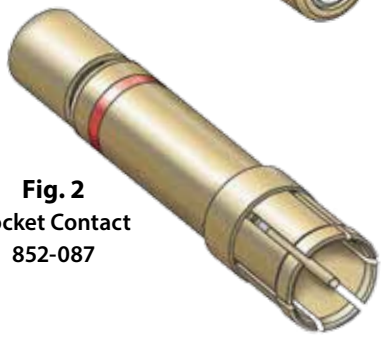
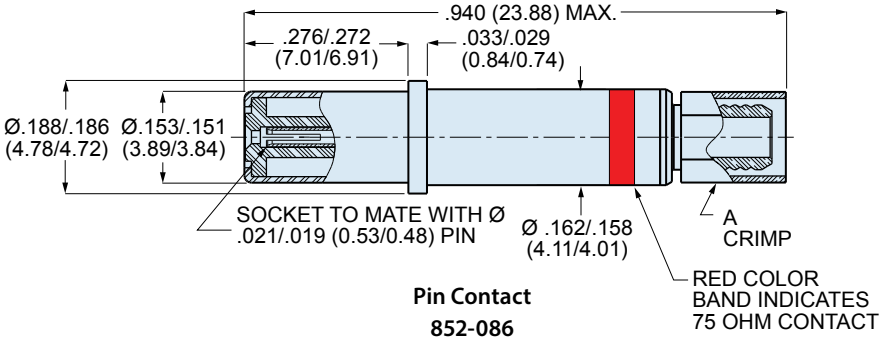


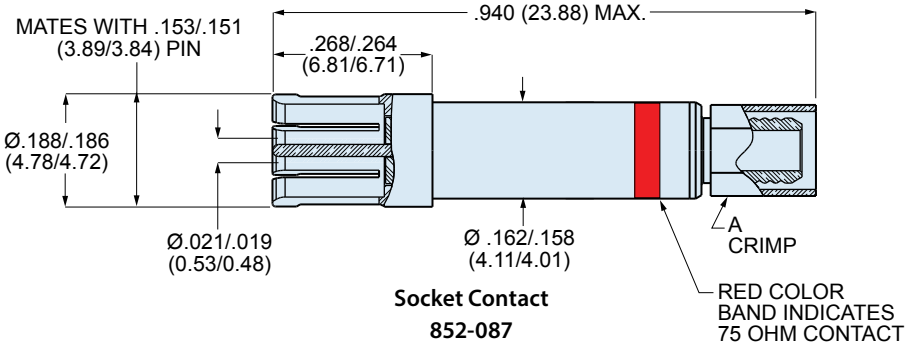
Fig. 2
Socket Contact
852-087

These coax contacts snap into Glenair combo HiPer-D® size #8 cavities and can be removed with a plastic extraction tool. Crimp termination. 75 ohm nominal impedance, DC - 3GHz frequency range. Use with RG179 coax cable or high bandwidth PIC cable for RS170 or SMPTE 292M video. Gold plated copper alloy, fluoropolymer dielectric. 1000 VAC DWV rating, 3 amp current rating. Optional sealing boot prevents moisture ingress. ***These contacts are designed for use only with Glenair Combo HiPer-D® connectors and cannot be installed in other connectors.***

Fig.	Contact Type	Cable Accommodation	Part Number Contact Only	Part Number Contact and Sealing Boot	A Crimp Size	
					In.	mm.
1	Pin	M17/964-RG179	852-086-01	852-086-01F	.128 Hex	3.25 Hex
		PIC™ V75268, V76261, V73263	852-086-02	852-086-02F	Ø.156	Ø3.96
2	Socket	M17/964-RG179	852-087-01	852-087-01F	.128 Hex	3.25 Hex
		PIC™ V75268, V76261, V73263	852-087-02	852-087-02F	Ø.156	Ø3.96



Pin Contact
852-086



Socket Contact
852-087

Material and Finish

Contact and Crimp Sleeve: Copper alloy, 50 microinches gold over nickel.

Dielectric: Fluoropolymer

Sealing Boot: Thermoplastic and Fluorosilicone

Specifications

Impedance: 75 ohms
Frequency: DC – 3GHz
Current Rating: 3 amps maximum
Contact Resistance: 10 milliohms
Temperature Range: -65° to + 200° C.
Dielectric Withstanding Voltage: 1000 VAC
Insulation Resistance: 5 gigohms

Insertion/Extraction Tool

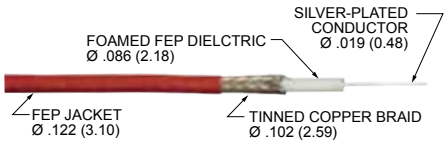
Part Number
809-132 (M81969/14-04)

TOOLING INFORMATION FOR 75 OHM CONTACTS

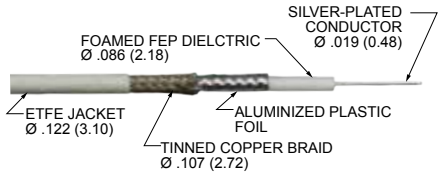
Part Number	Type	Inner Contact Tooling		Shield Crimp Sleeve Tooling	
		Crimp Tool	Positioner	Crimp Tool	Positioner
852-086-01	PIN	809-015 (M22520/2-01)	859-098	809-129	809-130
852-086-02	PIN			809-133	859-100
852-087-01	SOCKET			809-129	809-130
852-087-02	SOCKET			809-133	859-100

75 OHM HIGH PERFORMANCE COAXIAL CABLE

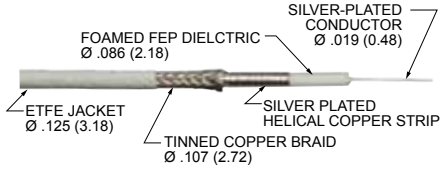
PIC™ brand video cable is specially designed and manufactured for reliable performance in aircraft systems and other harsh environments involving high temperature, EMI and corrosive materials. Improved strength, lower attenuation and better shielding compared with M17/94-RG179. Silver-plated conductor, foamed FEP dielectric, tinned copper braid, FEP or ETFE jacket. Skydrol resistant, RoHS compliant, meets FAA FAR Parts 23 and 25, Appendix F flammability, complies with MIL-DTL-17.



1 75 ohm coaxial cable for RS170 video applications. 50 dB shielding effectiveness. Tinned copper braid shield. Red FEP jacket.



2 75 ohm coaxial cable for RS170 video applications. 90 dB shielding effectiveness. 100% coverage aluminized plastic foil under tinned copper braid shield. ETFE jacket, white.



3 75 ohm coaxial cable for SMPTE 292M video applications. 110 dB shielding effectiveness. 100% coverage helical copper strip under tinned copper braid shield. ETFE jacket, white.

	Cable 1		Cable 2		Cable 3	
Glenair Part No.	960-130		960-131		960-132	
Ref. PIC™ Part No.	V75268		V76261		V73263	
Impedance (ohms)	75		***75***		***75***	
Shielding Effectiveness (dB)	50		90		110	
Video Application	RS170		RS170		SMPTE 292M	
First Shield	Tinned copper braid, 95% coverage					
Second Shield	None		Aluminized film, 100% coverage		Silver plated helical copper strip, 100%	
Temperature Rating	-55° to +150° C		-55° to +150° C		-55° to +150° C	
Minimum Bend Radius	0.6 in. (15mm.)		0.6 in. (15mm.)		0.65 in. (16.5mm.)	
Weight (lbs/100 ft.)	1.2 lbs		1.1 lbs		1.5 lbs	
Capacitance (pF/ft)	16.0		16.0		16.0	
Velocity of Propagation %	80		80		80	
Time Delay	1.28		1.28		1.28	
Attenuation (dB/100 ft)	**Nominal**	**Max**	**Nominal**	**Max**	**Nominal**	**Max**
1 MHz	0.51	0.55	0.49	0.52	0.43	0.58
10 MHz	1.70	1.77	1.6	1.71	1.4	1.6
100 MHz	5.3	5.7	5.1	5.5	4.5	5.0
400 MHz	11.1	11.8	10.6	11.3	9.6	10.6
1.45 GHz	23.0	24.6	21.9	23.4	20.0	22.0
3 GHz	35.0	37.4	33.7	36.1	30.9	34.0

E

HiPer-D® Contacts and Tools

50 ohm coaxial contacts for RG405 type flexible cable

50 OHM COAXIAL CONTACTS FOR RG405 TYPE FLEXIBLE CABLE

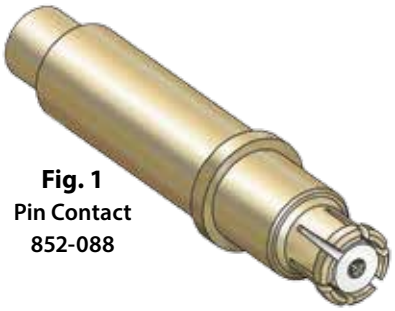


Fig. 1
Pin Contact
852-088

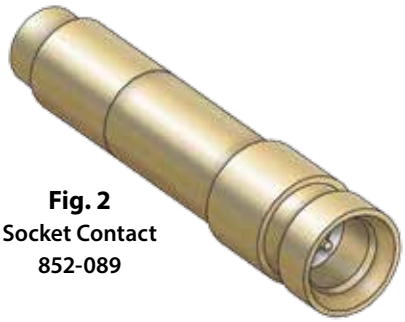
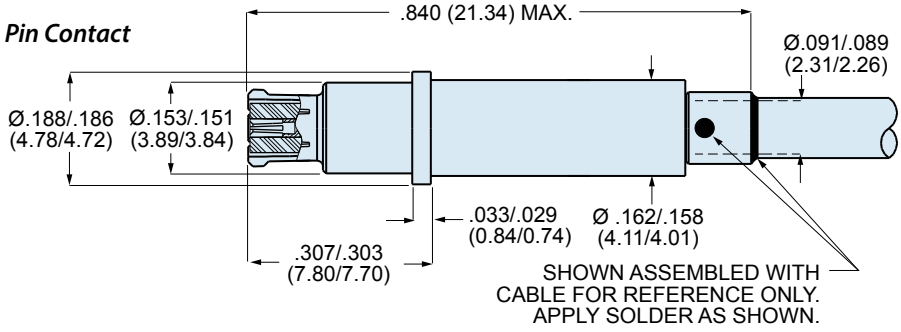
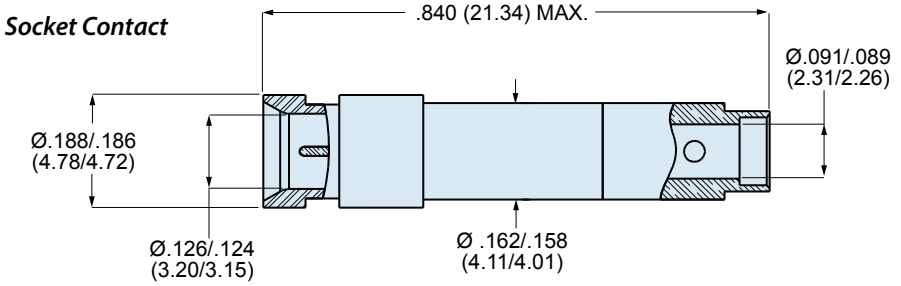


Fig. 2
Socket Contact
852-089

These coax contacts snap into Glenair combo HiPer-D® size #8 cavities and can be removed with a plastic extraction tool. Solder termination. 50 ohm nominal impedance, DC -18GHz frequency range. Use with LLF-1087 (Tensolite) or TFlex-405 (Times Microwave) coax cables. Gold plated copper alloy, fluoropolymer® dielectric. 1000 VAC DWV rating. Optional sealing boot prevents moisture ingress. ***These contacts are designed for use only with Glenair Combo HiPer-D® connectors and cannot be installed in other connectors.***

Fig.	Contact Type	Cable Accommodation	Part Number Contact Only	Part Number Contact and Sealing Boot
1	Pin	LLF-1087 (Tensolite), TFlex-405 (Times Microwave)	852-088-01	852-088-01F
2	Socket	LLF-1087 (Tensolite), TFlex-405 (Times Microwave)	852-089-01	852-089-01F





Material and Finish

Body andContact: Copper alloy, 50 microinches gold over nickel.

Dielectric: PTFE

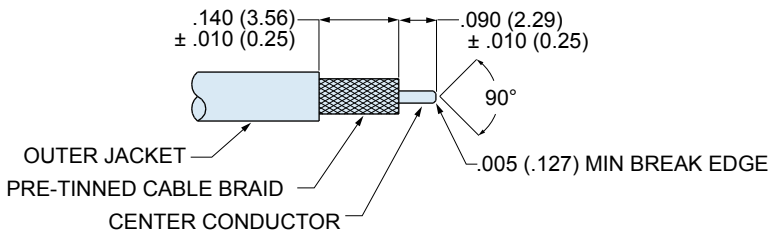
Cable Insert: Brass, 50 microinches gold over nickel.

Sealing Boot: Thermoplastic and Fluorosilicone

Specifications

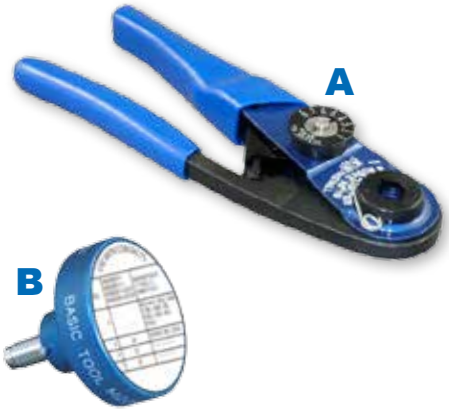
Impedance: 50 ohms
Frequency: DC – 18 GHz
VSWR: 1.10 + (.01 X Freq GHz)
Insertion Loss: .06 X SQRT(Freq GHz)
RF Leakage: -(90 - Freq GHz)
Temperature Range: -65° to + 200° C.
Dielectric Withstanding Voltage: 1000 VAC
Insulation Resistance: 5 gigohms
Mechanical Durability: 500 Mating Cycles
Center Contact Retention: 2 lbs. min.
Maximum Engaging Force: 2.5 lbs.
Minimum Separation Force: 0.5 lbs.

ASSEMBLY INSTRUCTIONS



1. Slide sealing boot onto coaxial cable.
2. Strip cable as shown.
3. Pre-tin cable braid.
4. Break edge of center conductor as shown.
5. Push cable into contact body. Center conductor should be seated into center contact.
6. Solder cable braid to contact body as shown in Pin Contact illustration above.
7. Snap assembled contact into connector and slide sealing boot into place.

CRIMP TOOL FOR STANDARD HIPER-D® CONTACTS AND COAXIAL INNER CONTACTS



Precision mil spec crimp tool performs precision eight indent crimps for gas-tight wire terminations and excellent tensile strength. Adjustment wheel has 8 settings. Ratchet mechanism prevents improper crimps. Use with bayonet-type positioners, ordered separately. Check calibration with M22520/3 gages. Length is 6.75 inches, weight is approx. 10 oz.

Fig.	Descrip.	Application	Part Number	Military Part Number	Daniels Part Number (1)
A	Crimp Tool		809-015	M22520/2-01	AFM8
B	Positioner	#20 contacts	859-016	M22520/2-08	K13-1
B	Positioner	#22 pin contact	859-018	M22520/2-09	K42
B	Positioner	#22 socket contact	859-019	M22520/2-06	K41
B	Positioner	75 ohm contact	859-098	None	K1539
B	Positioner	50 ohm contact	859-099	None	K264

CRIMP TOOL FOR SIZE #8 POWER HIPER-D® CONTACTS

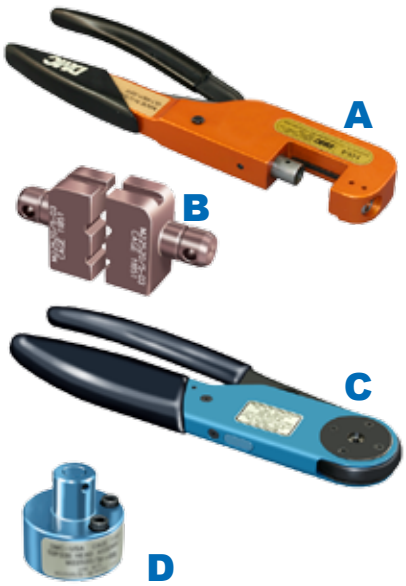
Heavy-duty M309 crimp tool for AWG size 8 to 18 wire. Adjustment wheel has 8 settings. Double action ratchet mechanism prevents improper crimps. Use with positioner, ordered separately.

A M309 crimper. Use with size #8 combo HiPer-D® contacts. Length is 9.75 inches, weight is 15 oz.

B TP1711 Positioner for use with M309 tool. Use with part number 850-056 and 850-057 size #8 power contacts.

Figure	Description	Part Number	Daniels Part Number (1)
A	Crimp Tool	859-081	M309
B	Positioner	859-083	TP1711

CRIMP TOOL FOR TERMINATING COAXIAL SHIELD CRIMP SLEEVE



A Parallel action tool for use with hex crimp dies. 11 inches OAL, 2.0 pounds. Anodized aluminum frame, steel mechanism, plastic handles. Includes tool for die set removal. Accepts all M22520/5 die sets.

B M22520/5-03 hex die set for terminating coaxial shield to outer body of coaxial contact. Set consists of upper and lower halves. Made of hardened steel with black oxide finish. Die set has two closures: .105 (2.67) hex across flats and .128 (3.25).

C Ratcheting crimp tool for terminating coaxial shield crimp sleeve. Use with 75 ohm contacts 852-086-02 and 852-087-02. 9.75 inches OAL, 1.25 pounds.

D Positioner for use with 809-133 crimper. Use with 75 ohm contacts 852-086-02 and 852-087-02.

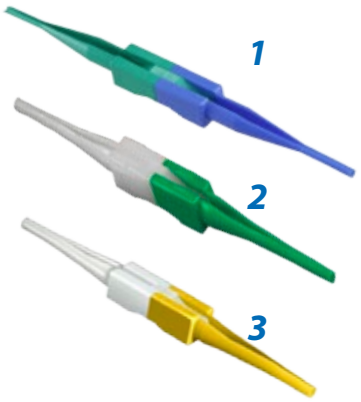
Ref. Coaxial Contact Part Number	Fig.	Descrip.	Part Number	Military Part Number	Daniels Part Number (1)
852-084, 852-085, 852-086-01, 852-087-01	A	Crimp Tool	809-129	M22520/5-01	HX4
	B	Hex Die Set	809-130	M22520/5-03	Y196
852-086-02 852-087-02	C	Crimp Tool	809-133	M22520/31-1	GS200-1
	D	Positioner	859-100	None	G2P1743

(1) Daniels Manufacturing Corporation, Orlando, Florida is the industry-leading supplier of mil spec contact termination tooling. In addition to the tools shown in this catalog, the Daniels product line includes a complete range of installation tools and semi-automatic equipment.

HiPer-D® Contacts and Tools

Contact insertion and removal tools, sealing plugs, sealing boot

CONTACT INSERTION AND REMOVAL TOOLS



1 Insertion/Extraction Tool for #20 contacts. This plastic tool features green insertion tip and blue extraction tip.

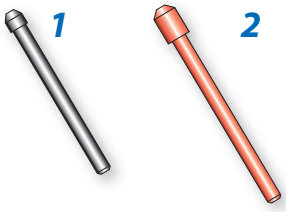
2 Insertion/Extraction Tool for #22 contacts. This plastic tool features green insertion tip and white extraction tip.

3 Insertion/Extraction Tool for #8 Combo HiPer-D® contacts. This plastic tool features yellow insertion tip and white extraction tip.

Figure	Size	Part Number	Military Part Number
1	#20	809-203D	(none)
2	#22	859-020	M81969/14-01
3	#12*	809-132	M81969/14-04

*Size 12 tool fits Combo HiPer-D® size #8 connectors and contacts

GROMMET SEALING PLUGS FOR SIZE #22 AND #20HD CONNECTORS



Grommet sealing plugs are used to seal unwired contact cavities. These plugs conform to MS27488 requirements. After installing unwired contacts into unused cavities, insert knob end of sealing plug into grommet until it bottoms against the unwired contact per illustration. Install sealing plugs with standard contact insertion/extraction tools .

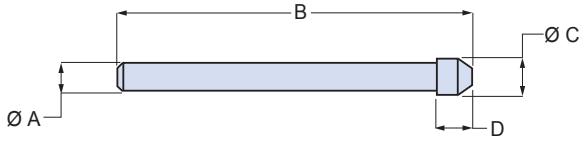
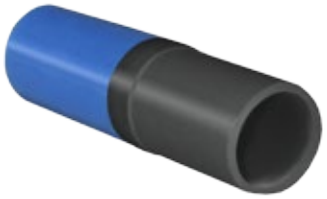


Fig.	Size	Color	Part Number	Military Part Number	Insertion/ Removal Tool	A Ref.		B Ref.		C Ref.		D Ref.	
						in.	mm	in.	mm	in.	mm	in.	mm
1	#22	Black	859-021	MS27488-22-2	859-020	.042	1.07	.51	13.0	.062	1.57	.125	3.18
2	#20	Red	859-012	MS27488-20-2	809-203D	.053	1.35	.82	20.8	.085	2.16	.125	3.18

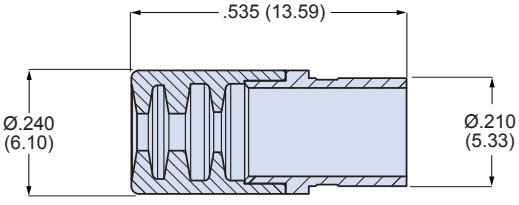
E

SEALING BOOT FOR COMBO HIPER-D



Sealing boot prevents moisture and contamination from entering combo HiPer-D® connectors. Slide onto wire before terminating contact. Install contact into connector, then slide sealing boot into connector grommet. Fluorosilicone grommet, thermoset epoxy follower. -65°C to +200°C.

Wire Dia. (in.)	Wire Dia. (mm.)	Part Number
.050 - .090	1.27 - 2.29	859-093-01
.090 - .130	2.29 - 3.30	859-093-02
.130 - .170	3.30 - 4.32	859-093-03



SERIES 28

HiPer-D® Accessories

Product Selection Guide

Protective Covers F-2

Metal covers with lanyard attachments

Conductive Dust Caps F-4

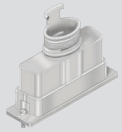
ESD protected black plastic dust caps

Low Profile EMI Banding Backshell for HiPer-D® Cable Connectors F-5

Two piece backshell fits into groove on HiPer-D® cable connector shell

Environmental EMI Banding Backshell for HiPer-D® Cable Connectors F-8

One piece backshell for HiPer-D® cable connectors



Environmental EMI Banding Backshell for Panel Mount Connectors F-11

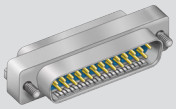
One piece backshell attaches directly to panel mount HiPer-D® connectors

Jackpost Kits F-15

#4-40 stainless steel jackposts

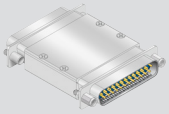
Guide Pins, Bushings and Jackposts F-16

Blind mate and locking hardware for panel mount HiPer-D® connectors



Sav-Con® Connector Savers F-17

Standard and high density connector savers



Gender Changers F-19

M-M and F-F gender changers

Band-Master Tool and Bands F-20

Terminate cable braid with precision banding tool

"Full Nelson" Elliptical Heatshrink Boots F-21

Specially designed boots fit HiPer-D® backshells with large elliptical cable entries

F

HiPer-D® Accessories

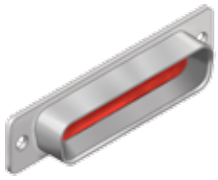
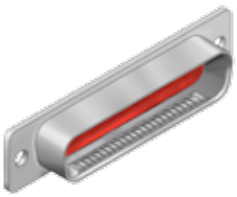
Protective Covers for HiPer-D® connectors

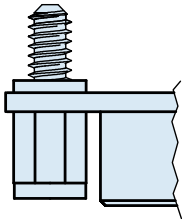
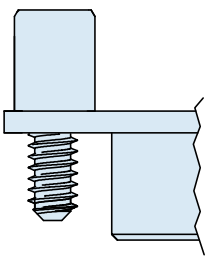
289-003, 289-004, 289-019

HIPER-D® PROTECTIVE COVERS

289-003
289-019
289-004

Aluminum or stainless steel protective covers fit Glenair Series 28 HiPer-D® connectors and MIL-DTL-24308 connectors. Cover for pin connector fits inside connector shell and seats on connector face seal for watertight protection. Cover for socket connector fits over connector shell and has rubber gasket. Attach to panel with optional stainless steel lanyard and ring terminal.

Protective Cover Types		
Pin Cover	**Socket Cover**	**Socket Cover w/ EMI Spring**
		
Fig. 1 Cover for use with HiPer-D® pin connectors. Part number 289-003.	***Fig. 2*** Cover for use with HiPer-D® socket connectors. Supplied without EMI spring. Fluorosilicone rubber gasket. Part number 289-019.	***Fig. 3*** Cover for use with HiPer-D® socket connectors. Supplied with EMI spring. Fluorosilicone rubber gasket. Part number 289-004.

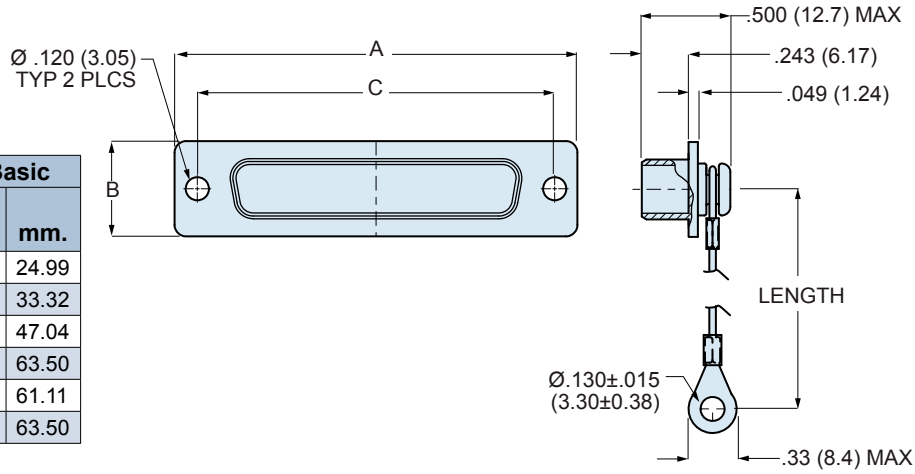
Hardware Options
 ***Fig. 4*** **Female Jackposts (P)** #4-40 Thread Stainless Steel
 ***Fig. 5*** **Male Screwlocks (S)** #4-40 Thread Stainless Steel

Ordering Information						
Sample Part Number	**289-003**	**2**	**Z2**	**P**	**F**	**4**
Basic Part Number	**289-003** = Pin Connector Cover (*Fig. 1*) **289-019** = Socket Connector Cover (*Fig. 2*) **289-004** = Socket Connector Cover w/ EMI Spring (*Fig. 3*)					
Shell Size	**1** = Shell Size 1 **2** = Shell Size 2 **3** = Shell Size 3 **4** = Shell Size 4 **5** = Shell Size 5 **6** = Shell Size 6					
Finish	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **JF** = Cadmium with Yellow Chromate **Z2** = Gold (RoHS) **Z1** = Passivated Stainless Steel (RoHS)					
Hardware	**N** = No Hardware **P** = #4-40 Stainless Steel Jackposts (*Fig. 4*) **S** = Captive SST Hex Head Male Screwlocks (*Fig. 5*)					
Lanyard Type	**N** = No Attachment **F** = Nylon-Coated SST Lanyard w/ Ring Terminal **H** = Fluoropolymer-Coated SST Lanyard w/ Ring Terminal					
Lanyard Length	(Omit for No Attachment) Length in Inches					

F

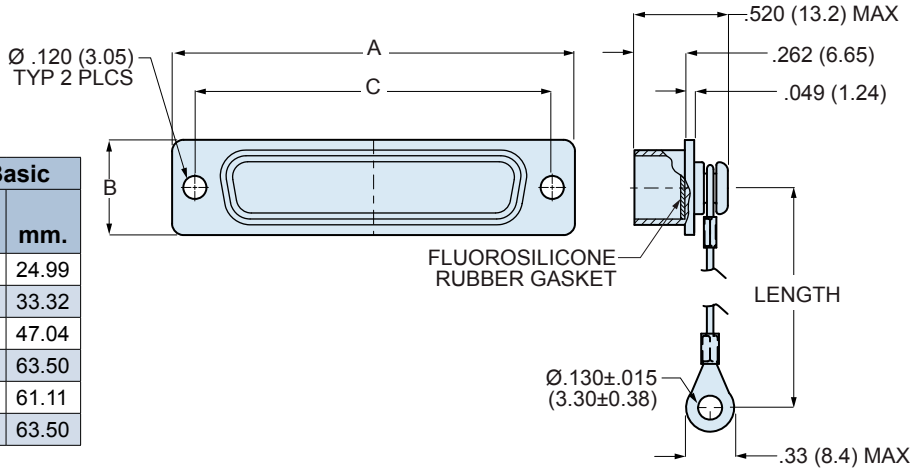
289-003 DIMENSIONS

Shell Size	A		B		C Basic	
	In . ± .015	mm. ± 0.38	In . ± .015	mm. ± 0.38	In.	mm.
1	1.213	30.81	.494	12.55	.984	24.99
2	1.541	39.14	.494	12.55	1.312	33.32
3	2.088	53.04	.494	12.55	1.852	47.04
4	2.729	69.32	.494	12.55	2.500	63.50
5	2.635	66.93	.605	15.37	2.406	61.11
6	2.729	69.32	.668	16.97	2.500	63.50



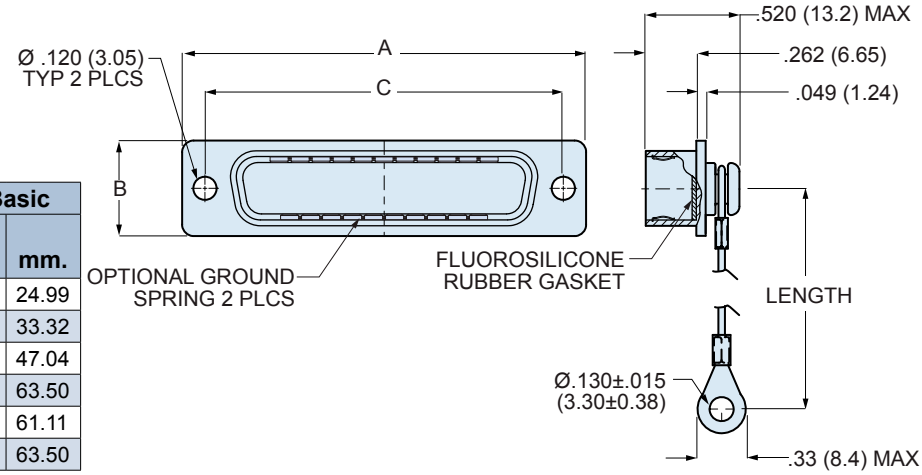
289-019 DIMENSIONS

Shell Size	A		B		C Basic	
	In . ± .015	mm. ± 0.38	In . ± .015	mm. ± 0.38	In.	mm.
1	1.213	30.81	.494	12.55	.984	24.99
2	1.541	39.14	.494	12.55	1.312	33.32
3	2.088	53.04	.494	12.55	1.852	47.04
4	2.729	69.32	.494	12.55	2.500	63.50
5	2.635	66.93	.605	15.37	2.406	61.11
6	2.729	69.32	.668	16.97	2.500	63.50



289-004 DIMENSIONS

Shell Size	A		B		C Basic	
	In . ± .015	mm. ± 0.38	In . ± .015	mm. ± 0.38	In.	mm.
1	1.213	30.81	.494	12.55	.984	24.99
2	1.541	39.14	.494	12.55	1.312	33.32
3	2.088	53.04	.494	12.55	1.852	47.04
4	2.729	69.32	.494	12.55	2.500	63.50
5	2.635	66.93	.605	15.37	2.406	61.11
6	2.729	69.32	.668	16.97	2.500	63.50

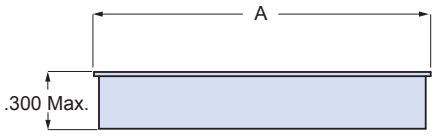


F

Conductive dust caps for HiPer-D® connectors

289-052

CONDUCTIVE DUST CAPS



Black plastic conductive dust caps fit HiPer-D® and M24308-type D-subminiature connectors. Molded in conductive polyethylene copolymer (EVA), these caps provide electrostatic discharge protection to sensitive equipment. 140ºF maximum service temperature. These caps meet the static decay requirement of MIL-PRF-81705. Surface resistivity is less than 1 x 10^5 ohms/square. Integral lip allows easy removal.

Conductive Dust Caps						
Shell Size	Type	Part Number	A Max.		B Max.	
			In.	mm.	In.	mm.
1	Pin	289-052-1-P	.826	20.98	.489	12.42
	Socket	289-052-1-S				
2	Pin	289-052-2-P	1.154	29.31	.489	12.42
	Socket	289-052-2-S				
3	Pin	289-052-3-P	1.694	43.03	.489	12.42
	Socket	289-052-3-S				
4	Pin	289-052-4-P	2.342	59.49	.489	12.42
	Socket	289-052-4-S				
5	Pin	289-052-5-P	2.239	56.87	.601	15.27
	Socket	289-052-5-S				
6	Pin	289-052-6-P	2.372	60.25	.663	16.84
	Socket	289-052-6-S				

F

HiPer-D® Accessories

Low-Profile EMI Backshell, two-piece, elliptical entry, non-environmental

289T005 top entry, 289S005 side entry

289T005
289S005

Lightweight, low profile space-saving two piece backshell fits securely into groove in HiPer-D® connectors. Fits standard HiPer-D® pin and socket connectors (280-018P, 280-019S) and Combo HiPer-D® connectors (280-046P and 280-047S). Terminate cable shield with optional Band-Master™ATS clamping band. Elliptical cable entry provides room for large wire bundles. Machined aluminum alloy or stainless steel backshell consists of two interlocking housings and two 300 series stainless steel screws. Overlapping seam improves EMI shielding performance. Compatible with Glenair Series 77 lipped heat-shrink boots. Non-environmental.

Entry Style

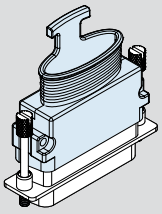


Fig. 1
Top Entry 289T005

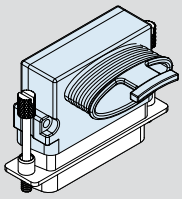


Fig. 2
Side Entry 289S005

Qwik Ty™ Option

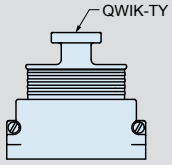


Fig. 3
Qwik Ty™

Slot Option

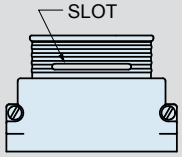


Fig. 4
Slots

Cable Entry Direction

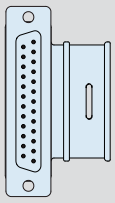


Fig. 5
Long Side Entry (1)

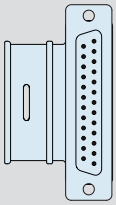
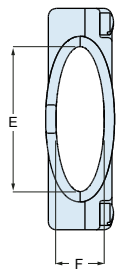


Fig. 6
Short Side Entry (2)

Ordering Information

Sample Part Number	289T005	MT	3	B	- N	N	K	
Basic Part Number	**289T005** = Top Entry (*Fig. 1*) **289S005** = Side Entry (*Fig. 2*)							
Finish	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **JF** = Cadmium with Yellow Chromate **Z2** = Gold (RoHS) **Z1** = Passivated Stainless Steel (RoHS)							
Shell Size	**1** = Shell Size 1 **2** = Shell Size 2 **3** = Shell Size 3 **4** = Shell Size 4 **5** = Shell Size 5 **6** = Shell Size 6							
Entry Size	**A, B, C or D** See Cable Entry Size Table Below							
Qwik Ty™ Option	**N** = Supplied without Qwik Ty™ **T** = With Qwik Ty™ Strain Relief (*Fig. 3*)							
Slot Option	**N** = Supplied without Slots **S** = With Slots for Terminating Individual Shields (*Fig. 4*)							
EMI/RFI Band	**N** = Supplied without Band **K** = Supplied with Pre-Coiled Band (600-052-1)							
Cable Entry Direction	***Omit for 289T005. Applies only to 289S005.*** **1** = Cable Exit on Long Side of Shell Keystone (*Fig. 5*) **2** = Cable Exit on Short Side of Shell Keystone (*Fig. 6*)							

Cable Entry Size



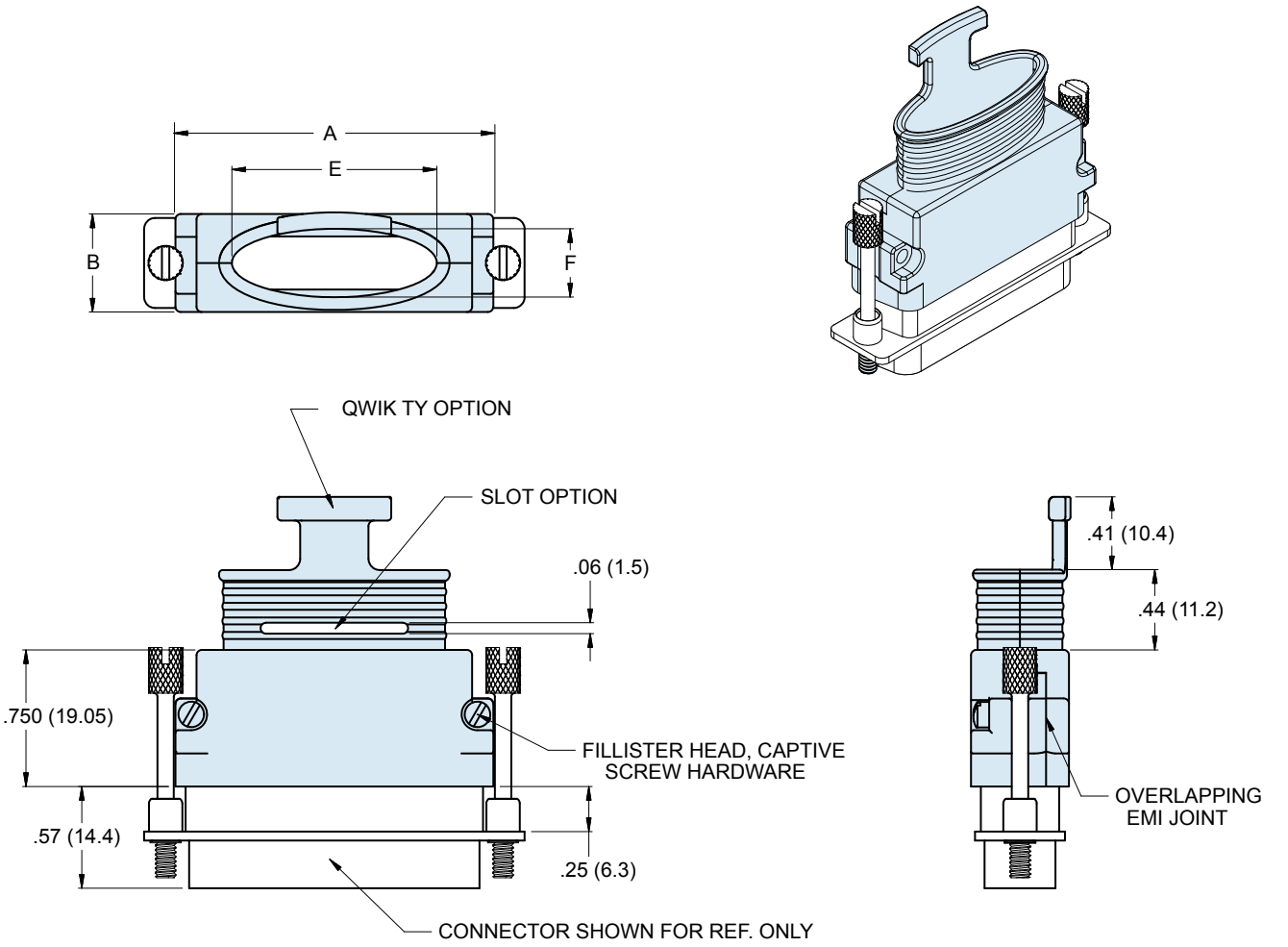
Shell Size	SIZE A				SIZE B				SIZE C				SIZE D			
	E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

F

Low-Profile EMI Backshell, two-piece, elliptical entry, non-environmental

289T005 top entry

289T005 DIMENSIONS



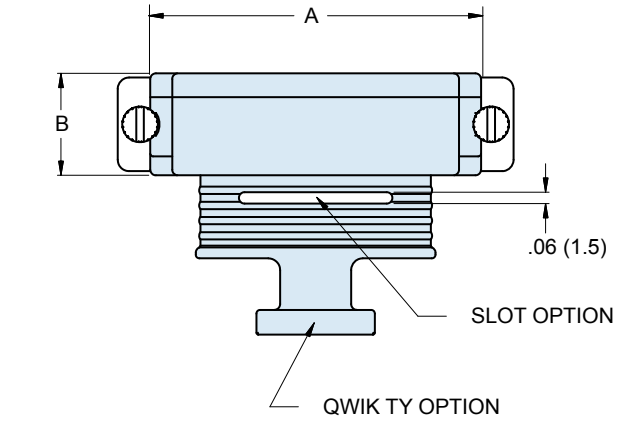
F

Shell Size	Dimensions																			
					Entry Size A				Entry Size B				Entry Size C				Entry Size D			
	A Max		B Max		E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	.894	22.71	.550	13.97	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.218	30.94	.550	13.97	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	1.760	44.70	.550	13.97	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.408	61.16	.550	13.97	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.297	58.34	.654	16.61	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.422	61.52	.716	18.19	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

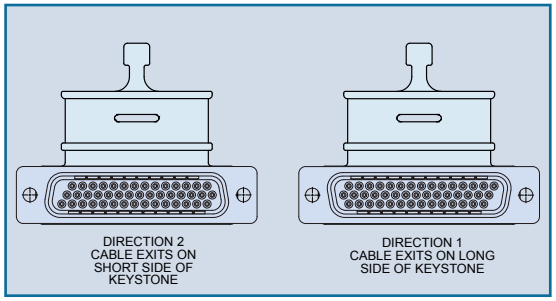
Low-Profile EMI Backshell, two-piece, elliptical entry, non-environmental

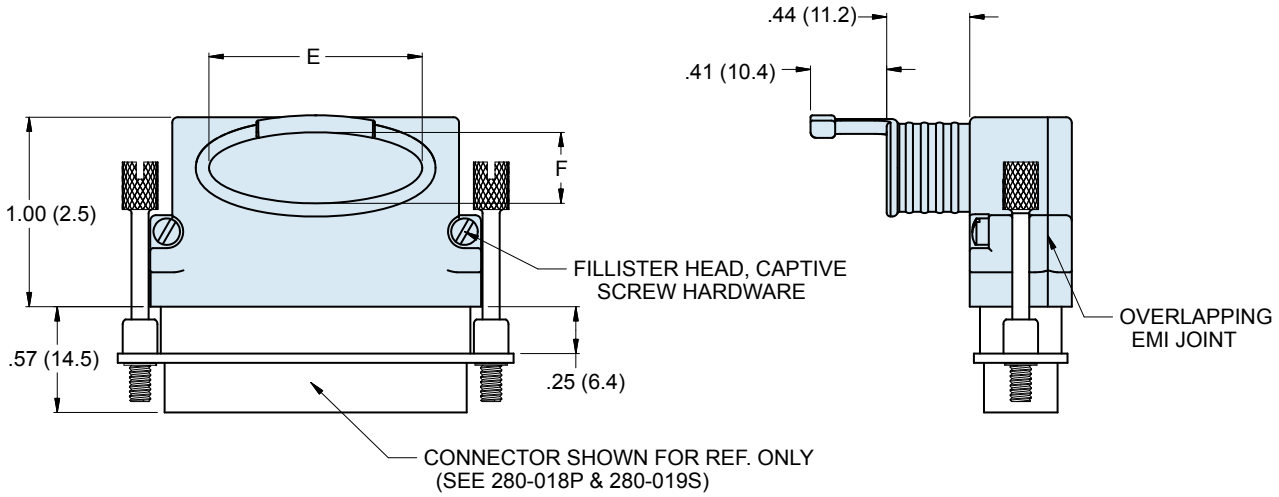
289S005 side entry

289S005 DIMENSIONS



Cable Exit Direction





Dimensions																				
Shell Size					Entry Size A				Entry Size B				Entry Size C				Entry Size D			
	A Max		B Max		E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	.894	22.71	.550	13.97	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.218	30.94	.550	13.97	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	1.760	44.70	.550	13.97	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.408	61.16	.550	13.97	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.297	58.34	.654	16.61	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.422	61.52	.716	18.19	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

F

HiPer-D® Accessories

EMI Backshell, one-piece, environmental

289T008 top entry, 289S008 side entry

289-008 backshell provides watertight EMI protection for HiPer-D® connectors. Fits standard HiPer-D® pin and socket connectors (280-018P, 280-019S) and Combo HiPer-D® connectors (280-046P and 280-047S). Available with top entry or side entry. Terminate cable shield with optional Band-Master™ATS clamping band. Elliptical cable entry provides room for large wire bundles. Backshell consists of solid one piece housing, two stainless steel hex head jackscrews, two jackscrew retainer clips and silicone rubber sealing gasket. Aluminum or stainless steel. Use with Glenair Series 77 heat-shrink boot.

Entry Style

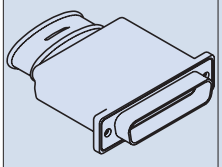


Fig. 1 **Top Entry** 289T008

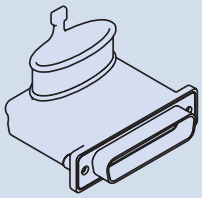


Fig. 2 **Side Entry** 289S008

Qwik Ty™ Option

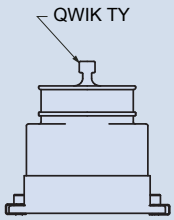


Fig. 3 **Qwik Ty™**

Slot Option

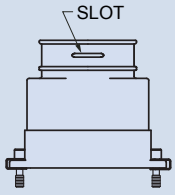


Fig. 4 **Slots**

Cable Entry Direction

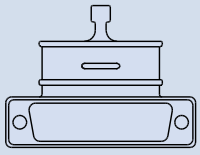


Fig. 5 **Long Side Entry (1)**

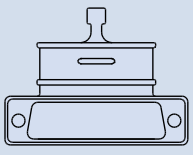


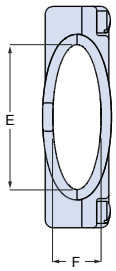
Fig. 6 **Short Side Entry (2)**

Ordering Information

Sample Part Number	289S008	JF	6	A	T	S	K	2

Basic Part Number	**289T008** = Top Entry (*Fig. 1*) **289S008** = Side Entry (*Fig. 2*)
Finish	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **JF** = Cadmium with Yellow Chromate **Z2** = Gold (RoHS) **Z1** = Passivated Stainless Steel (RoHS)
Shell Size	**1** = Shell Size 1 **2** = Shell Size 2 **3** = Shell Size 3 **4** = Shell Size 4 **5** = Shell Size 5 **6** = Shell Size 6
Entry Size	**A, B, C or D** See Cable Entry Size Table Below
Qwik Ty™ Option	**N** = Supplied without Qwik Ty™ **T** = With Qwik Ty™ Strain Relief (*Fig. 3*)
Slot Option	**N** = Supplied without Slots **S** = With Slots for Terminating Individual Shields (*Fig. 4*)
EMI/RFI Band	**N** = Supplied without Band **K** = Supplied with Pre-Coiled Band (600-052-1)
Cable Entry Direction	***Omit for 289T008. Applies only to 289S008.*** **1** = Cable Exit on Long Side of Shell Keystone (*Fig. 5*) **2** = Cable Exit on Short Side of Shell Keystone (*Fig. 6*)

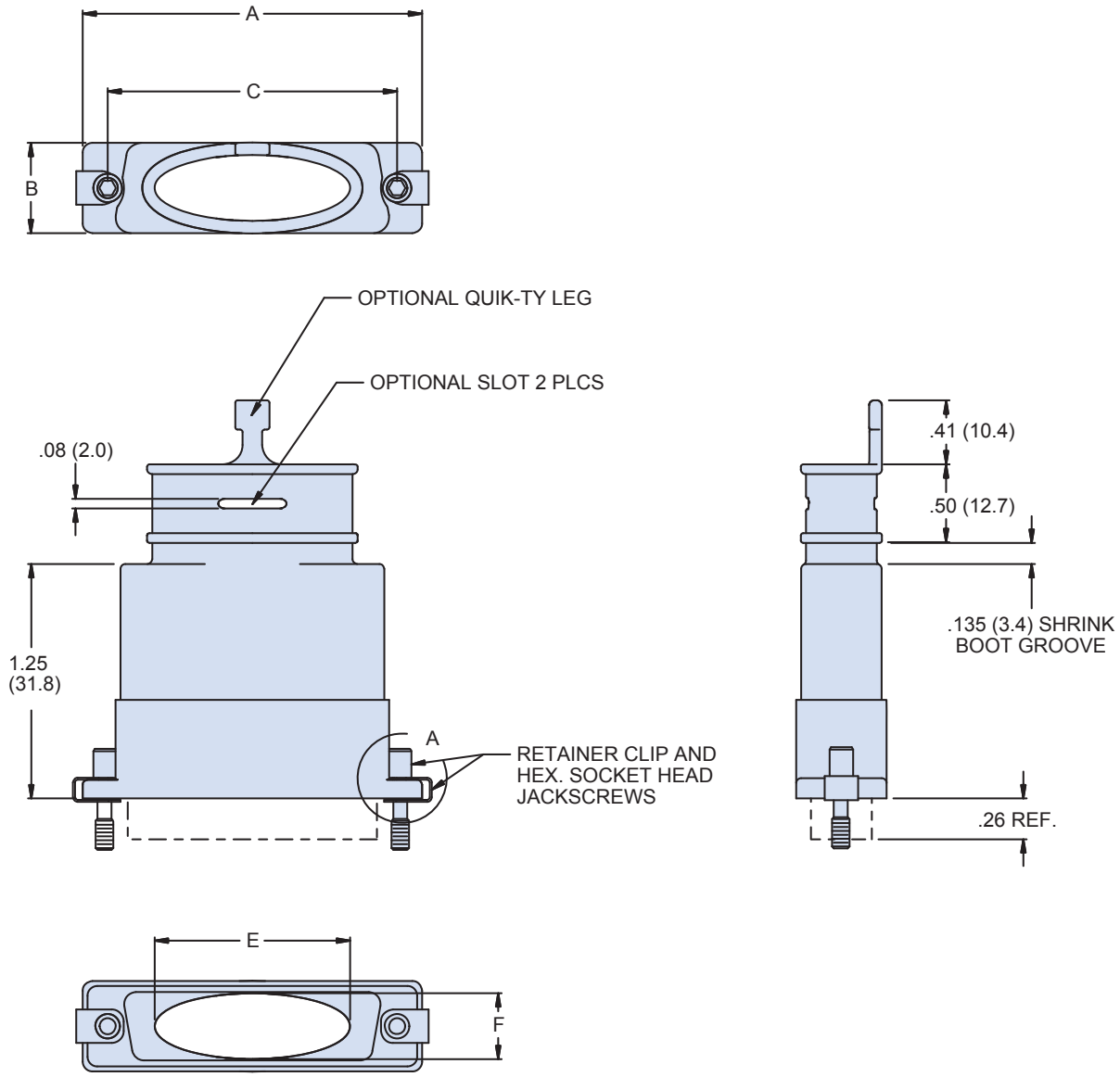
Cable Entry Size



Shell Size	Entry Size A				Entry Size B				Entry Size C				Entry Size D			
	E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

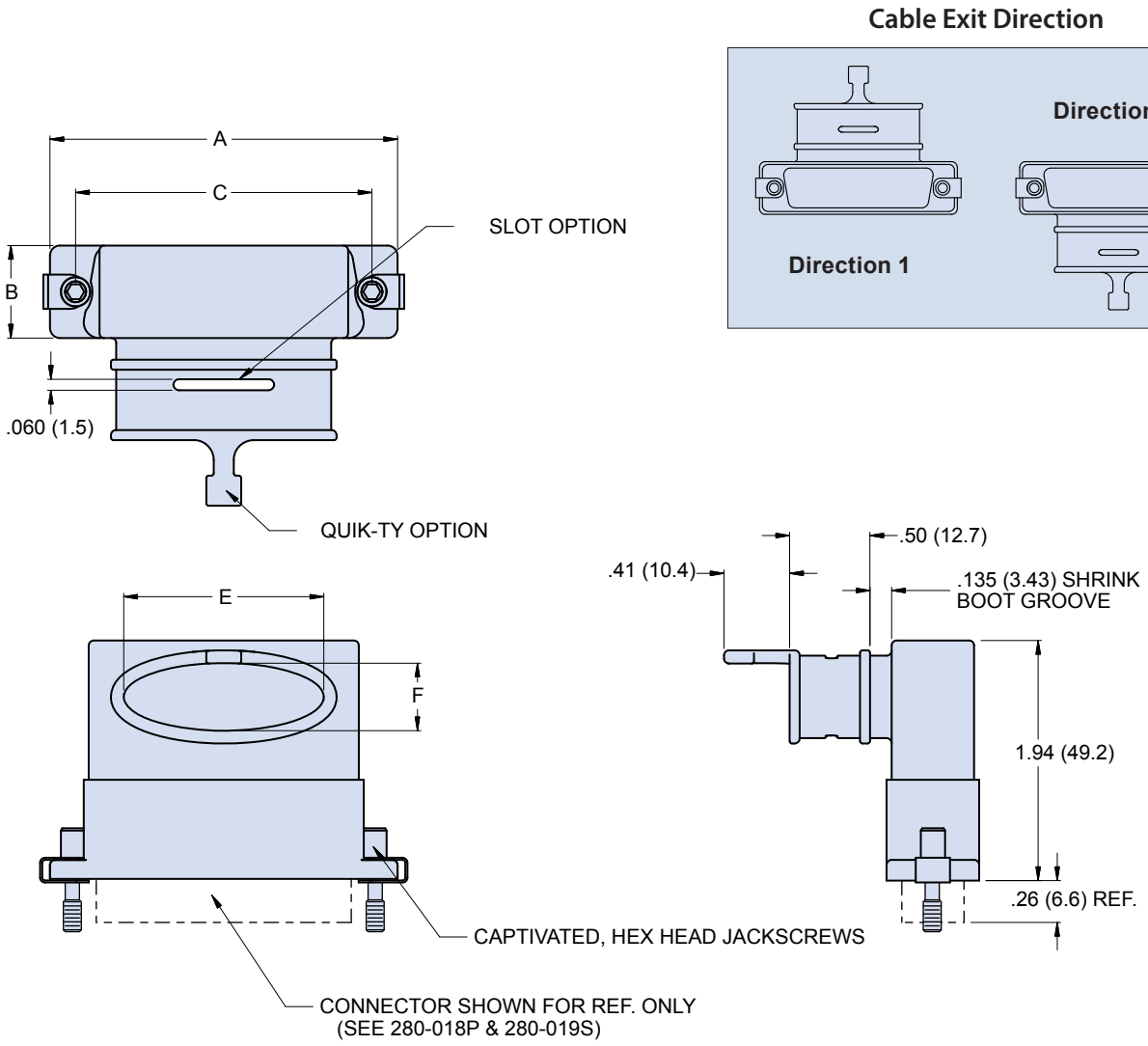
F

289T008 DIMENSIONS



Dimensions																						
Shell Size	A Max		B Max		C Basic		Entry Size A				Entry Size B				Entry Size C				Entry Size D			
							E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	1.395	35.43	.624	15.85	.984	24.99	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.706	43.33	.624	15.85	1.312	33.32	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	2.265	57.53	.624	15.85	1.852	47.04	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.900	73.66	.624	15.85	2.500	63.50	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.800	71.12	.750	19.05	2.406	61.11	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.900	73.66	.844	21.44	2.500	63.50	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

289S008 DIMENSIONS



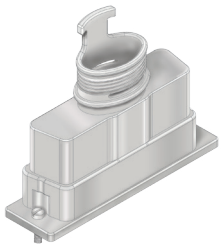
Dimensions																						
Shell Size	A Max		B Max		C Basic		Entry Size A				Entry Size B				Entry Size C				Entry Size D			
							E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	1.395	35.43	.624	15.85	.984	24.99	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.706	43.33	.624	15.85	1.312	33.32	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	2.265	57.53	.624	15.85	1.852	47.04	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.900	73.66	.624	15.85	2.500	63.50	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.800	71.12	.750	19.05	2.406	61.11	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.900	73.66	.844	21.44	2.500	63.50	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

HiPer-D® Accessories

EMI Backshell, one-piece, environmental, panel mount

289T007 top entry, 289B007 45º entry, 289S007 side entry

289T007
289S007
289B007



289-007 backshell fits panel mount HiPer-D® connectors with threaded holes. Available in straight, right angle and 45° versions. Aluminum or stainless steel body, fluorosilicone rubber gasket and stainless steel screws. Design also features a boot groove for the attachment of Series 77 heatshrink boots. Terminate cable shield with optional BAND-IT® band. Optional slot allows easy termination of multiple individual cable shields. Attach cable ties to optional Qwik Ty™ leg.

Entry Style

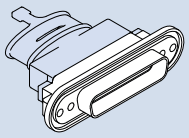


Fig. 1
Top Entry 289T007

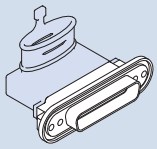


Fig. 2
Side Entry 289S007

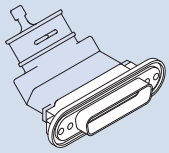


Fig. 3
45º Entry 289B007

Qwik Ty™ Option

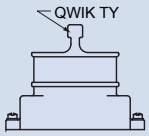


Fig. 4
Qwik Ty™

Slot Option

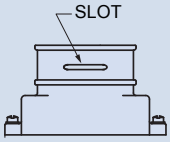


Fig. 5
Slots

Cable Entry Direction

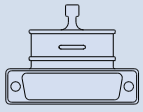


Fig. 6
Long Side Entry (1)

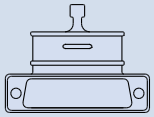


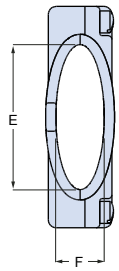
Fig. 7
Short Side Entry (2)

Ordering Information

Sample Part Number	289B007	MT	2	C	N	N	N	1

Basic Part Number	**289T007** = Top Entry (*Fig. 1*) **289S007** = Side Entry (*Fig. 2*) **289B007** = 45º Entry (*Fig. 3*)
Finish	**ME** = Electroless Nickel (RoHS) **MT** = Nickel-PTFE (RoHS) **JF** = Cadmium with Yellow Chromate **Z2** = Gold (RoHS) **Z1** = Passivated Stainless Steel (RoHS)
Shell Size	**1** = Shell Size 1 **2** = Shell Size 2 **3** = Shell Size 3 **4** = Shell Size 4 **5** = Shell Size 5 **6** = Shell Size 6
Entry Size	**A, B, C or D** See Cable Entry Size Table Below
Qwik Ty™ Option	**N** = Supplied without Qwik Ty™ **T** = With Qwik Ty™ Strain Relief (*Fig. 4*)
Slot Option	**N** = Supplied without Slots **S** = With Slots for Terminating Individual Shields (*Fig. 5*)
EMI/RFI Band	**N** = Supplied without Band **K** = Supplied with Pre-Coiled Band (600-052-1)
Cable Entry Direction	***Omit for 289T007. Applies only to 289S007 and 289B007.*** **1** = Cable Exit on Long Side of Shell Keystone (*Fig. 6*) **2** = Cable Exit on Short Side of Shell Keystone (*Fig. 7*)

Cable Entry Size



Shell Size	Entry Size A				Entry Size B				Entry Size C				Entry Size D			
	E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

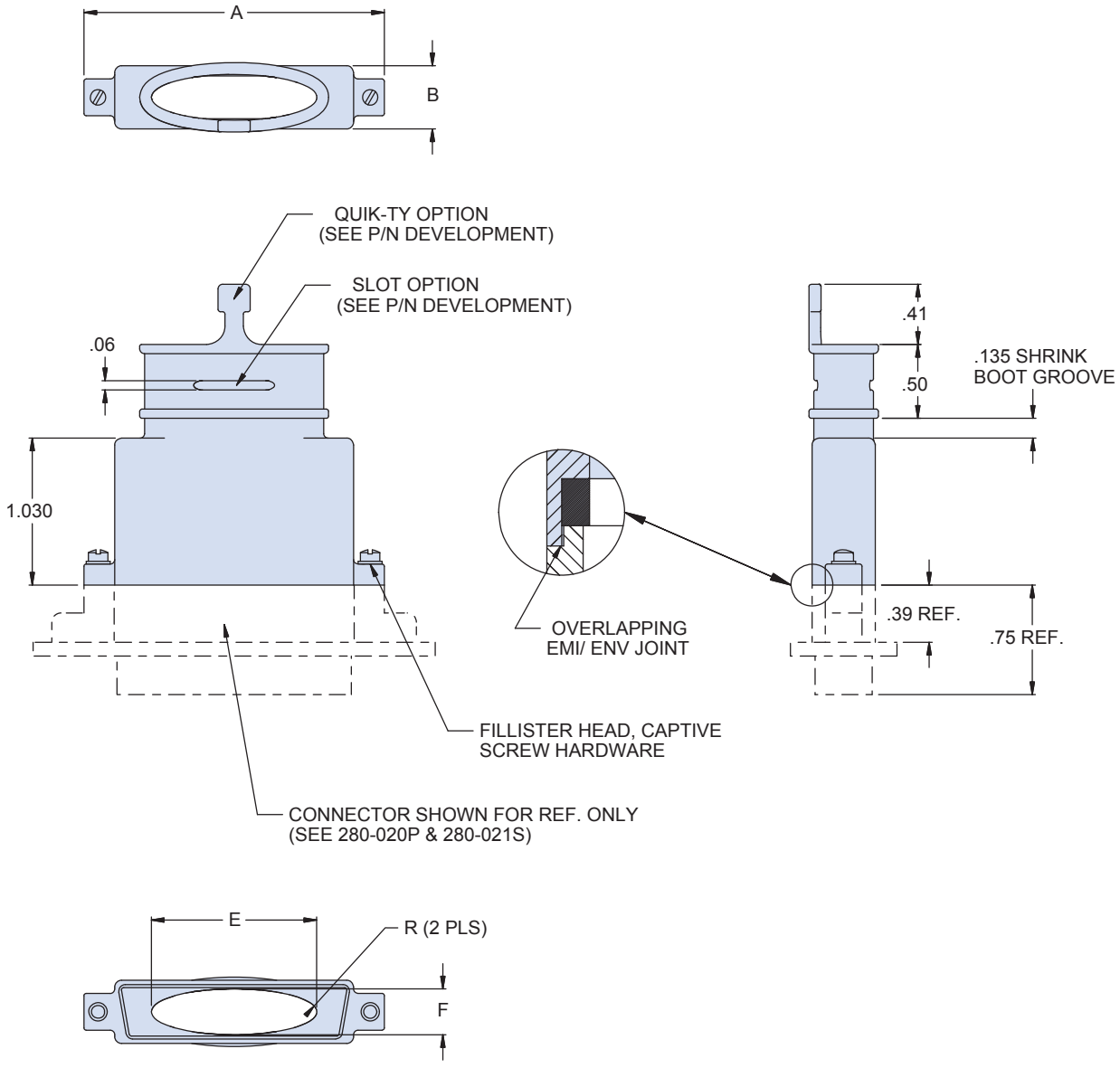
F

HiPer-D® Accessories

EMI Backshell, one-piece, environmental, panel mount

289T007 top entry

289T007 DIMENSIONS

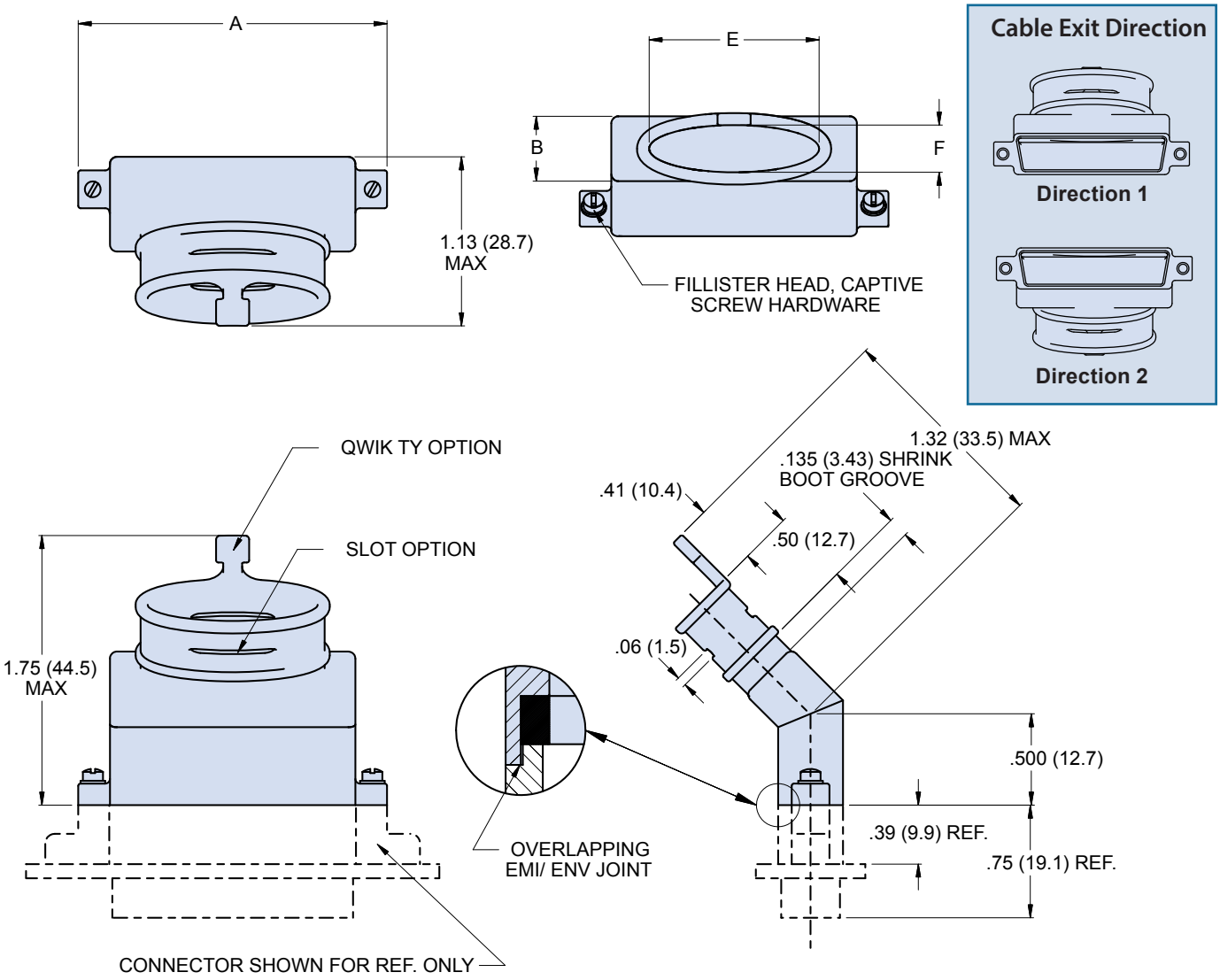


Dimensions																								
Shell Size	A Max		B Max		Entry Size A				Entry Size B						Entry Size C						Entry Size D					
					E		F		E		F		R		E		F		R		E		F		R	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	1.181	30.00	.526	13.36	.143	3.63	.143	3.63	.195	4.95	.195	4.95	N/A		.242	6.15	.242	6.15	N/A		.438	11.13	.375	9.53	.160	4.06
2	1.506	38.25	.526	13.36	.188	4.78	.188	4.78	.256	6.50	.256	6.50	N/A		.480	12.19	.375	9.53	.125	3.18	.688	17.48	.375	9.53	.130	3.30
3	2.046	51.97	.526	13.36	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.125	3.18	.780	19.81	.375	9.53	.125	3.18	1.125	28.58	.375	9.53	.109	2.77
4	2.694	68.43	.526	13.36	.291	7.39	.291	7.39	.800	20.32	.375	9.53	.125	3.18	1.260	32.00	.375	9.53	.125	3.18	1.813	46.05	.375	9.53	.109	2.77
5	2.600	66.04	.628	15.92	.326	8.28	.326	8.28	.770	19.56	.485	12.32	.156	3.96	1.250	31.75	.485	12.32	.156	3.96	1.750	44.45	.485	12.32	.125	3.18
6	2.694	68.43	.690	17.53	.376	9.55	.376	9.55	.863	21.92	.550	13.97	.188	4.78	1.323	33.60	.550	13.97	.156	3.96	1.875	47.63	.550	13.97	.125	3.18

EMI Backshell, one-piece, environmental, panel mount

289B007 45º entry

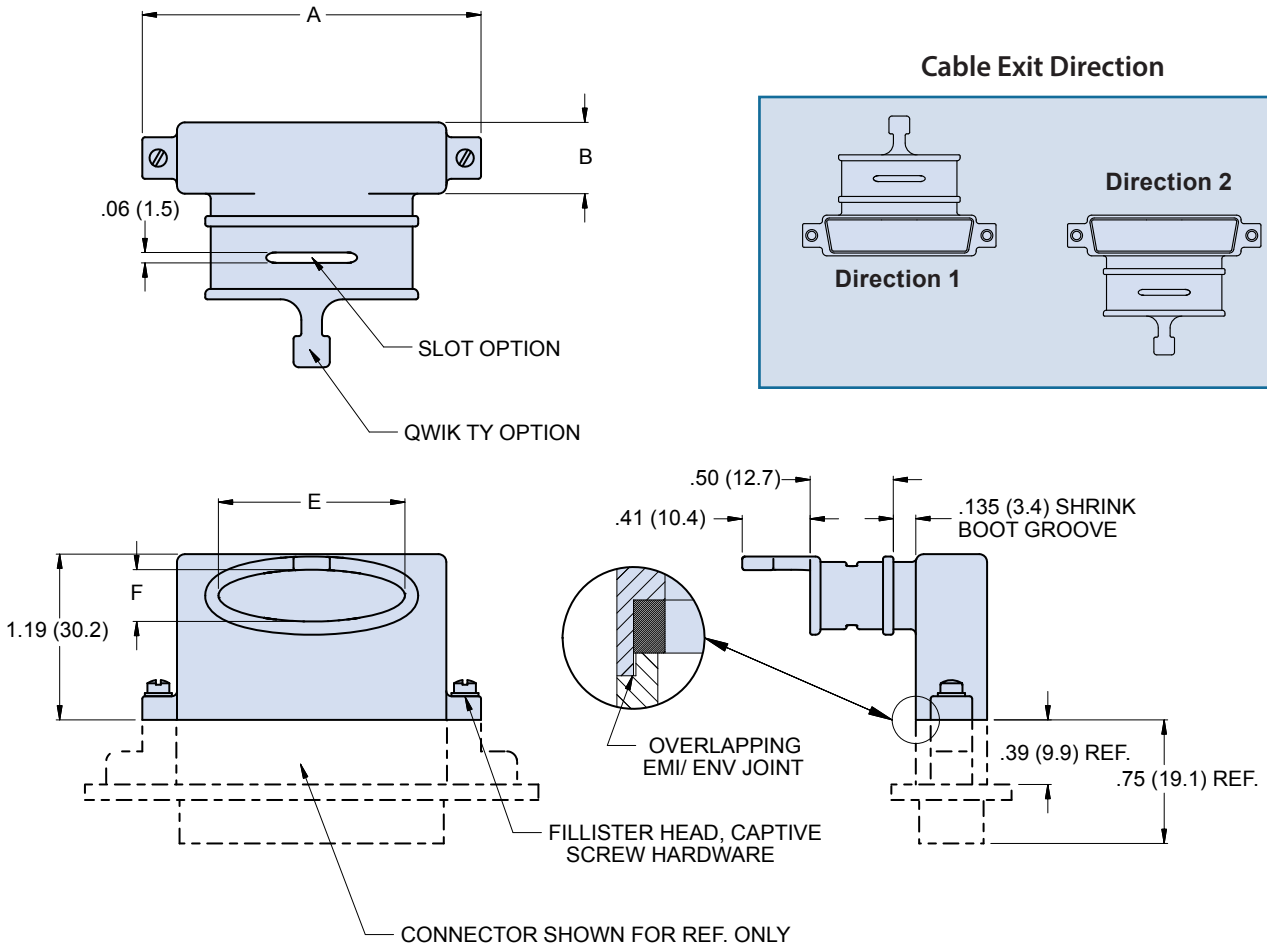
289B007 DIMENSIONS



Dimensions																				
Shell Size	A Max		B Max		Entry Size A				Entry Size B				Entry Size C				Entry Size D			
					E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	1.181	30.00	.526	13.36	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.506	38.25	.526	13.36	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	2.046	51.97	.526	13.36	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.694	68.43	.526	13.36	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.600	66.04	.628	15.92	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.694	68.43	.690	17.53	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

F

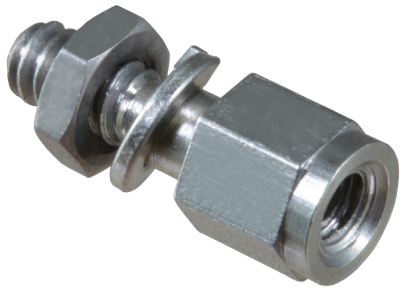
289S007 DIMENSIONS



Dimensions																				
Shell Size	A Max		B Max		SIZE A				SIZE B				SIZE C				SIZE D			
					E		F		E		F		E		F		E		F	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
1	1.181	30.00	.526	13.36	.143	3.63	.143	3.63	.195	4.95	.195	4.95	.242	6.15	.242	6.15	.438	11.13	.375	9.53
2	1.506	38.25	.526	13.36	.188	4.78	.188	4.78	.256	6.50	.256	6.50	.480	12.19	.375	9.53	.688	17.48	.375	9.53
3	2.046	51.97	.526	13.36	.245	6.22	.245	6.22	.550	13.97	.375	9.53	.780	19.81	.375	9.53	1.125	28.58	.375	9.53
4	2.694	68.43	.526	13.36	.291	7.39	.291	7.39	.800	20.32	.375	9.53	1.260	32.00	.375	9.53	1.813	46.05	.375	9.53
5	2.600	66.04	.628	15.92	.326	8.28	.326	8.28	.770	19.56	.485	12.32	1.250	31.75	.485	12.32	1.750	44.45	.485	12.32
6	2.694	68.43	.690	17.53	.376	9.55	.376	9.55	.863	21.92	.550	13.97	1.323	33.60	.550	13.97	1.875	47.63	.550	13.97

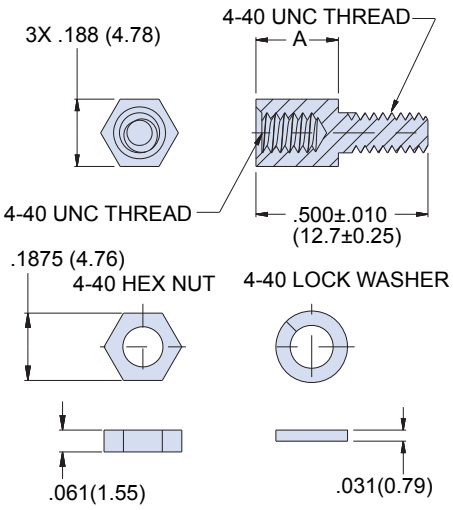
289-015 JACKPOST KIT FOR HIPER-D® CABLE CONNECTORS

Jackpost kits for panel mounting of HiPer-D® cable connectors. 289-015 jackposts fit HiPer-D® cable connectors 280-018P, 280-019S, 280-046P and 280-047S. For front-mounted and cable-mounted connectors, use 289-015-A. For rear panel mounted connectors, choose the correct jackpost based on panel thickness. #4-40 UNC 2B threads. One kit consists of (2) jackposts, (2) hex nuts and (2) split lockwashers. 300 series stainless steel, passivated.



289-015

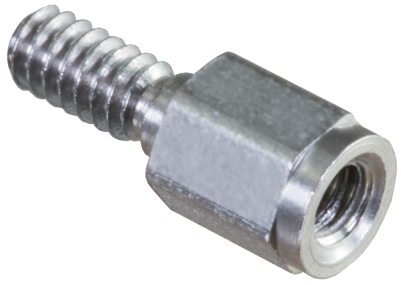
Hiper-D Jackpost Kits for Cable Connectors				
Panel Thickness		Part Number	A	
In.	mm.		In.	mm.
(none)	(none)	289-015-A	.250	6.35
.031	0.79	289-015-B	.219	5.56
.047	1.19	289-015-C	.203	5.16
.062	1.57	289-015-D	.188	4.78
.093(1)	2.36 (1)	289-015-D	.188	4.78
.125 (1)	3.18 (1)	289-015-D	.188	4.78
Note (1) Panels thicker than .062 (1.57) must be counter-bored.				



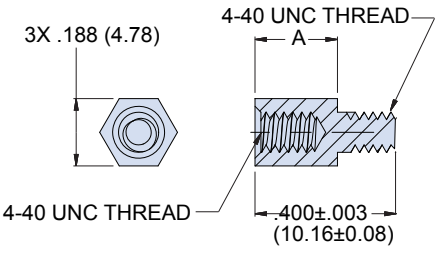
289-016 JACKPOST KIT FOR LOW PROFILE PCB CONNECTORS

289-016

Stainless steel jackposts for panel mounting of low profile HiPer-D® PCB connectors. For freestanding connectors, use 289-016-A. For rear panel mounted connectors, choose the correct jackpost based on panel thickness. #4-40 UNC 2B threads. 300 series stainless steel, passivated. One kit consists of (2) jackposts. Install into connector flange with threadlocking compound (not supplied).



Hiper-D Jackpost Kits for PCB Connectors				
Panel Thickness		Part Number	A	
In.	mm.		In.	mm.
(none)	(none)	289-016-A	.250	6.35
.031	0.79	289-016-B	.219	5.56
.047	1.19	289-016-C	.203	5.16
.062	1.57	289-016-D	.188	4.78
.093(1)	2.36 (1)	289-016-D	.188	4.78
.125 (1)	3.18 (1)	289-016-D	.188	4.78
Note (1) Panels thicker than .062 (1.57) must be counter-bored.				



F

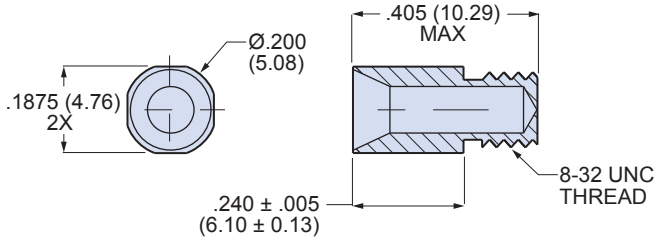
Guide pins, bushings and jackposts for panel mount connectors 289-014-B, 289-014-G, and 289-014-P

289-014-B GUIDE BUSHING KIT

289-014

Style "B" guide bushing for blind mate applications has #8-32 thread for installation into panel mount HiPer-D® connectors with corresponding #8-32 tapped flange. 300 series stainless steel, passivated. One kit consists of (2) bushings. Install with threadlocking compound. Mates with style "G" guide pin 289-014-G.

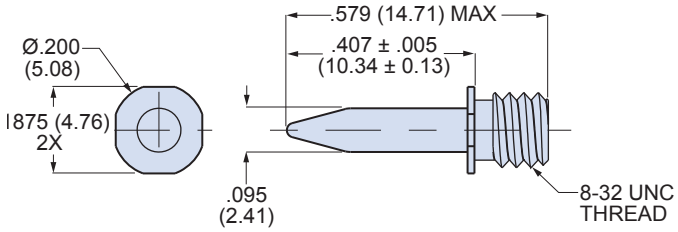
Part Number
289-014-B



289-014-G GUIDE PIN KIT

Style "G" guide pin for blind mate applications has #8-32 thread for installation into panel mount HiPer-D® connectors with corresponding #8-32 tapped flange. 300 series stainless steel, passivated. One kit consists of (2) guide pins. Install with threadlocking compound. Mates with style "B" guide bushing 289-014-B.

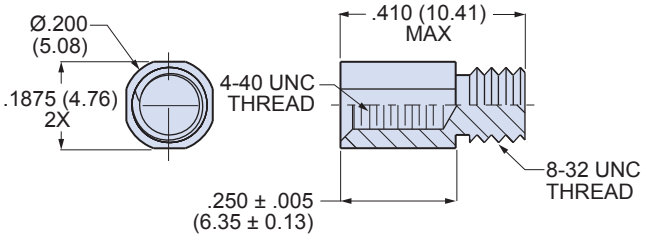
Part Number
289-014-G



289-014-P JACKPOST KIT

Style "P" jackpost has #8-32 thread for installation into panel mount HiPer-D® connectors with corresponding #8-32 tapped flange. 300 series stainless steel, passivated. One kit consists of (2) jackposts. Install with threadlocking compound. Mates with all standard #4-40 male screw locks and jackscrews.

Part Number
289-014-P

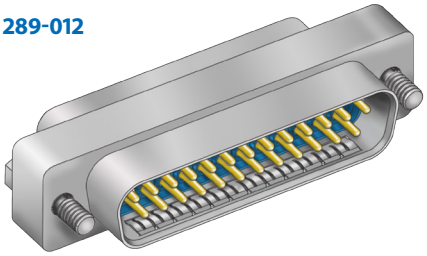


F

Sav-Con® D-subminiature connector saver

289-012

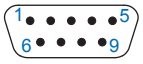
289-012



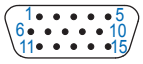
Prevent damage to expensive instruments and cables with Glenair HiPer-D® Sav-Cons®. One side is a pin connector and the other side is a socket connector. Low profile one-piece machined aluminum housing and ground spring protect circuits from EMI problems. Contacts are heavy gold plated for improved durability. Available in standard density and high density contact arrangements. Contacts are factory-installed. Pin mating face has fluorosilicone rubber seal. Choose electroless nickel or gold shell finish for avionics and space applications. Choose cadmium for compatibility with cadmium or zinc plated M24308 connectors, or choose nickel-PTFE for maximum corrosion protection. Other materials and finishes available on request.

How To Order							
Contact Size	**Contact Density**	**No. of Contacts**	**Shell Size**	**Electroless Nickel Shell Finish** *Space, Avionics (ME)*	**Gold Plated Shell** *Space (Z2)*	**Nickel-PTFE Finish** *Maximum Corrosion Protection (MT)*	**Cadmium Shell Finish** *General Purpose (JF)*
#20	Standard	9	1	289-0121S9MEGR	289-0121S9Z2GR	289-0121S9MTGR	289-0121S9JFGR
		15	2	289-0122S15MEGR	289-0122S15Z2GR	289-0122S15MTGR	289-0122S15JFGR
		25	3	289-0123S25MEGR	289-0123S25Z2GR	289-0123S25MTGR	289-0123S25JFGR
		37	4	289-0124S37MEGR	289-0124S37Z2GR	289-0124S37MTGR	289-0124S37JFGR
		50	5	289-0125S50MEGR	289-0125S50Z2GR	289-0125S50MTGR	289-0125S50JFGR
#22	High Density	15	1	289-0121H15MEGR	289-0121H15Z2GR	289-0121H15MTGR	289-0121H15JFGR
		26	2	289-0122H26MEGR	289-0122H26Z2GR	289-0122H26MTGR	289-0122H26JFGR
		44	3	289-0123H44MEGR	289-0123H44Z2GR	289-0123H44MTGR	289-0123H44JFGR
		62	4	289-0124H62MEGR	289-0124H62Z2GR	289-0124H62MTGR	289-0124H62JFGR
		78	5	289-0125H78MEGR	289-0125H78Z2GR	289-0125H78MTGR	289-0125H78JFGR
		104	6	289-0126H104MEGR	289-0126H104Z2GR	289-0126H104MTGR	289-0126H104JFGR

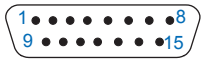
STANDARD AND HIGH DENSITY CONTACT ARRANGEMENTS *(face view of pin connector)*



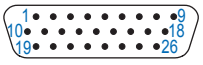
1S9
9 #20 Contacts



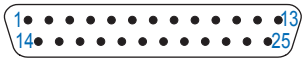
1H15
15 #22 Contacts



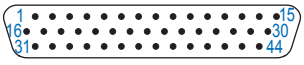
2S15
15 #20 Contacts



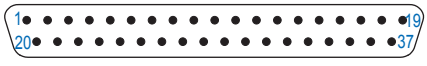
2H26
26 #22 Contacts



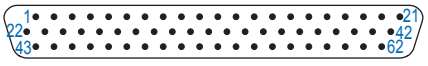
3S25
25 #20 Contacts



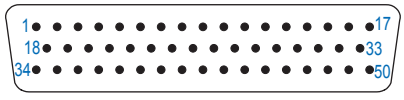
3H44
44 #22 Contacts



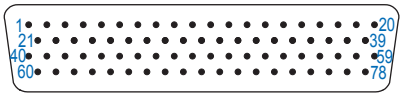
4S37
37 #20 Contacts



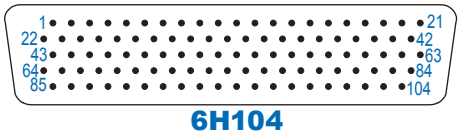
4H62
62 #22 Contacts



5S50
50 #20 Contacts



5H78
78 #22 Contacts



6H104
104 #22 Contacts

F

Sav-Con® D-subminiature connector saver

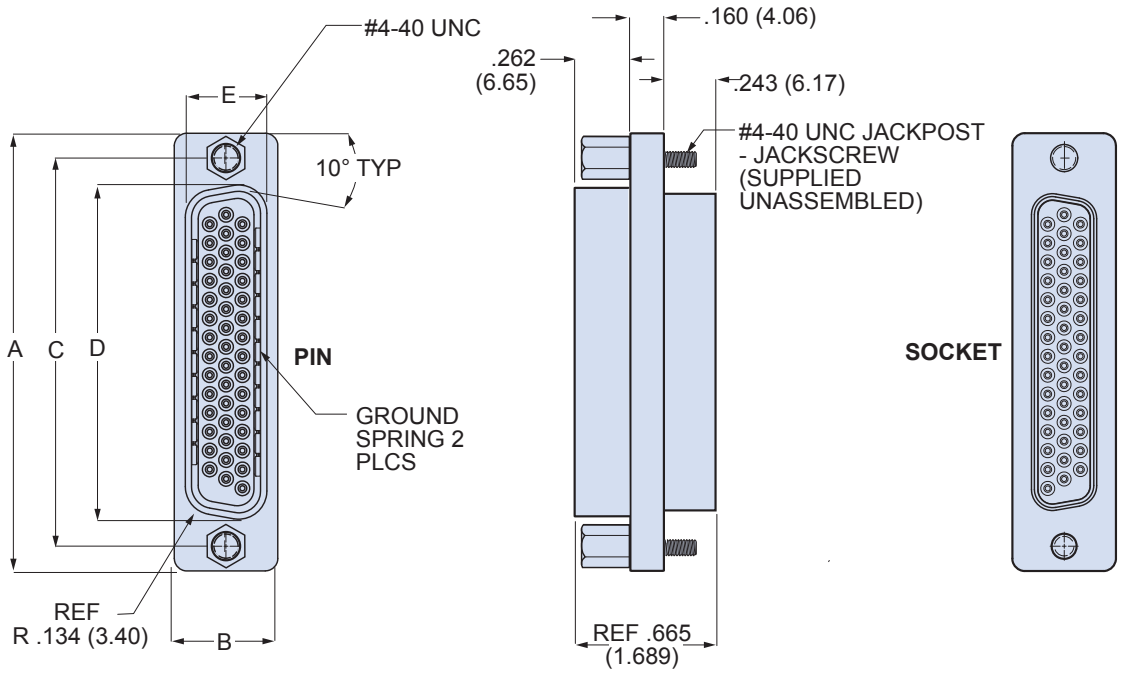
289-012

289-012 SAV-CON MATERIALS, FINISHES AND SPECIFICATIONS

Specifications	
Current Rating	#20 7.5 AMPS, #8 40 AMPS
Test Voltage	1000 VAC RMS
Insulation Resistance	5000 megohms minimum
Operating Temperature	-65° C. to +200° C.
Shock	300 g.
Vibration, Random	43.92 g.

Materials and Finishes	
Shell	Aluminum alloy
Contacts	Copper alloy, 50 microinches gold
Insulator	Thermoset epoxy
EMI Spring	Copper alloy, nickel plated
Face Seal	Fluorosilicone rubber
Hardware	300 series stainless steel

289-012 SAV-CON DIMENSIONS



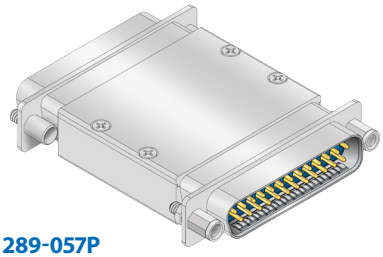
Shell Size	A		B		C Basic		D		E		F		G	
	In . ± .015	mm. ± 0.38	In . ± .015	mm. ± 0.38	In.	mm.	In . ± .005	mm. ± 0.13	In . ± .005	mm. ± 0.13	In . ± .005	mm. ± 0.13	In . ± .005	mm. ± 0.13
1	1.213	30.81	.494	12.55	.984	24.99	.726	18.44	.329	8.36	.311	7.90	.643	16.33
2	1.541	39.14	.494	12.55	1.312	33.32	1.054	26.77	.329	8.36	.311	7.90	.971	24.66
3	2.088	53.04	.494	12.55	1.852	47.04	1.594	40.49	.329	8.36	.311	7.90	1.511	38.38
4	2.729	69.32	.494	12.55	2.500	63.50	2.242	56.95	.329	8.36	.311	7.90	2.159	54.84
5	2.635	66.93	.605	15.37	2.406	61.11	2.139	54.33	.441	11.20	.423	10.74	2.064	52.43
6	2.729	69.32	.668	16.97	2.500	63.50	2.272	57.71	.503	12.78	.486	12.34	2.189	55.60

F

HiPer-D® Accessories

D-subminiature gender changer

289-057P, 289-058S



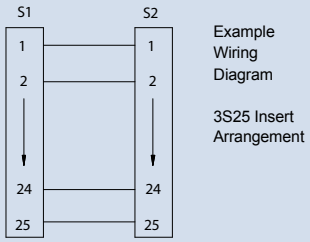
289-057P
289-058S

HiPer-D® Gender Changers provide a convenient way to change the gender of an interface to allow attachment of a mismatched cable. Two styles are available: male-male and female-female. Machined metal housing protects circuits from EMI problems. Contacts are heavy gold plated for improved durability. Available in standard density and high density contact arrangements. Intermateable with standard M24308-type connectors. Pin mating face has fluorosilicone rubber seal. Choose electroless nickel or gold shell finish for avionics and space applications. Choose cadmium for compatibility with cadmium or zinc plated M24308 connectors, or choose nickel-PTFE for maximum corrosion protection. Other materials and finishes available on request.

Ordering Information						
Sample Part Number		289-057P	3S25	ME	N	1
Basic Part Number	289-057P = Male-Male with Pin Contacts 289-058S = Female-Female with Socket Contacts					
Shell Size-Contact Arrangement	Contact Arrangements are shown in the adjacent table					
Finish	ME = Electroless Nickel (RoHS) MT = Nickel-PTFE (RoHS) JF = Cadmium with Yellow Chromate Z2 = Gold (RoHS) Z1 = Passivated Stainless Steel (RoHS)					
Ground Spring	**Omit for 289-058S. Applies to 289-057P Male-Male adapter only.** G = Supplied with EMI Ground Spring N = No Ground Spring					
Mating Hardware	1 = Captive #4-40 Male Screwlocks on Both Ends 2 = #4-40 Female Jackposts on Both Ends 3 = Captive #4-40 Male Screwlocks on One End, #4-40 Female Jackposts on One End					

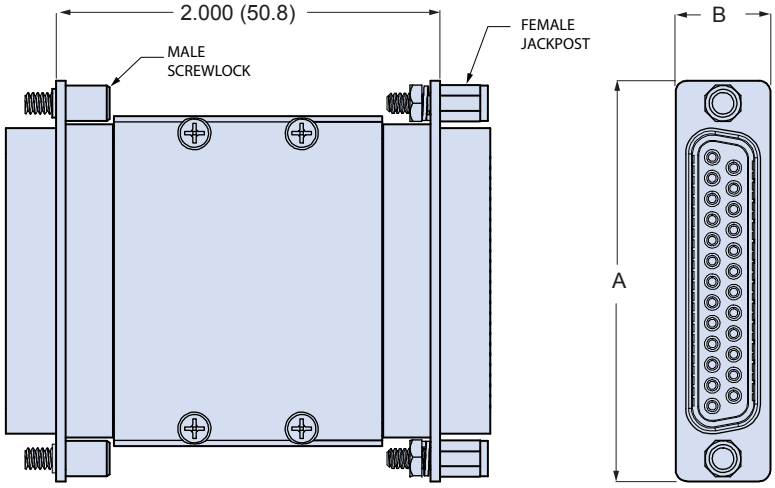
Shell Size - Contact Arrangements		
Shell Size-Contact Arr.	**Contact Size and Qty**	
	#20	**#22**
Standard Density		
1S9	9	
2S15	15	
3S25	25	
4S37	37	
5S50	50	
High Density		
1H15		15
2H26		26
3H44		44
4H62		62
5H78		78
6H104		104

Schematic



Example Wiring Diagram

3S25 Insert Arrangement



Dimensions				
	A		**B**	
Shell Size	**in** ± .015	**mm** ± 0.38	**in** ± .015	**mm** ± 0.38
1	1.213	30.81	.494	12.55
2	1.541	39.14	.494	12.55
3	2.088	53.04	.494	12.55
4	2.729	69.32	.494	12.55
5	2.635	66.93	.605	15.37
6	2.729	69.32	.668	16.97

F

HiPer-D® Accessories

Band-Master™ ATS tool and bands for termination of cable braid

600-058 tool, 600-052 and 600-090 band straps

BAND-MASTER™ ATS TOOL AND BANDS

Fast, cost-effective shield termination. Attach cable shields to backshells with ***Band-Master™ ATS*** 300 series SST/passivate I.A.W. AMS 2700. The ***Band-Master™ ATS*** system offers fast termination and the flexibility to handle a wide range of parts with just one band size. Approved for aerospace and defense, these straps have successfully passed rigorous shock, vibration and environmental testing.

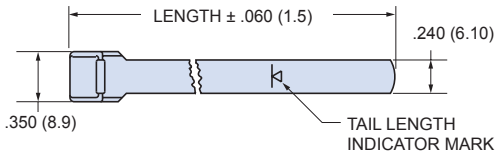
1 Band installation Tool. Use with .240" (6.10 mm) wide bands. 6.75 inches (172 mm) length, 1.2 pounds (0.6 Kg.)

2 Standard Band, .240" (6.10 mm) wide. Available in two lengths, flat or pre-coiled. Stainless steel.

Figure	Description	Part Number
1	Band installation Tool	**600-058**

Figure	Length		Part Number		Accommodates Diameter	
	in.	mm	Flat	Pre-Coiled	in.	mm
2	14.250	362.1	**600-052**	**600-052-1**	1.8	45.7
2	18.000	457.2	**600-090**	**600-090-1**	2.5	63.5

Contact Glenair or visit our website (glenair.com) to view our complete line of ***Band-Master™ ATS*** products, including pneumatic tools for high volume production and calibration kits.



BAND-MASTER™ ATS SHIELD TERMINATION INSTRUCTIONS

1. Prepare Cable Braid for termination process (Figure 1).
2. Push Braid forward over Adapter Retention Lip to the Adapter Incline Point (or .4" [10.2mm] minimum braid length). Milk Braid as required to remove slack and insure a snug fit around the shield termination area (Figure 2).
3. Prepare the Band in the following manner:

   IMPORTANT: Due to Connector/Adapter circumference, it may be necessary to prepare the Band around the Cable or Retention Area.

   A. Roll Band through the Buckle Slot twice. (Bands must be double-coiled.)

   B. Pull on Band until Mark (▷|) is within approximately .250 inch (6.4mm) of Buckle Slot (Figure 3). The Band may be tightened further if desired.

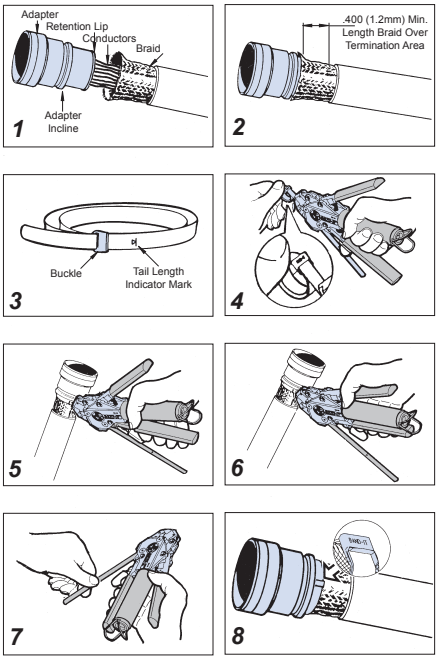
***NOTE: Prepared Band should have (▷|) Mark visible approximately where shown in Figure* 3.**

Shield Termination Clamping Process (Figures 4 thru 8)

NOTE: To free Tool Handles, move Holding Clips to center of Tool.

4. Squeeze Gripper Release Lever and insert Band into the front end opening of the Tool. (NOTE: Circular portion of looped band must always face downward.)
5. Aligning the Band and Tool with the Shield Termination Area, squeeze Black Pull-Up Handle repeatedly using short strokes until it locks against Tool Body. (This indicates the Band is compressed to the Tool Precalibrated Tension.)

   NOTE: If alignment of band and shield is unsatisfactory, tension on band can be relaxed by pushing on slotted release lever on top of tool. Make adjustments as necessary and again squeeze black pull-up handle.
6. Complete the Clamping Process by squeezing the Gray Cut-Off Handle.
7. Remove excess band from tool and dispose.
8. Inspect Shield Termination.



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HiPer-D® Accessories

Elliptical D-subminiature heatshrink boots

770-030

Elliptical heatshrink boots are designed for Glenair rectangular HiPer-D® backshells with large elliptical cable entries. Heatshrink boots provide strain relief and environmental protection. Shape-memory polymer returns to as-molded shape when heat is applied. Boot lip fits adapter groove for precise fit. Semi-rigid high performance elastomer resists high temperature and withstands exposure to petroleum-based fluids and fuels. Also available with non-halogenated flame-retardant polyolefin for use where limited fire hazard is required.

About User-Installed Adhesive

Heat-shrink boots are not watertight unless equipped with pre-coated or user-installed adhesives. When heat is applied to the boot, the adhesive melts and fixes the boot to the adapter and cable jacket to provide the necessary sealing as well as mechanical strain-relief. For maximum performance Glenair recommends Type U user-installed two-part epoxy adhesive which offers reduced boot installation time and easier installation. Pre-coated boots require additional care to install because the boot must be heated sufficiently to activate the epoxy, at the risk of overheating the overall assembly. A single 50 ml duo syringe can coat many boots. The duo syringe can be re-capped for re-use. Inexpensive mixing nozzles must be discarded after each use.

NOTE: Glenair high-performance two part epoxy meets VG95343 part 15.

See next page for ordering information on user-installed two part epoxy adhesive.

Series 77 "Full Nelson" Shrink Boot Catalog has additional boot styles, technical information, installation instructions and other heatshrink products. Contact Glenair or go to ***www.glenair.com***.

MATERIAL SELECTION GUIDE

1 **Type 1 High Performance Elastomer** -75°C to +150°C**.** Semi-rigid high performance elastomer combines excellent resistance to fuels, oils and solvents with superior performance at extreme temperatures. Material meets the requirements of VG95343 Type 6, BSG 198-5-DE, EN62329-102 and SAE AS5258 Type H. Recommended for demanding applications such as military vehicles and petrochemical exploration.

2 **Type 2 Zero Halogen Polyolefin** -30°C to +135°C**.** Low Smoke Zero Halogen (LSZH) polyolefin boots meet low smoke and toxicity requirements of shipboard, transit and aircraft systems. Oxygen index greater than 30%, smoke index less than 20, and toxicity index under 3 per 100 grams. Material meets requirements of NAVSEA 5617649, VG95343 Part 29, BSG 198-5-DF, EN62329-101 and SAE AS5258 Type G. Good resistance to oils, fuels and solvents.

PRE-COATED ADHESIVE SELECTION GUIDE

W1 **Low Smoke Zero Halogen (LSZH) polyamide hot melt adhesive Coating.** Bonds well to a variety of substrates. Good creep resistance at elevated temperatures. Excellent bond strength at low temperature. Good resistance to fuels and oils. -55°C to +105°C. Compatible with Type 1 and Type 2 boot materials.

R **High Temperature Epoxy Adhesive Coating**. Glenair's highest performance pre-coated adhesive. The material requires careful installation using trained operators. -75°C to 150°C. Withstands prolonged high temperature immersion in fuels and oils. Excellent peel adhesion. Compatible with Type 1 and Type 2 boot materials.

Ordering Information					
Sample Part Number		**770-030**	**1**	**05**	**R**
Basic Part Number	**770-030**				
Material	**1** = High Performance Elastomer **2** = Zero Halogen Polyolefin				
Boot Size	**05** = Size 05 **06** = Size 06 (see next page for dimensions)				
Adhesive Lining	**W1** = Low Smoke Zero Halogen Polyamide Hot Melt Adhesive **R** = High Temperature, High Strength Epoxy Adhesive Omit for boot with no adhesive lining				

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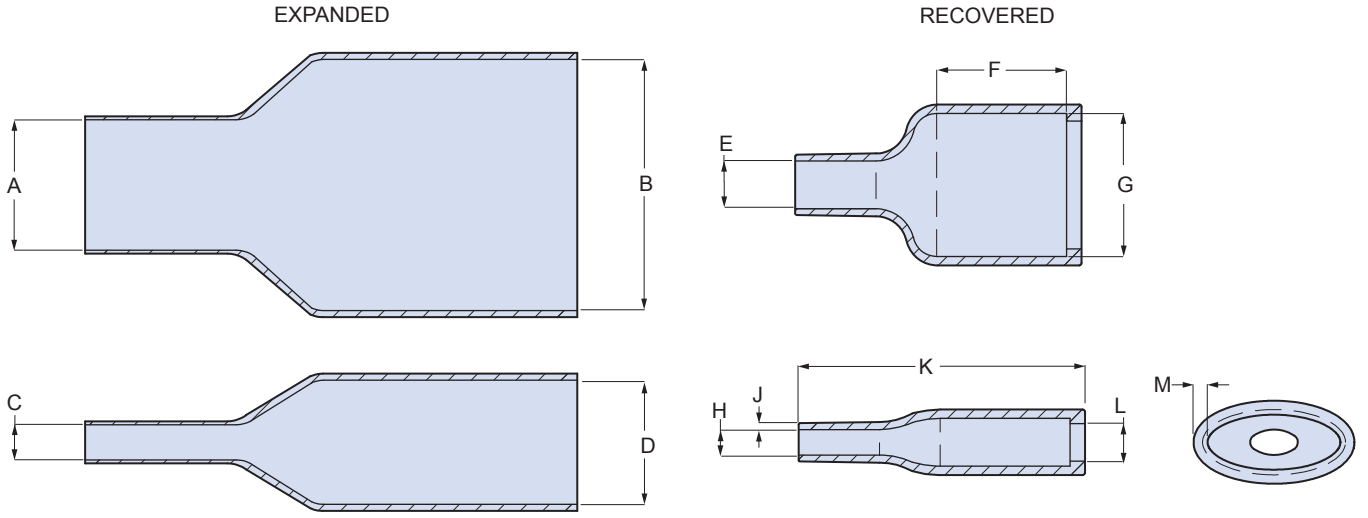
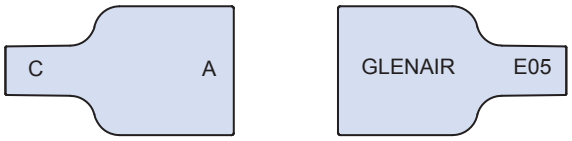
770-030 HEATSHRINK BOOT DIMENSIONS



Boot Size	A Min		B Min		C Min		D Min		E Max		F ± 10%		G Max		H Max		J ± 10%		K ± 10%		L Max		M ± 10%	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
05	1.50	38.1	2.00	50.8	.800	20.3	1.00	25.4	.375	9.53	1.062	27	1.125	28.6	.200	5.08	.060	1.52	2.29	58.2	.375	9.53	.070	1.78
06	1.80	45.7	2.50	63.5	.580	14.7	1.50	38.1	.450	11.43	1.062	27	1.637	41.6	.145	3.68	.060	1.52	3.05	77.5	.375	9.53	.070	1.78

770-030 HEATSHRINK BOOT IDENTIFICATION MARKINGS

Heatshrink boots are identified with molded-in lettering. This lettering shows the boot type, boot size and orientation. Position the boot so that the lipped "A" end is toward the adapter and the "C" end is toward the cable. Assembly instructions are in the ***Series 77 "Full Nelson" Environmental Shrink Boots*** catalog, available at www.glenair.com.



USER-INSTALLED BOOT ADHESIVE, DISPENSING GUN AND MIXING NOZZLE

Part Number
779-001

High performance flexible two part thermoset epoxy provides high strength flexible bond from -55° to 150°C. 50 mL duo syringe fits standard dispensing guns. Use with square green mixing nozzle sold separately. 12 hour cure time at 20°C, 1 hour at 85°C, 30 minutes at 150°C. Apply to inside of boot with wooden spatula. 18 month shelf life.

Part Number
779-002

Twin push-rod 1:1 ratio epoxy dispensing gun for use with duo syringe epoxy and mixing nozzle sold separately. Durable heavy-duty plastic. Gun type hand grip with ratcheting trigger to advance push-rods.

Part Number	Count Per Pack
779-003	12

1:1 ratio mixing nozzle attaches to duo syringe with 1/2 turn and locks into place. Nozzle provides consistent mixing of resin and hardener. Kit consists of (12) nozzles.

F

Section F

HiPer-D® Panel Cutouts and PCB Footprints

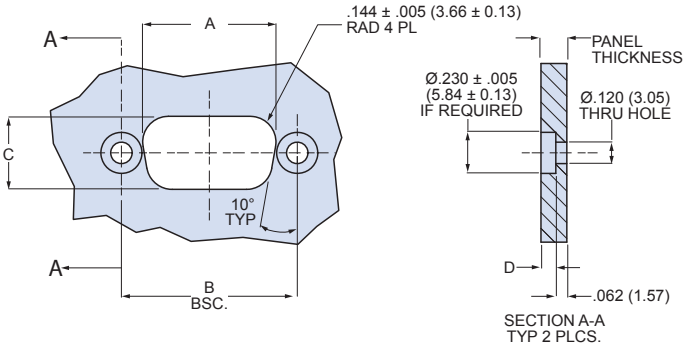
Connector Part Number	Description	Panel Cutout Page No.	PCB Footprint Page No.
280-018P	Cable Connector, Pin Contacts	G-2	—
280-019S	Cable Connector, Socket Contacts	G-2	—
280-020P	Panel Mount, Pin Contacts	G-3	—
280-021S	Panel Mount, Socket Contacts	G-3	—
280-022P	Straight PCB, Pin Contacts	G-3	G-4 - G-6
280-023S	Straight PCB, Socket Contacts	G-3	G-7 - G-9
280-024P	Right Angle PCB, Pin Contacts	G-3	G-10 - G-12
280-025S	Right Angle PCB, Socket Contacts	G-3	G-13 - G-15
280-026P	Straight PCB, Pin Contacts	G-2	G-4 - G-6
280-027S	Straight PCB, Socket Contacts	G-2	G-7 - G-9
280-028P	Right Angle PCB, Pin Contacts	G-2	G-10 - G-12
280-029S	Right Angle PCB, Socket Contacts	G-2	G-13 - G-19
280-030P	Float Mount, Pin Contacts	G-3	—
280-031S	Float Mount, Socket Contacts	G-3	—
280-046P	Cable Connector, Pin Contacts	G-2	—
280-047S	Cable Connector, Socket Contacts	G-2	—
280-048P	Panel Mount, Pin Contacts	G-3	—
280-049P	Panel Mount, Socket Contacts	G-3	—
280-050P	Straight PCB, Pin Contacts	G-3	G-16 - G-19
280-051S	Straight PCB, Socket Contacts	G-3	G-20 - G-23
280-052P	Right Angle PCB, Pin Contacts	G-3	G-24 - G-28
280-053S	Right Angle PCB, Socket Contacts	G-3	G-29 - G-33
280-054P	Straight PCB, Pin Contacts	G-2	G-16 - G-19
280-055S	Straight PCB, Socket Contacts	G-2	G-20 - G-23
280-056P	Right Angle PCB, Pin Contacts	G-2	G-24 - G-28
280-057S	Right Angle PCB, Socket Contacts	G-2	G-29 - G-33
280-058P	Float Mount, Pin Contacts	G-3	—
280-059S	Float Mount, Socket Contacts	G-3	—
289-015	Rear Panel Mount, Jackpost Hardware Kit	G-4	—

HiPer-D® Panel Cutouts and PCB Footprints

Panel cutout and mounting information for cable connectors and low profile PCB connectors

PANEL CUTOUT FOR REAR-MOUNTED CABLE CONNECTORS AND LOW PROFILE PCB CONNECTORS

Rear Mount Panel Cutout (1)



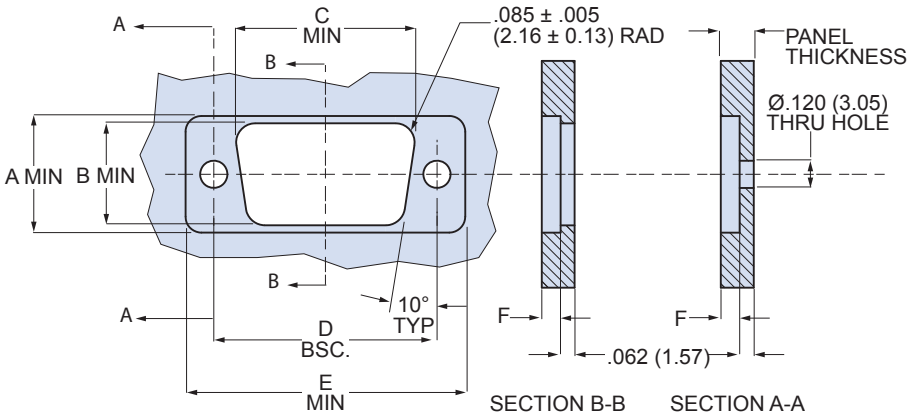
Shell Size	A in (+.005 -.000)	A in (+0.13 -0.00)	A mm (+.005 -.000)	A mm (+0.13 -0.00)	B Basic in	B Basic mm	C in. (+.005 -.000)	C in. (+0.13 -0.00)	C mm (+.005 -.000)	C mm (+0.13 -0.00)
1	.746		18.95		.984	24.99	.409		10.39	
2	1.074		27.28		1.312	33.32	.409		10.39	
3	1.614		41.00		1.852	47.04	.409		10.39	
4	2.262		57.45		2.500	63.50	.409		10.39	
5	2.159		54.84		2.406	61.11	.521		13.23	
6	2.288		58.22		2.500	63.50	.583		14.81	

Application Note for Rear Panel Mounting

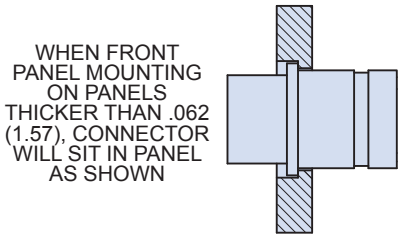
(1) For rear mounting with female Jackposts, use shortened jackposts per the table at right. For panel thickness greater than .062 (1.57), the panel must be counterbored.

Panel Thickness in	Panel Thickness mm	D in	D mm	Jackpost Part Number for Cable Connectors	Jackpost Part Number for Low Prof. PCB Connectors
No Panel		N/A	N/A	289-015-A	289-016-A
.031	0.79	N/A	N/A	289-015-B	289-016-B
.047	1.19	N/A	N/A	289-015-C	289-016-C
.062	1.57	N/A	N/A	289-015-D	289-016-D
.093	2.36	.031	0.79	289-015-D	289-016-D
.125	3.18	.063	1.60	289-015-D	289-016-D
.156	3.96	.094	2.39	289-015-D	289-015-D

PANEL CUTOUT FOR FRONT-MOUNTED CABLE CONNECTORS



Front Mount Panel Cutout



Shell Size	A in (+.005 -.000)	A in (+0.13 -0.00)	A mm (+.005 -.000)	A mm (+0.13 -0.00)	B in (+.005 -.000)	B in (+0.13 -0.00)	B mm (+.005 -.000)	B mm (+0.13 -0.00)	C in. (+.005 -.000)	C in. (+0.13 -0.00)	C mm (+.005 -.000)	C mm (+0.13 -0.00)	D Basic in	D Basic mm	E in. (+.005 -.000)	E in. (+0.13 -0.00)	E mm (+.005 -.000)	E mm (+0.13 -0.00)
1	.514		13.06		.450		11.43		.787		19.99		.984	24.99	1.233		31.32	
2	.514		13.06		.450		11.43		1.111		28.22		1.312	33.32	1.561		39.65	
3	.514		13.06		.450		11.43		1.653		41.99		1.852	47.04	2.108		53.54	
4	.514		13.06		.450		11.43		2.300		58.42		2.500	63.50	2.749		69.82	
5	.625		15.88		.552		14.02		2.190		55.63		2.406	61.11	2.655		67.44	
6	.688		17.48		.614		15.60		2.315		58.80		2.500	63.50	2.749		69.82	

Application Note for Front Panel Mounting

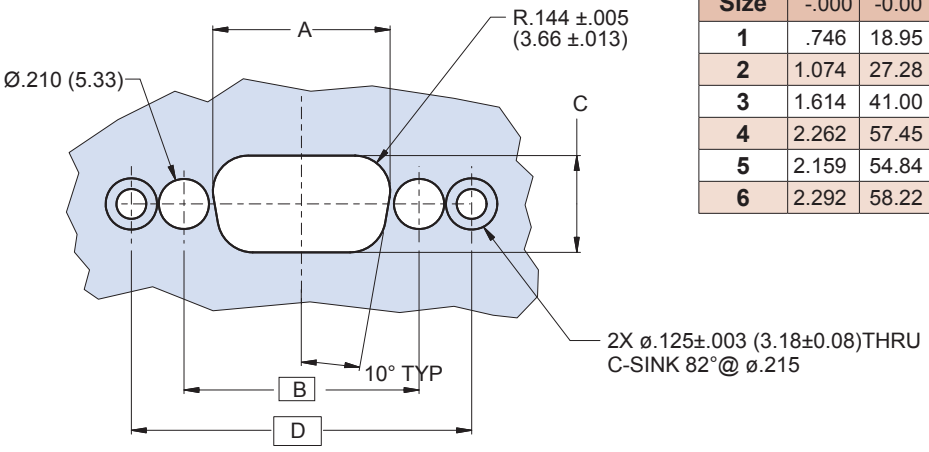
Panels thicker than .062 (1.57) should be machined as shown in order to prevent interference with mounting hardware and backshells. Front-mounted connectors are compatible with female Jackpost 289-015-A or M24308/26-1.

HiPer-D® Panel Cutouts and PCB Footprints

Panel cutout for panel mount connectors with O-ring and panel cutout for float mount connectors

PANEL CUTOUT FOR PANEL MOUNT CONNECTORS WITH O-RING

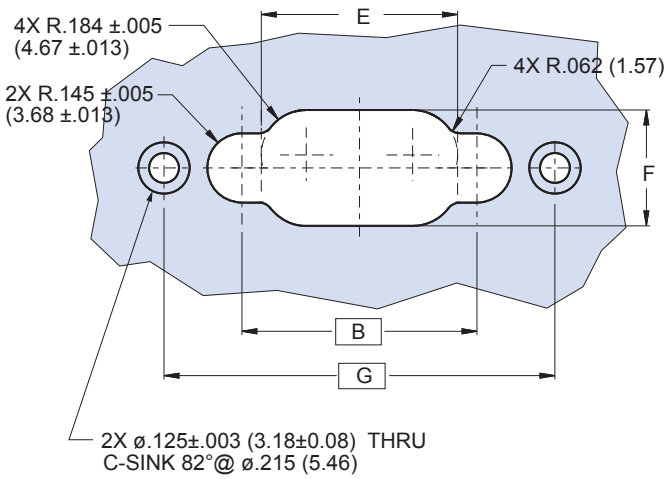
REAR PANEL MOUNT CUTOUT RECOMMENDATIONS
AS VIEWED FROM FRONT FACE OF PANEL



Shell Size	A		B Basic		C		D Basic	
	in	mm			in.	mm		
	+.005 -.000	+0.13 -0.00	in	mm	+.005 -.000	+0.13 -0.00	in	mm
1	.746	18.95	.984	24.99	.409	10.39	1.424	36.17
2	1.074	27.28	1.312	33.32	.409	10.39	1.752	44.50
3	1.614	41.00	1.852	47.04	.409	10.39	2.292	58.22
4	2.262	57.45	2.500	63.50	.409	10.39	2.940	74.68
5	2.159	54.84	2.406	61.11	.521	13.23	2.846	72.29
6	2.292	58.22	2.500	63.50	.583	14.81	2.940	74.68

PANEL CUTOUT FOR FLOAT MOUNT CONNECTORS

REAR PANEL CUTOUT VIEWED FROM FRONT OF PANEL



Shell Size	B Basic		E		F		G Basic	
			in	mm	in.	mm		
	in	mm	+.005 -.000	+0.13 -0.00	+.005 -.000	+0.13 -0.00	in	mm
1	.984	24.99	.826	20.98	.489	12.42	1.636	41.55
2	1.312	33.32	1.154	29.31	.489	12.42	1.964	49.89
3	1.852	47.04	1.694	43.03	.489	12.42	2.504	63.60
4	2.500	63.50	2.342	59.49	.489	12.42	3.152	80.06
5	2.406	61.11	2.239	56.87	.601	15.27	3.058	77.67
6	2.500	63.50	2.372	60.25	.663	16.84	3.152	80.06

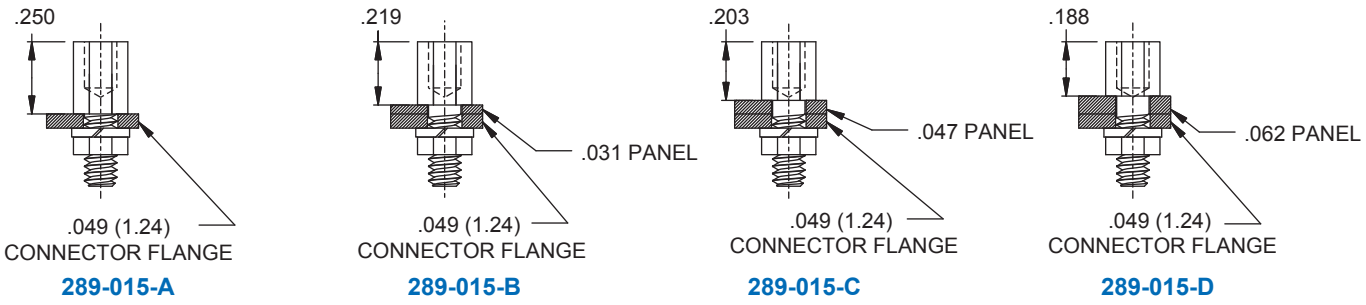
G

HiPer-D® Panel Cutouts and PCB Footprints

289-015 Rear panel mount, jackpost hardware kit

REAR PANEL MOUNTED CABLE CONNECTOR HARDWARE KITS

FOR REAR PANEL MOUNT, USE 289-015 CONFIGURED FOR PANEL THICKNESS PER TABLE I. MAX PANEL THICKNESS OF .062.
IF PANEL THICKER THAN .062, COUNTERBORE PER FIGURE 1.



HARDWARE KIT

Dimension "A" changes to accomodate Different panel thicknesses

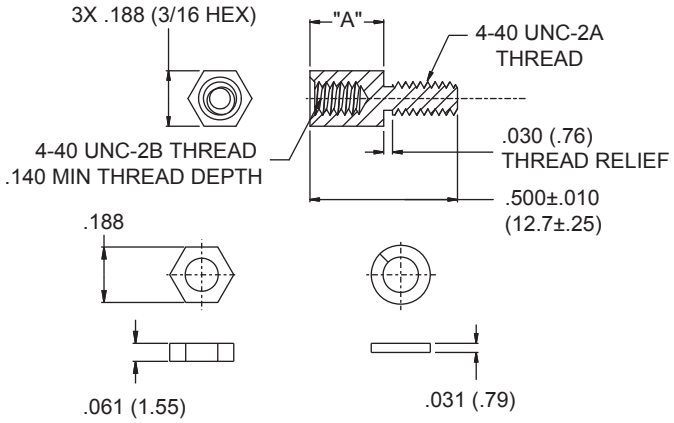
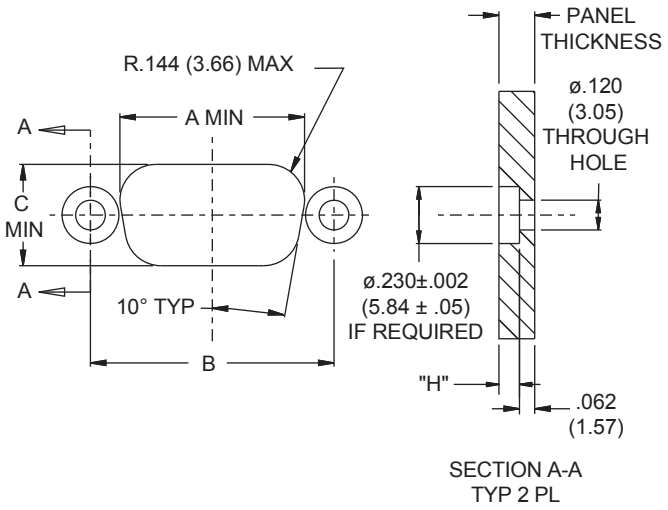


FIGURE 1



REAR PANEL MOUNT CUTOUT RECOMMENDATIONS
AS VIEWED FROM FRONT FACE OF PANEL
ø.230 COUNTERBORE REQUIRED ON PANELS LARGER THAN .062

Table III: Panel Thickness

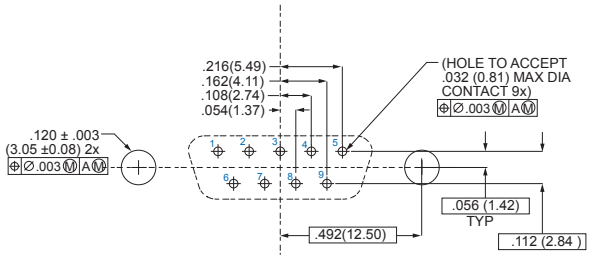
Panel Thickness	Jackpost to be used	RPM Counterbore		H	
		In	mm	In	mm
NO PANEL	289-015-A	N/A	N/A	N/A	N/A
0.031	289-015-B	N/A	N/A	N/A	N/A
0.047	289-015-C	N/A	N/A	N/A	N/A
0.062	289-015-D	N/A	N/A	N/A	N/A
0.093	289-015-D	ø.230±.005	ø5.84 ± .127	0.031	0.79
0.104	289-015-D	ø.230±.005	ø5.84 ± .127	0.042	1.07
0.125	289-015-D	ø.230±.005	ø5.84 ± .127	0.063	1.60
0.156	289-015-D	ø.230±.005	ø5.84 ± .127	0.094	2.39

G

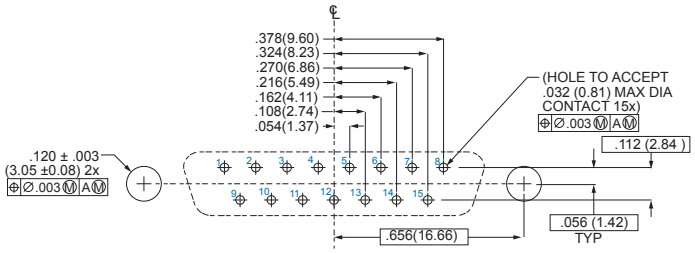
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density pin connectors with straight PC tails

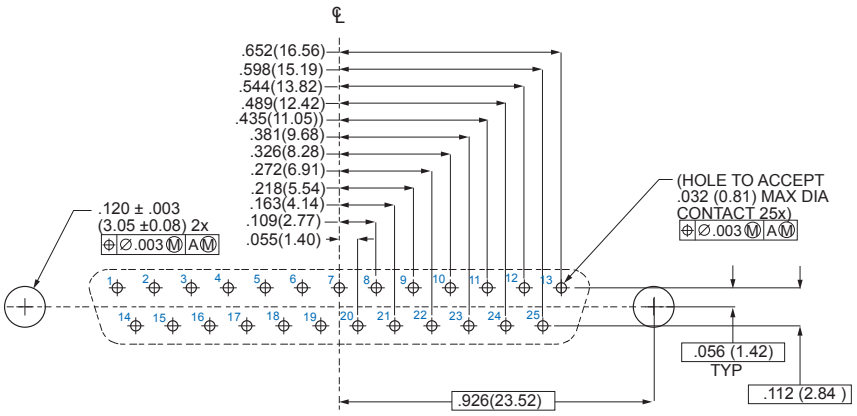
PCB FOOTPRINT FOR 280-022P AND 280-026P CONNECTORS



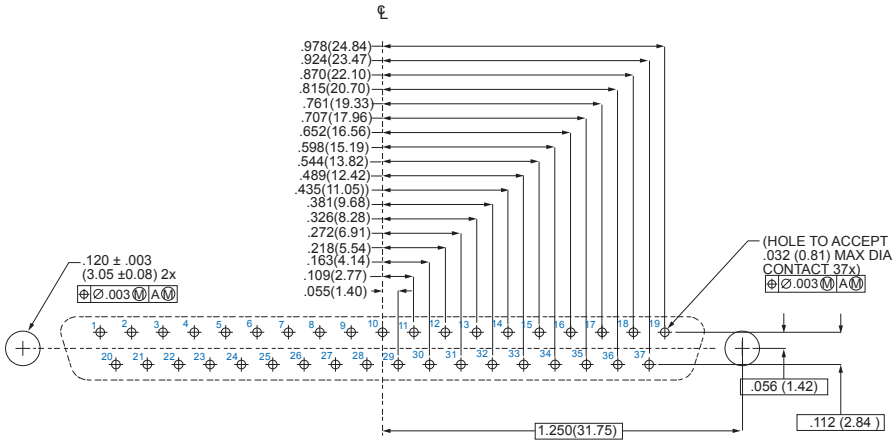
1S9
9 #20



2S15
15 #20



3S25
25 #20

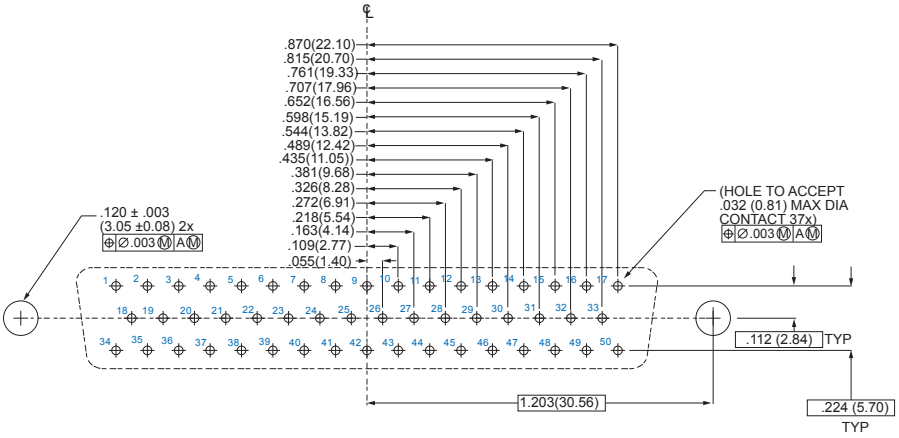


4S37
37 #20

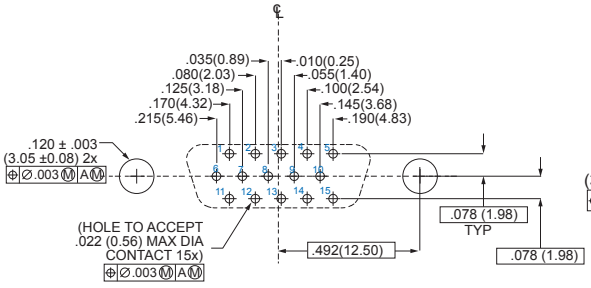
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density pin connectors with straight PC tails

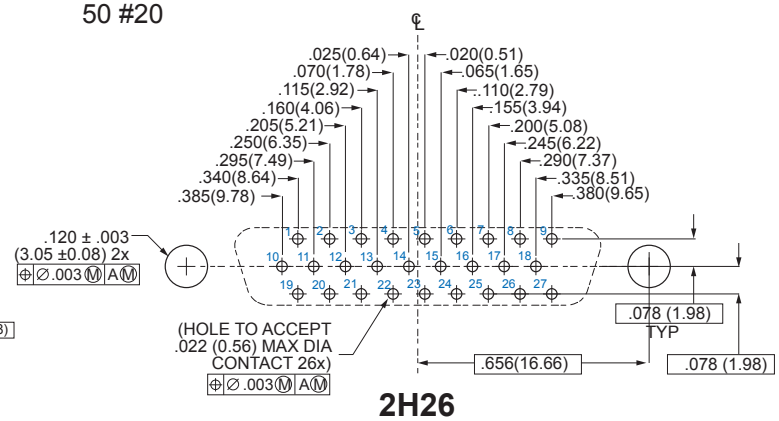
PCB FOOTPRINT FOR 280-022P AND 280-026P CONNECTORS



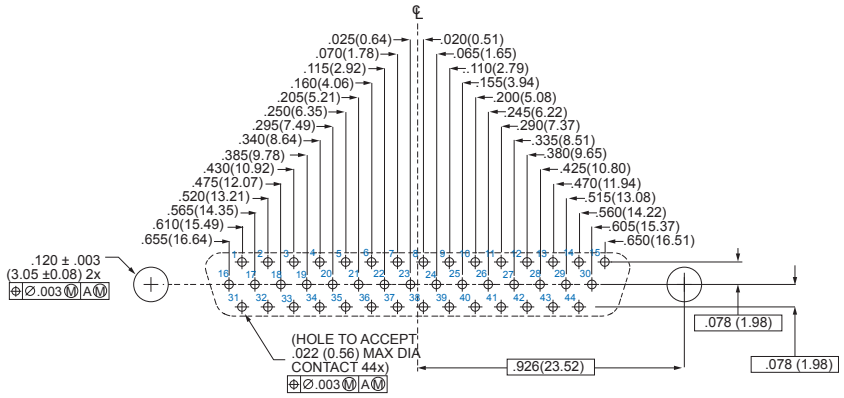
5S50
50 #20



1H15
15 #22



2H26
26 #22



3H44
44 #22

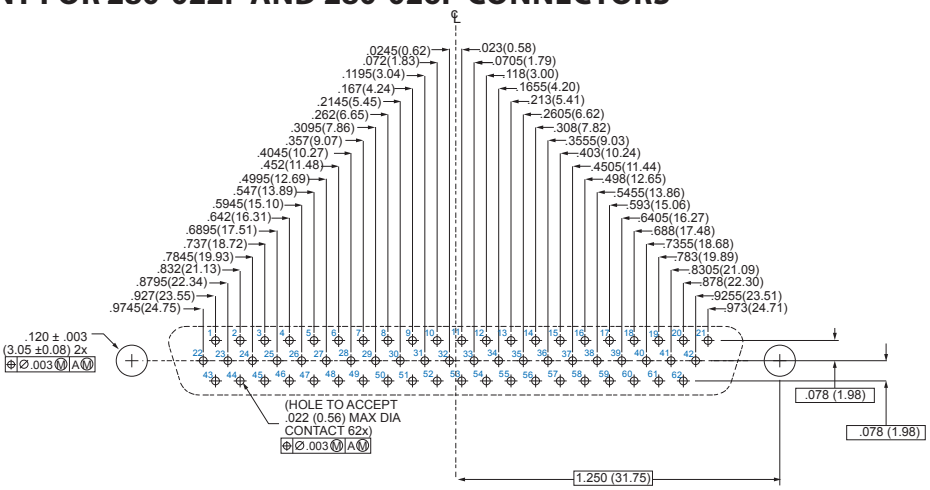
G

HiPer-D® Panel Cutouts and PCB Footprints

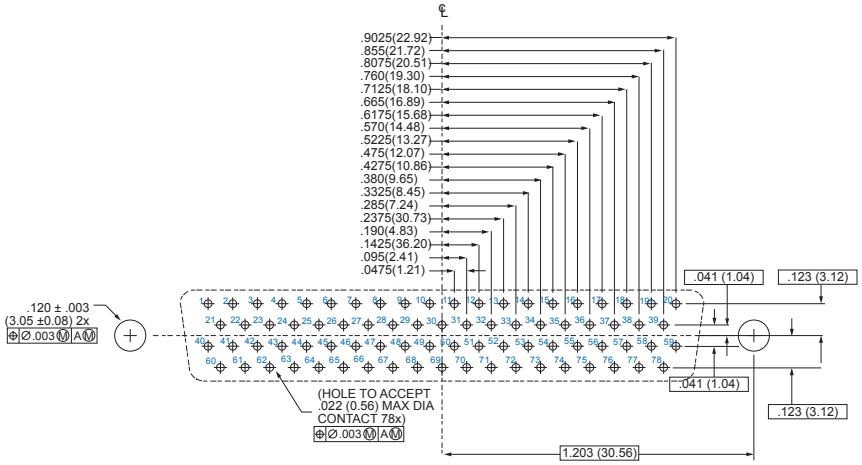
PCB footprints for standard and high density pin connectors with straight PC tails

PCB FOOTPRINT FOR 280-022P AND 280-026P CONNECTORS

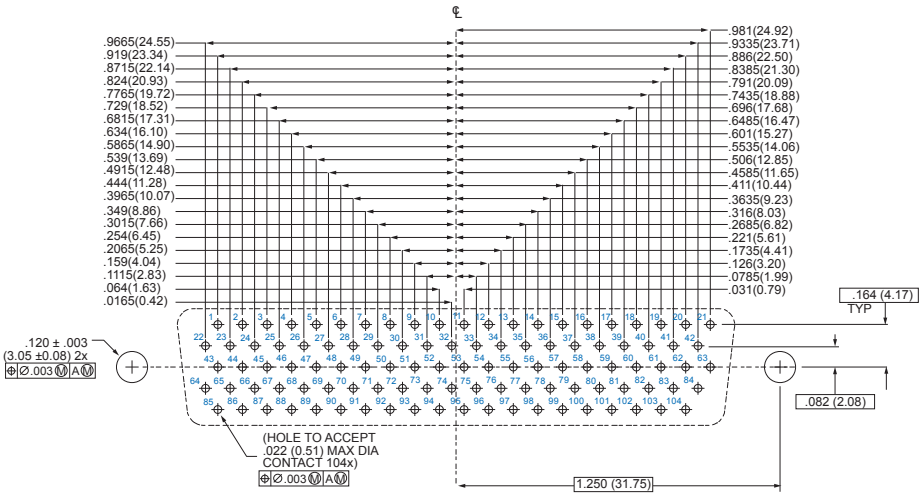
4H62
62 #22



5H78
78 #22



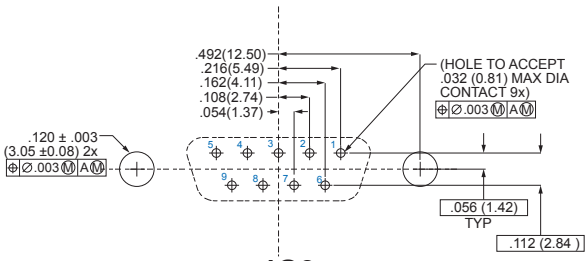
6H104
104 #22



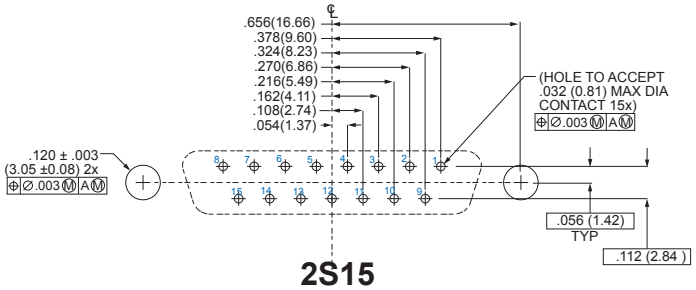
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density socket connectors with straight PC tails

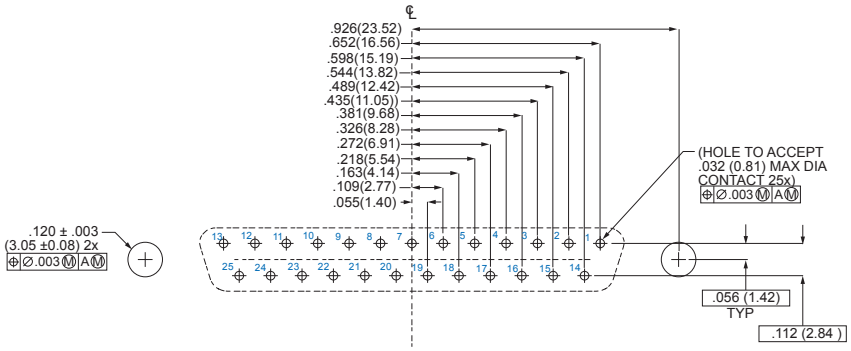
PCB FOOTPRINT FOR 280-023S AND 280-027S CONNECTORS



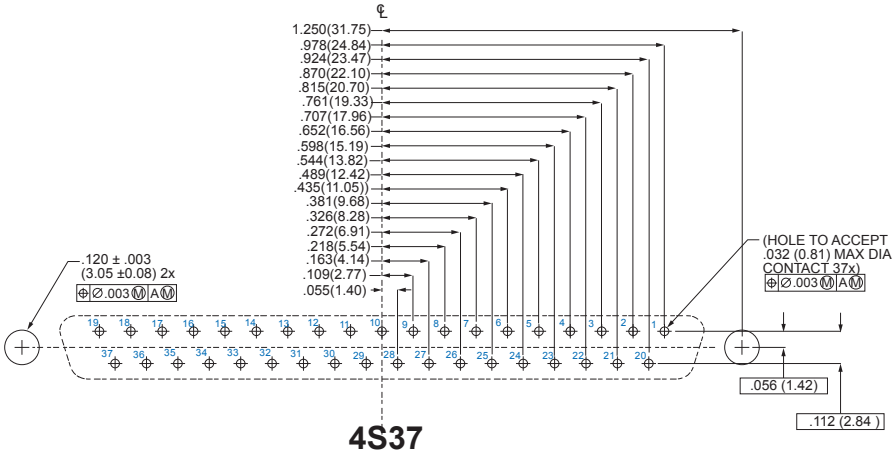
1S9
9 #20



2S15
15 #20



3S25
25 #20

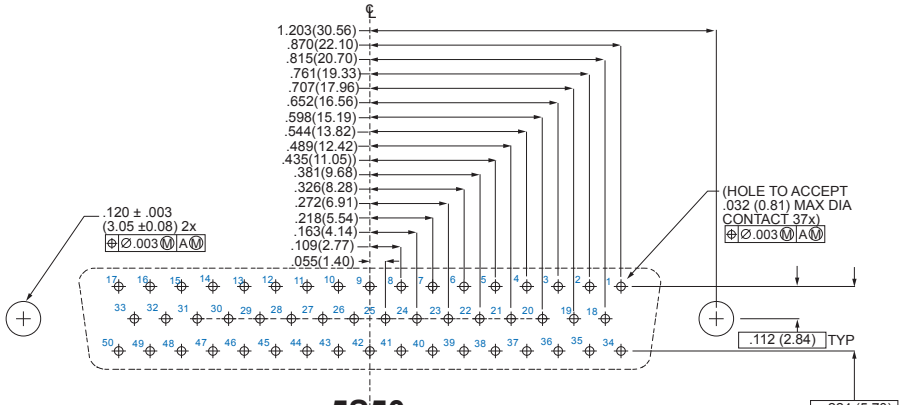


4S37
37 #20

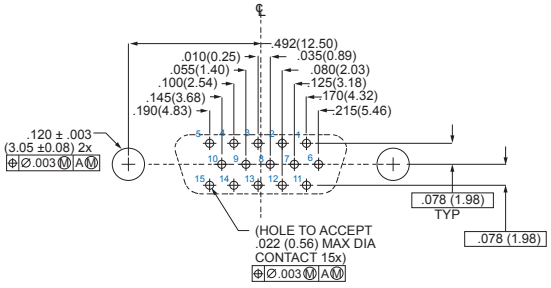
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density socket connectors with straight PC tails

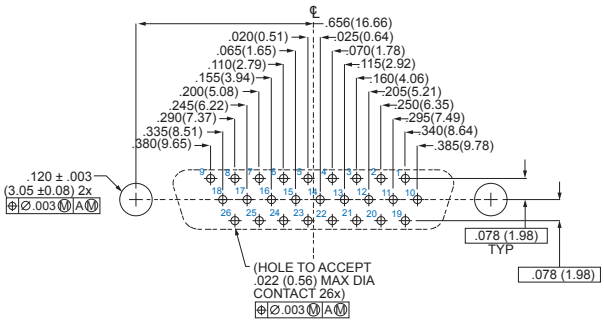
PCB FOOTPRINT FOR 280-023S AND 280-027S CONNECTORS



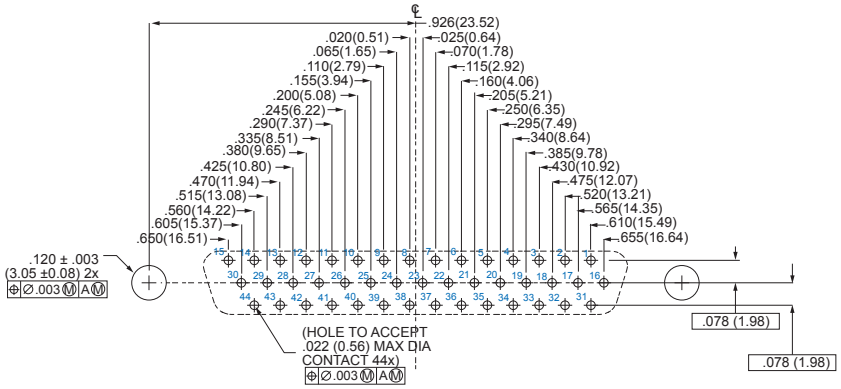
5S50
50 #20



1H15
15 #22



2H26
26 #22



3H44
44 #22

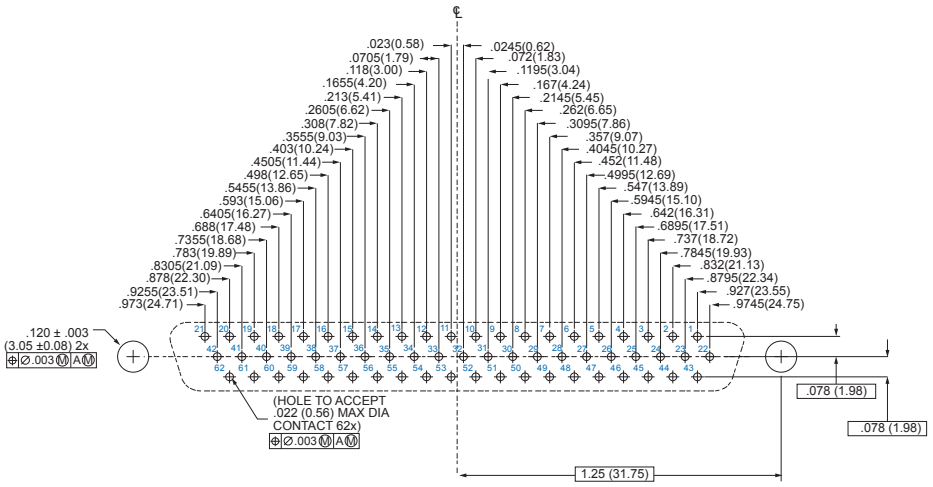
G

HiPer-D® Panel Cutouts and PCB Footprints

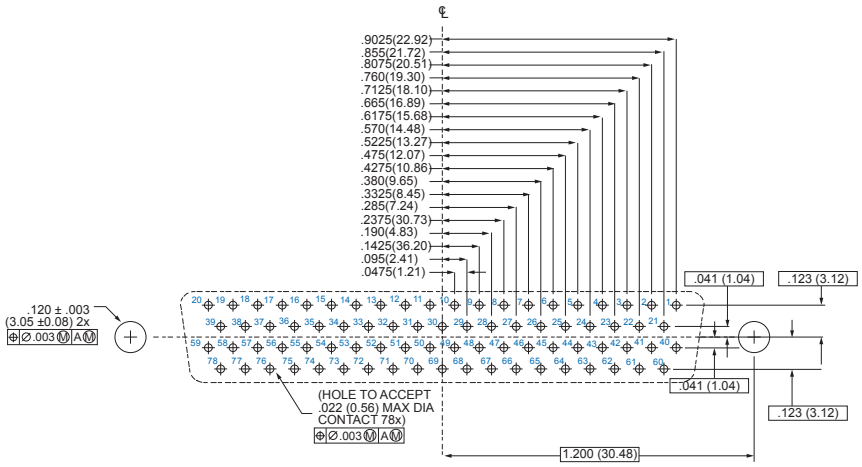
PCB footprints for standard and high density socket connectors with straight PC tails

PCB FOOTPRINT FOR 280-023S AND 280-027S CONNECTORS

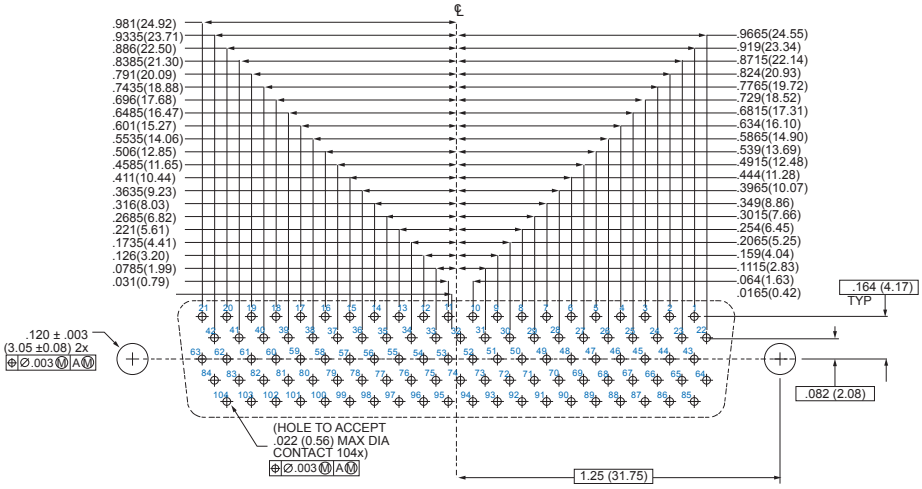
4H62
62 #22



5H78
78 #22



6H104
104 #22



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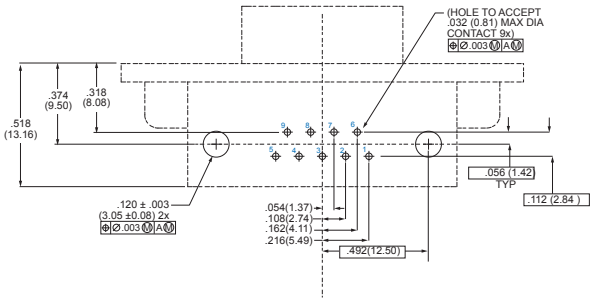
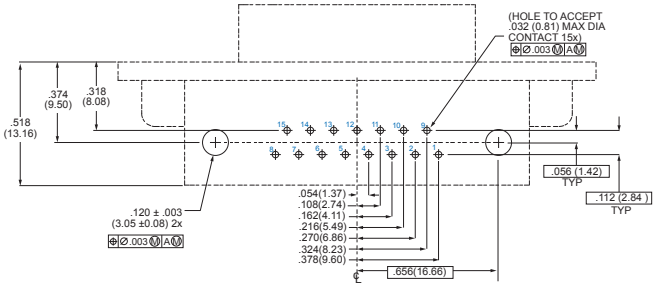
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density pin connectors with right angle PC tails

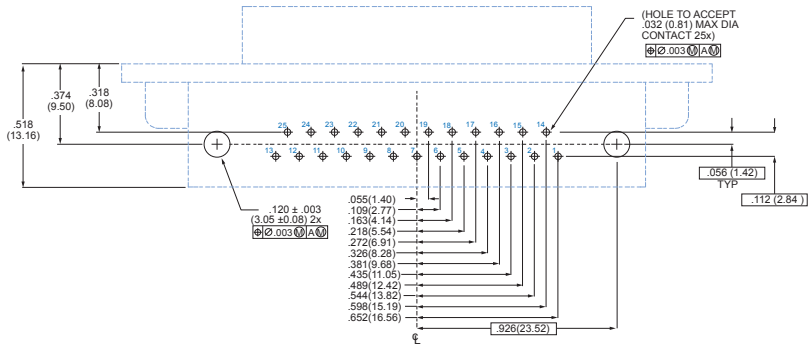
PCB FOOTPRINT FOR 280-024P AND 280-028P CONNECTORS



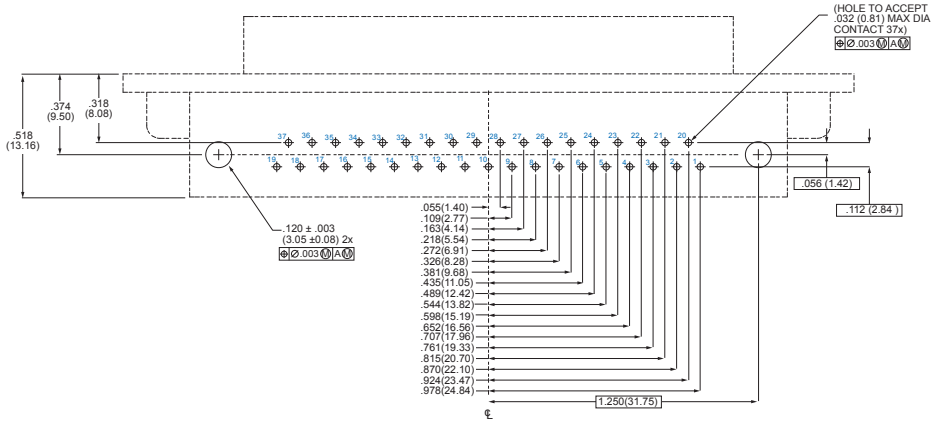
1S9
9 #20



2S15
15 #20



3S25
25 #20

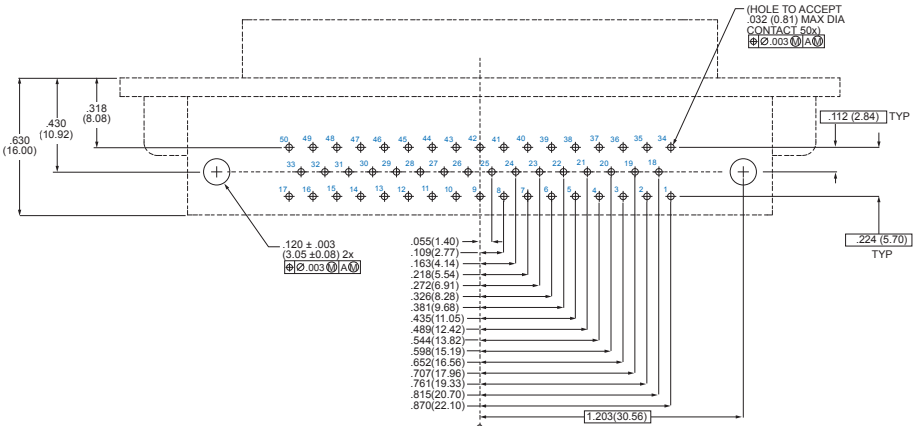


4S37
37 #20

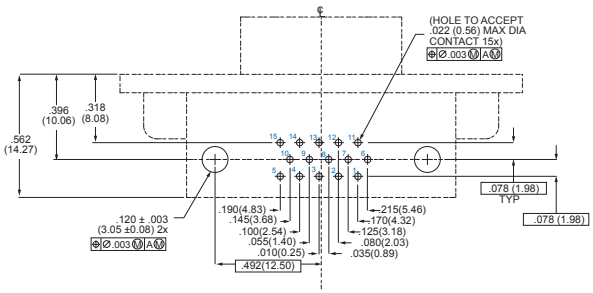
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density pin connectors with right angle PC tails

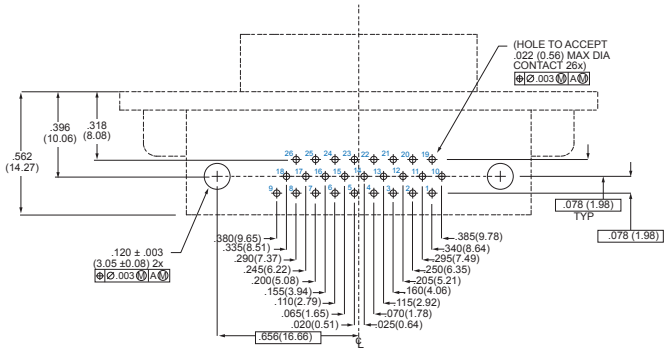
PCB FOOTPRINT FOR 280-024P AND 280-028P CONNECTORS



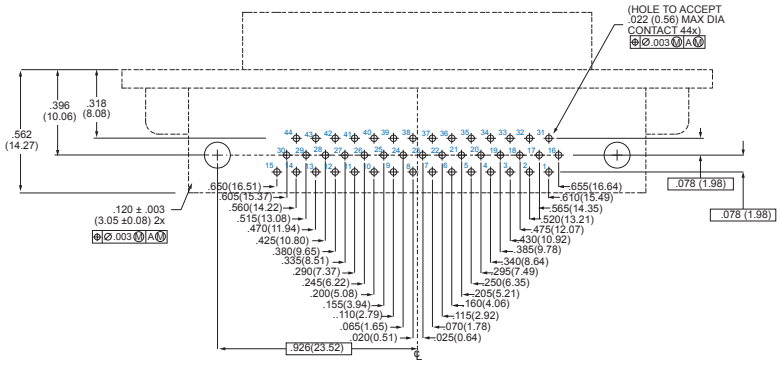
5S50
50 #20



1H15
15 #22



2H26
26 #22



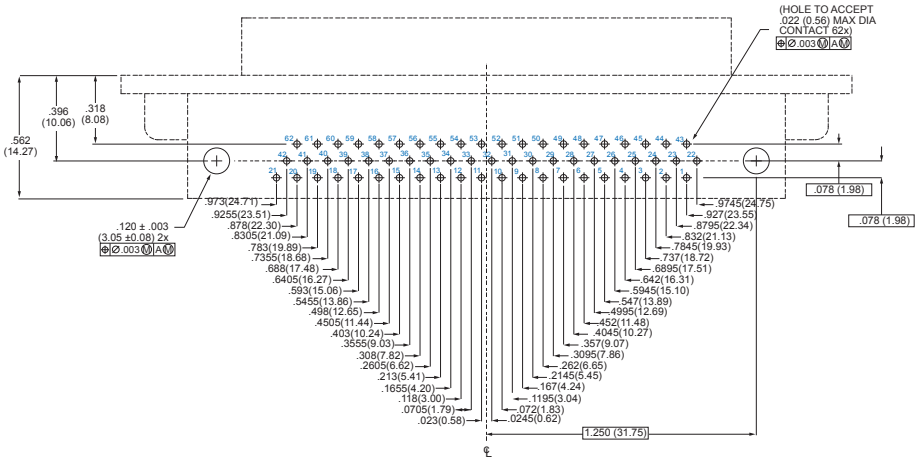
3H44
44 #22

HiPer-D® Panel Cutouts and PCB Footprints

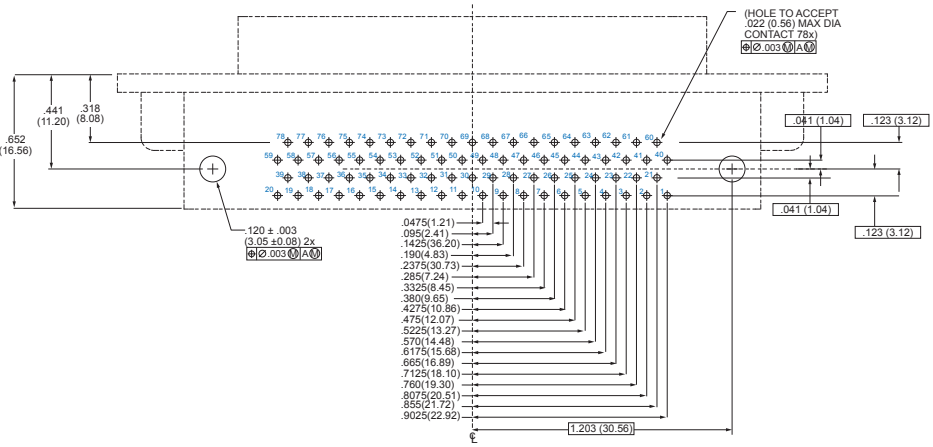
PCB footprints for standard and high density pin connectors with right angle PC tails

PCB FOOTPRINT FOR 280-024P AND 280-028P CONNECTORS

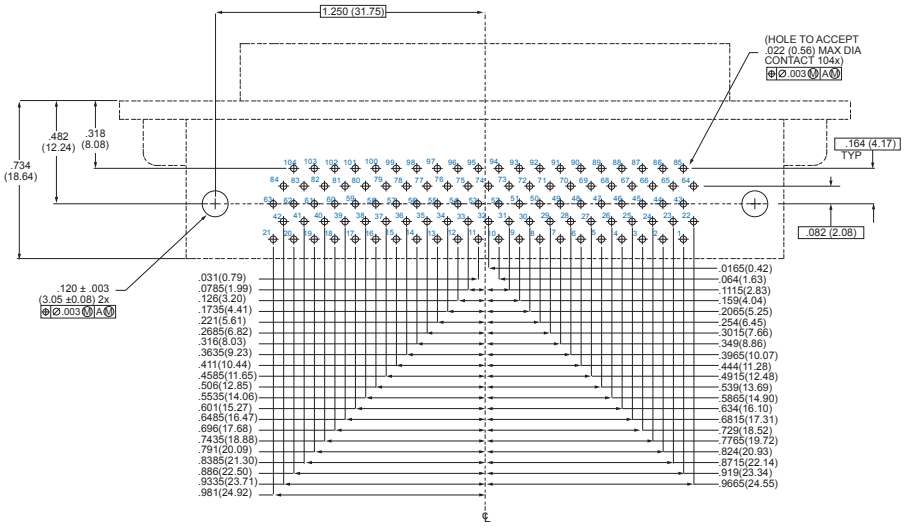
4H62
62 #22



5H78
78 #22



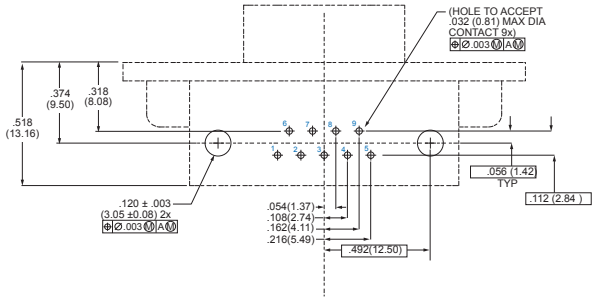
6H104
104 #22



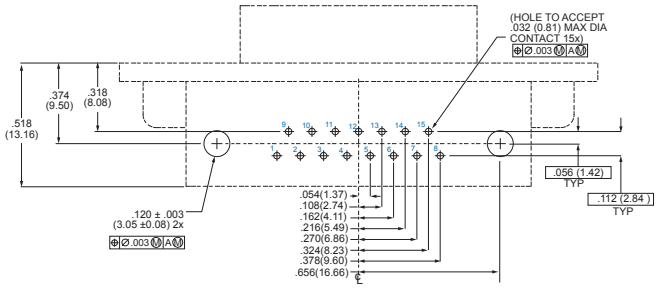
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density socket connectors with right angle PC tails

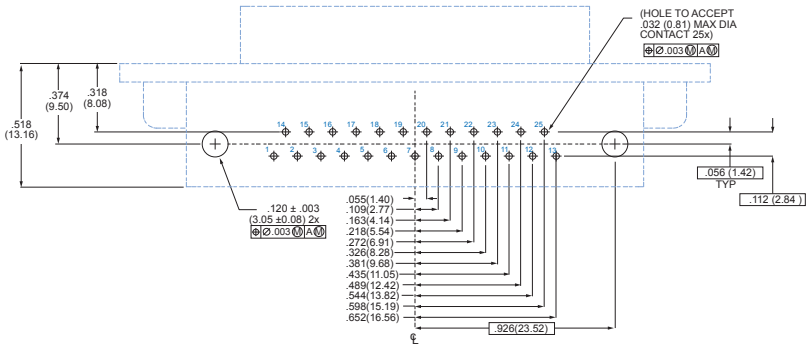
PCB FOOTPRINT FOR 280-025S AND 280-029S CONNECTORS



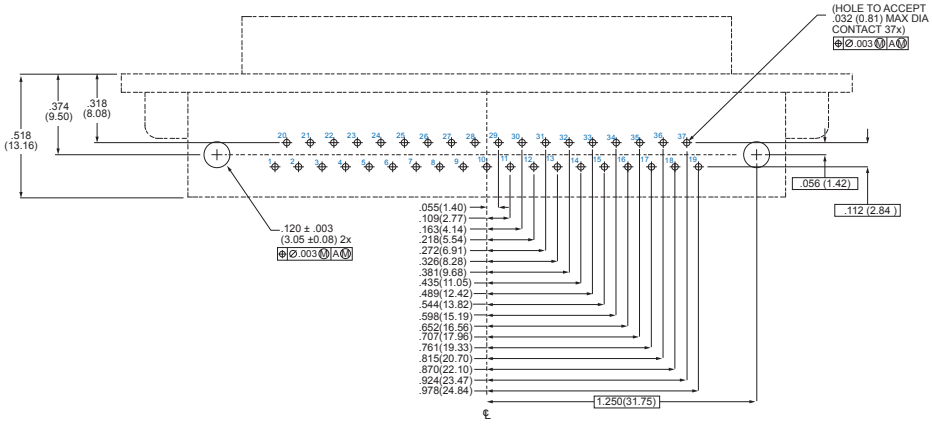
1S9
9 #20



2S15
15 #20



3S25
25 #20

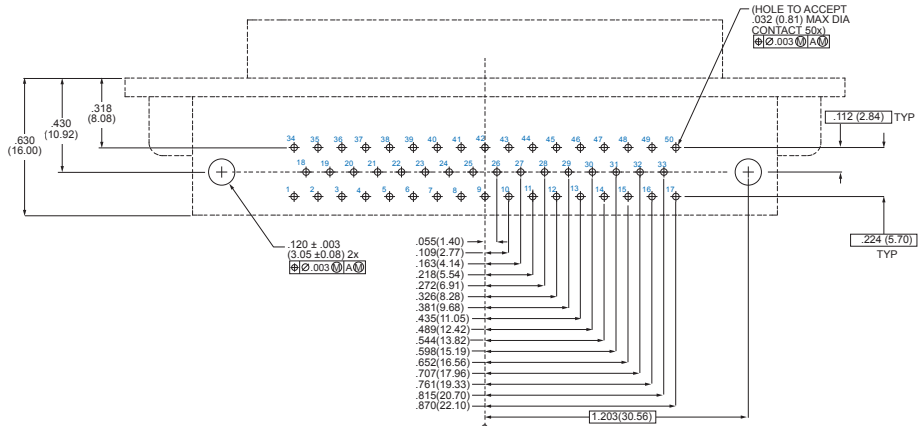


4S37
37 #20

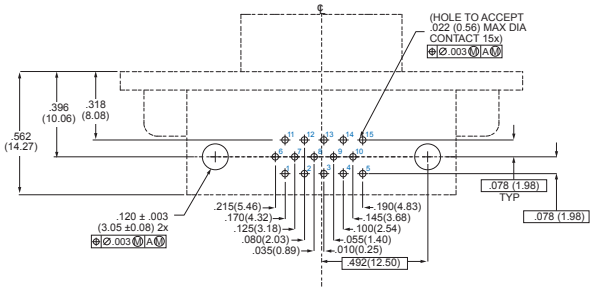
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for standard and high density socket connectors with right angle PC tails

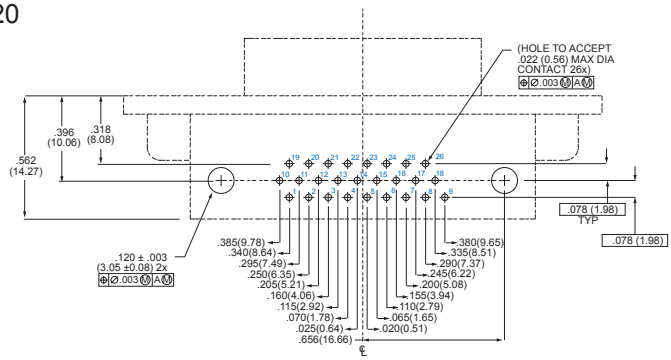
PCB FOOTPRINT FOR 280-025S AND 280-029S CONNECTORS



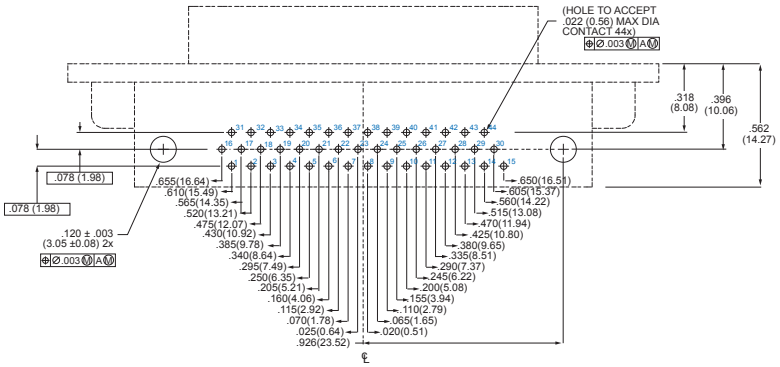
5S50
50 #20



1H15
15 #22



2H26
26 #22



3H44
44 #22

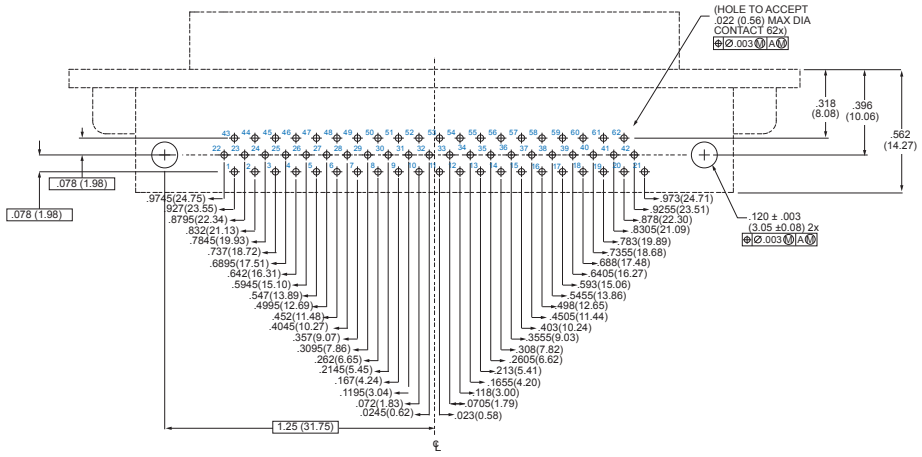
G

HiPer-D® Panel Cutouts and PCB Footprints

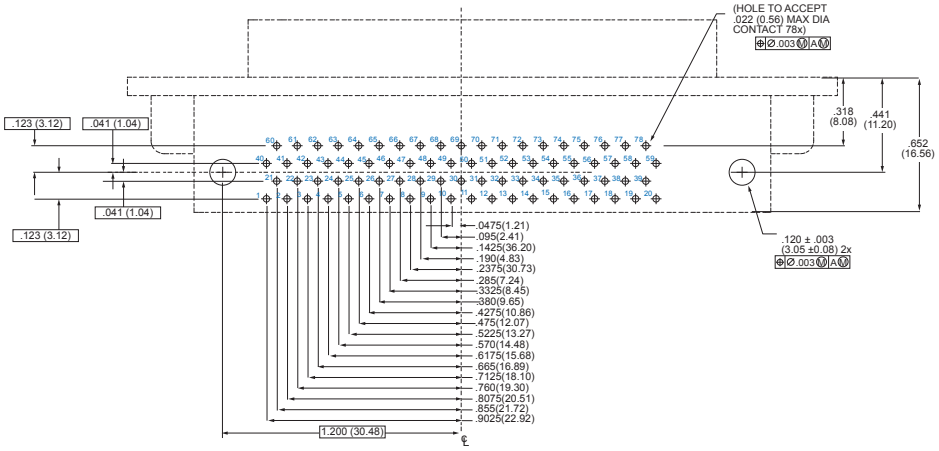
PCB footprints for standard and high density socket connectors with right angle PC tails

PCB FOOTPRINT FOR 280-025S AND 280-029S CONNECTORS

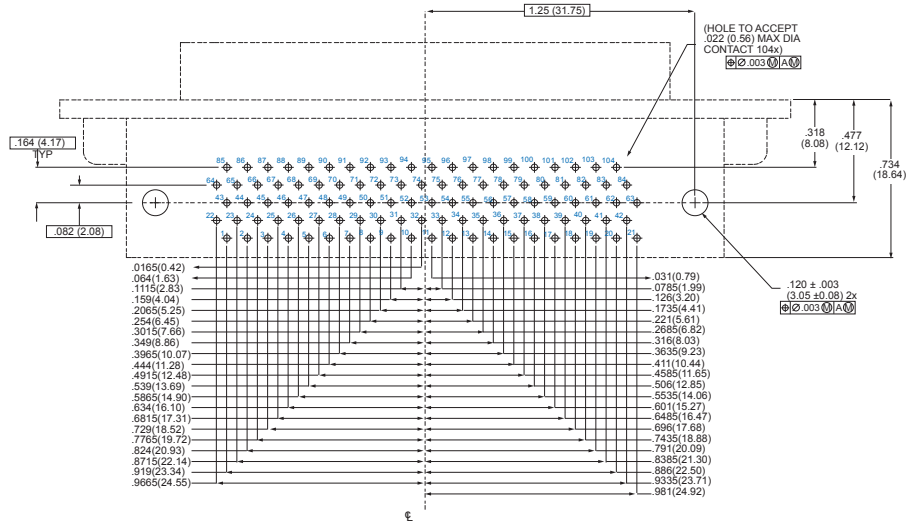
4H62
62 #22



5H78
78 #22



6H104
104 #22

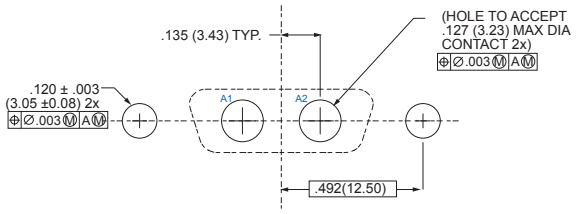


G

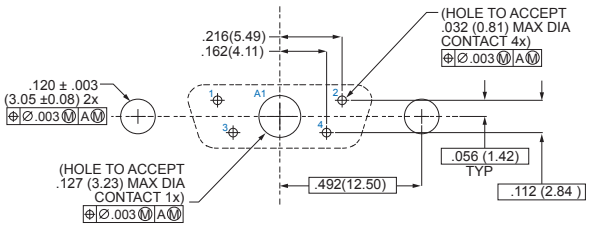
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo pin connectors with straight PC tails

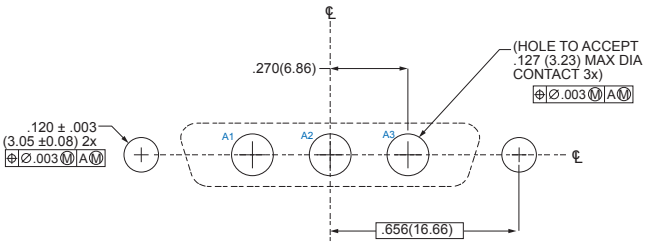
PCB FOOTPRINT FOR 280-050P AND 280-054P COMBO CONNECTORS



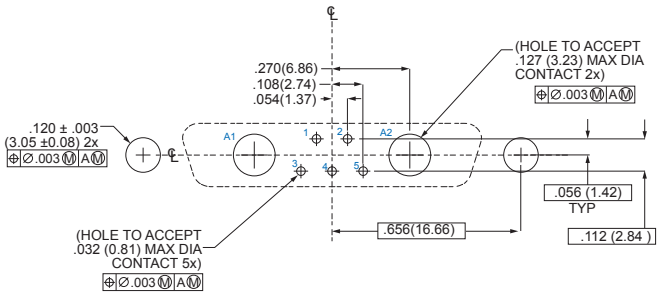
1-2P2
2 #8



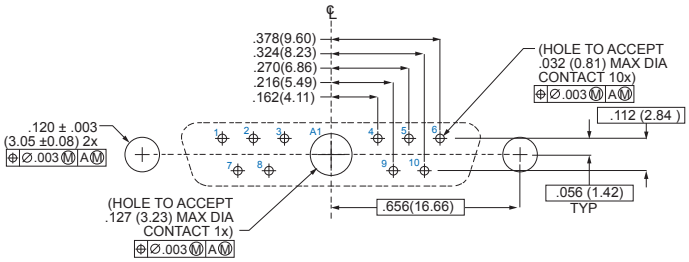
1-5P1
1 #8, 4 #20



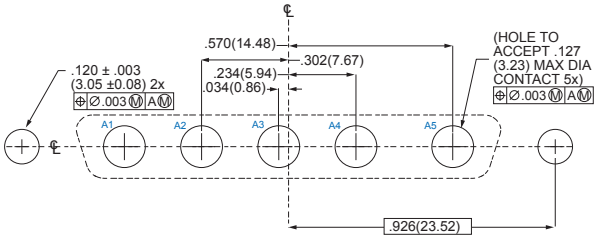
2-3P3
3 #8



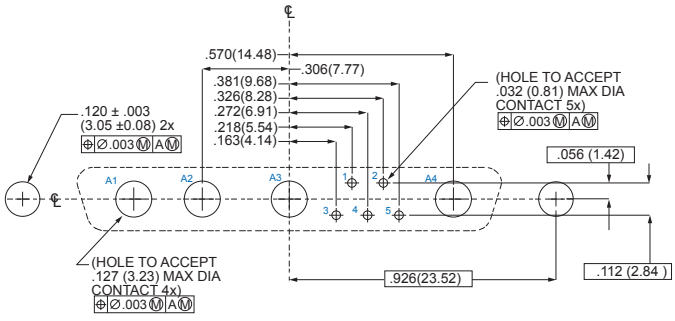
2-7P2
2 #8, 5 #20



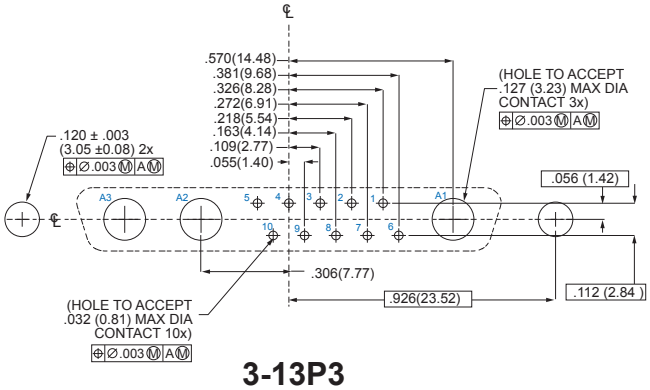
2-11P1
1 #8, 10 #20



3-5P5
5 #8



3-9P4
4 #8, 5 #20



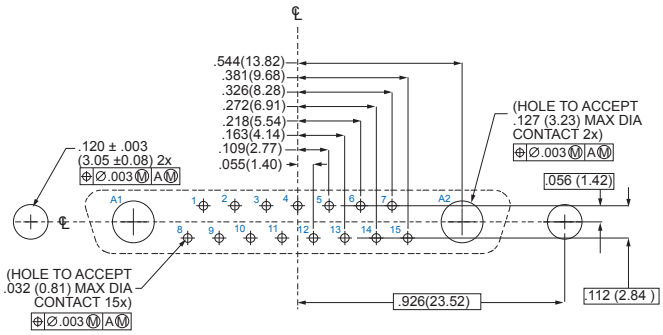
3-13P3
3 #8, 10 #20

G

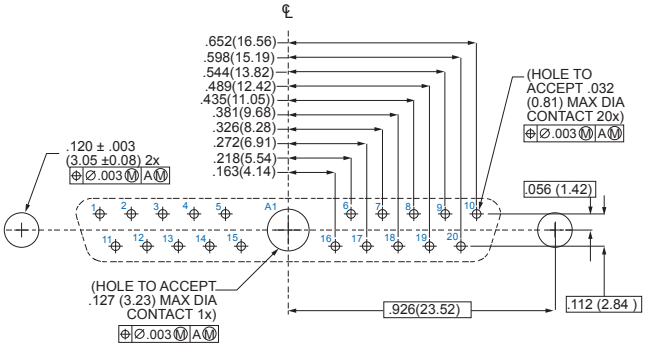
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo pin connectors with straight PC tails

PCB FOOTPRINT FOR 280-050P AND 280-054P COMBO CONNECTORS

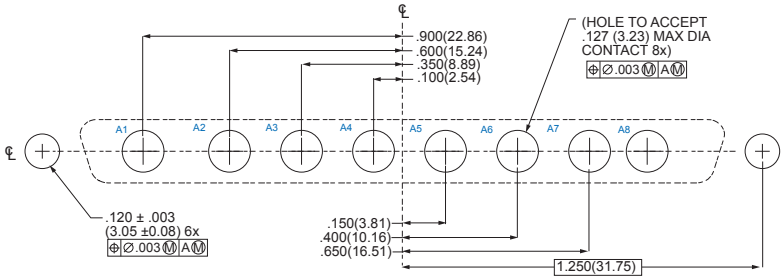


3-17P2
2 #8, 15 #20

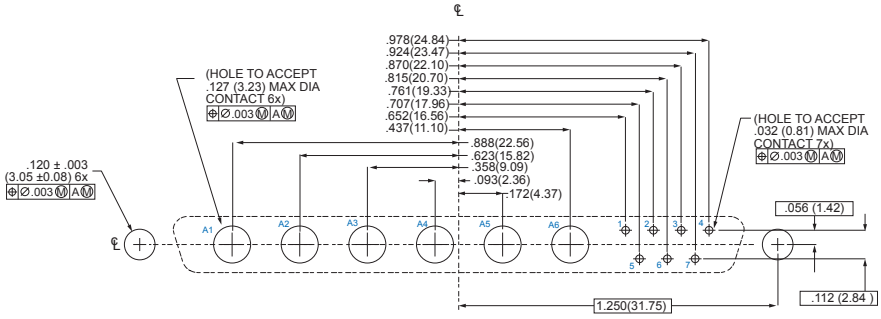


3-21P1
1 #8, 20 #20

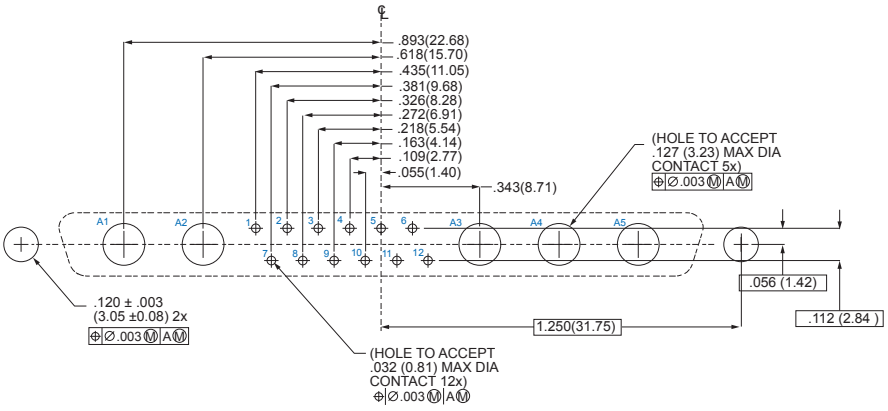
4-8P8
8 #8



4-13P6
6 #8, 7 #20



4-17P5
5 #8, 12 #20



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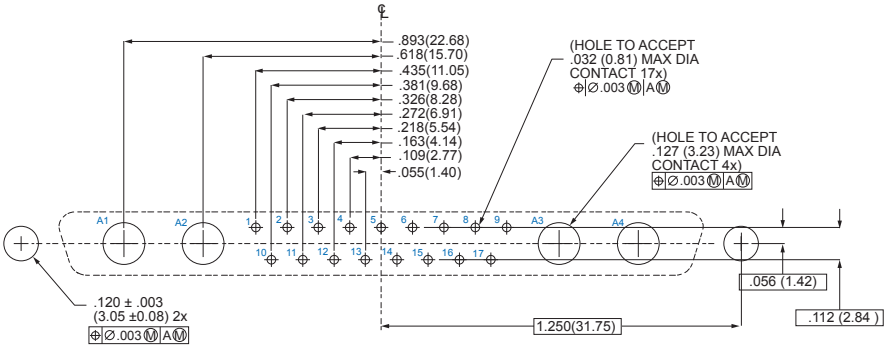
HiPer-D® Panel Cutouts and PCB Footprints

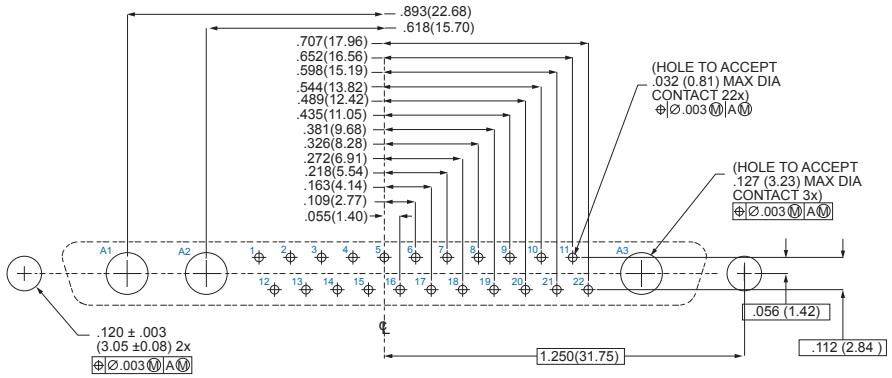
PCB footprints for combo pin connectors with straight PC tails

PCB FOOTPRINT FOR 280-050P AND 280-054P COMBO CONNECTORS

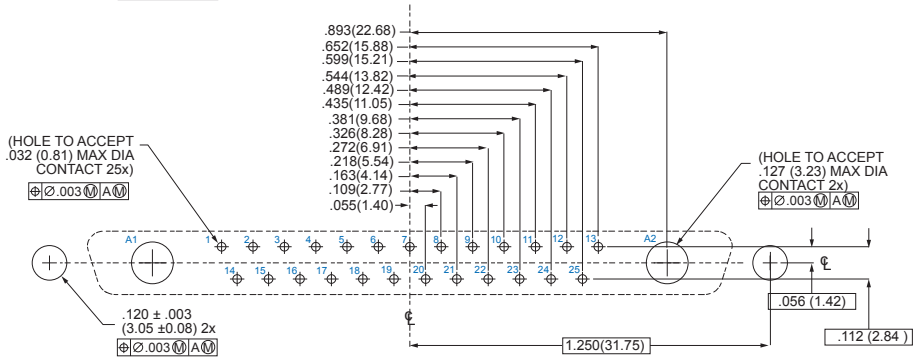
4-21PA4
4 #8, 17 #20



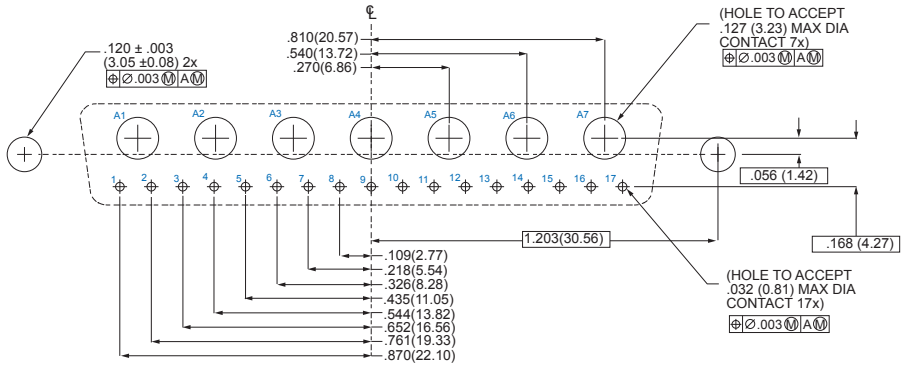
4-25P3
3 #8, 22 #20



4-27P2
2 #8, 25 #20



5-24P7
7 #8, 17 #20



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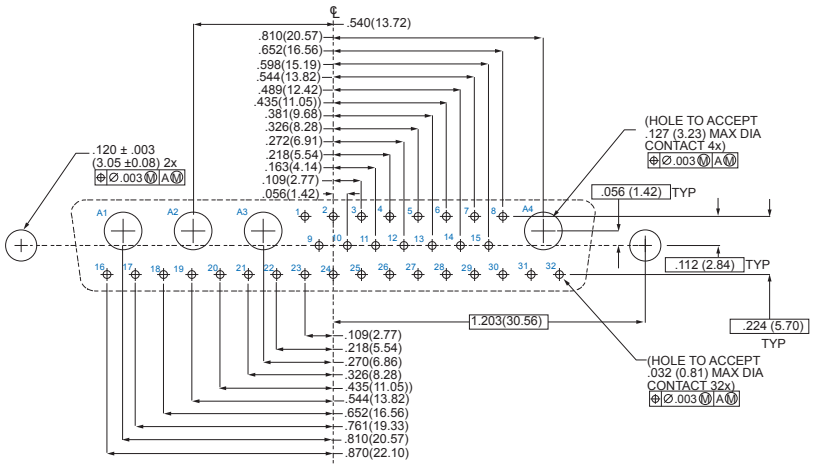
HiPer-D® Panel Cutouts and PCB Footprints

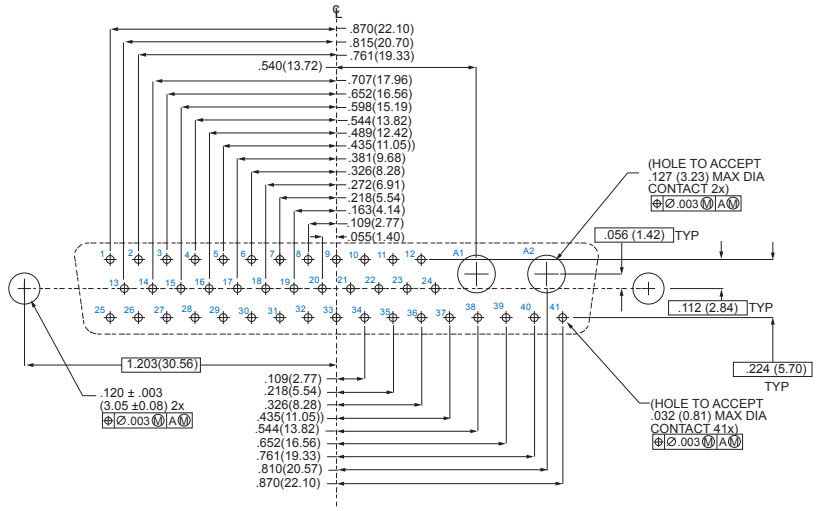
PCB footprints for combo pin connectors with straight PC tails

PCB FOOTPRINT FOR 280-050P AND 280-054P COMBO CONNECTORS

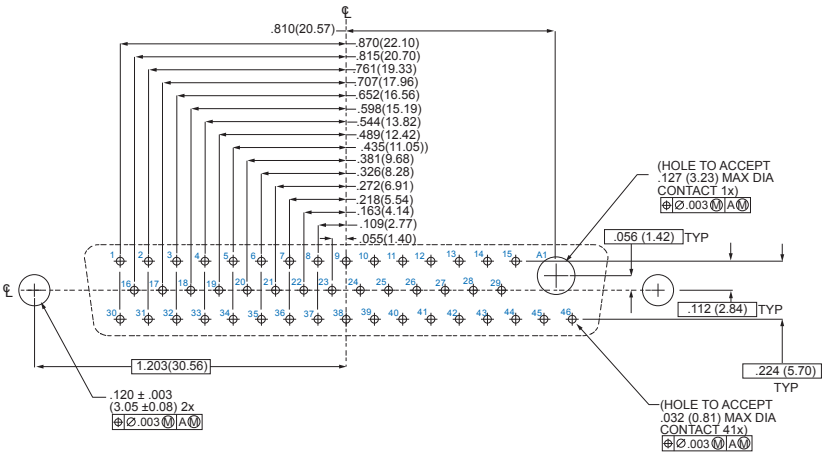
5-36P4
4 #8, 32 #20



5-43P2
2 #8, 41 #20



5-47P1
1 #8, 46 #20



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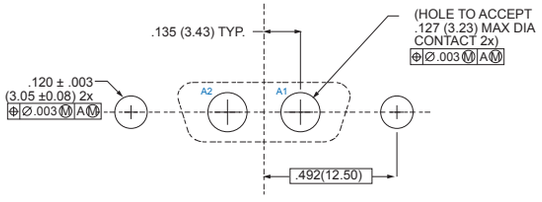
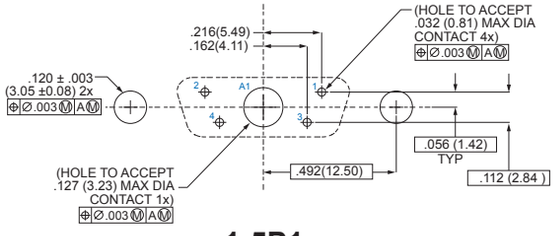
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo socket connectors with straight PC tails

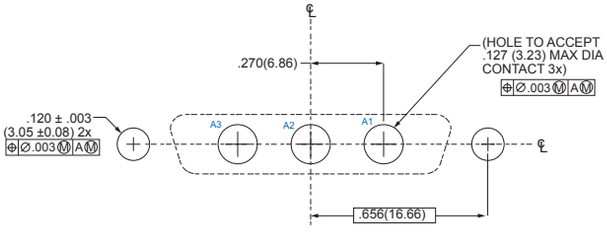
PCB FOOTPRINT FOR 280-051S AND 280-055S COMBO CONNECTORS



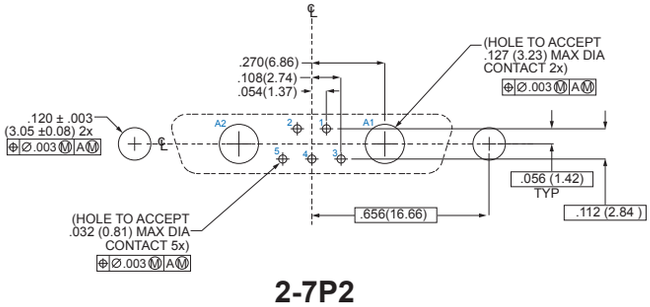
1-2P2
2 #8



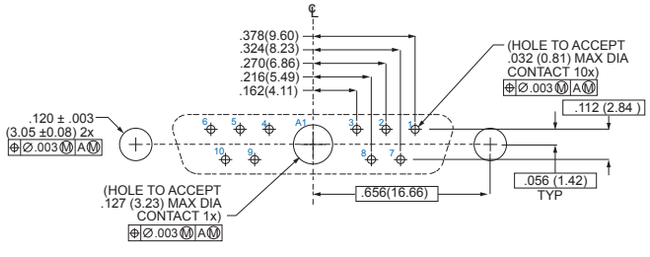
1-5P1
1 #8, 4 #20



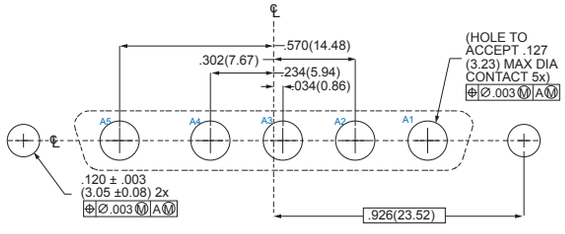
2-3P3
3 #8



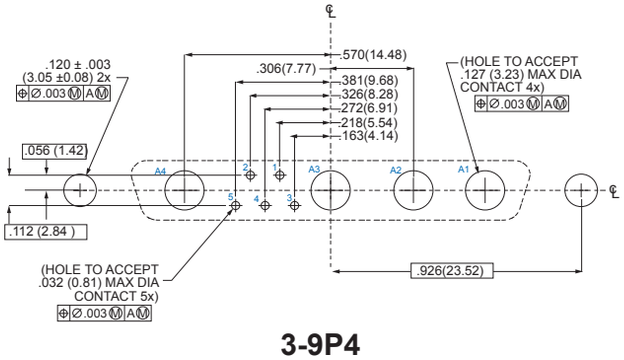
2-7P2
2 #8, 5 #20



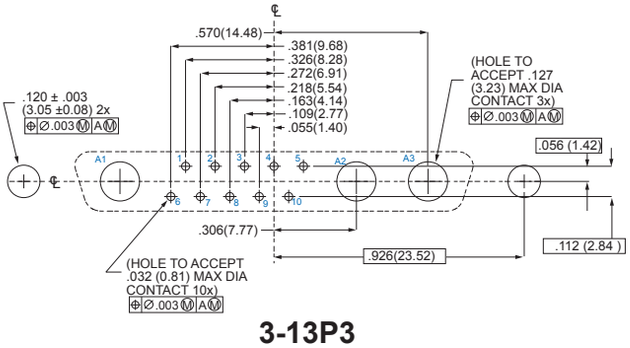
2-11P1
1 #8, 10 #20



3-5P5
5 #8



3-9P4
4 #8, 5 #20



3-13P3
3 #8, 10 #20

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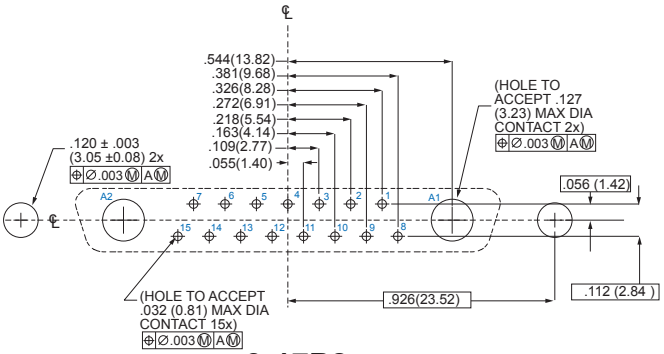
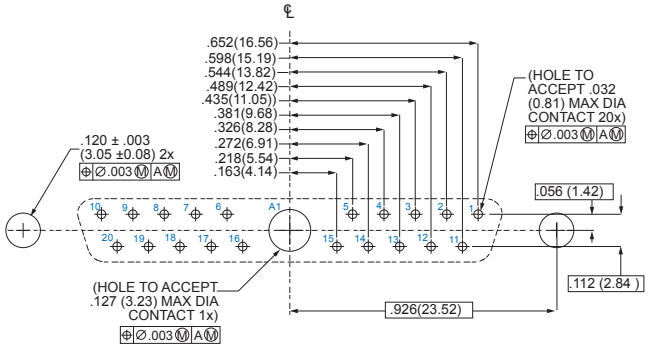
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo socket connectors with straight PC tails

PCB FOOTPRINT FOR 280-051S AND 280-055S COMBO CONNECTORS

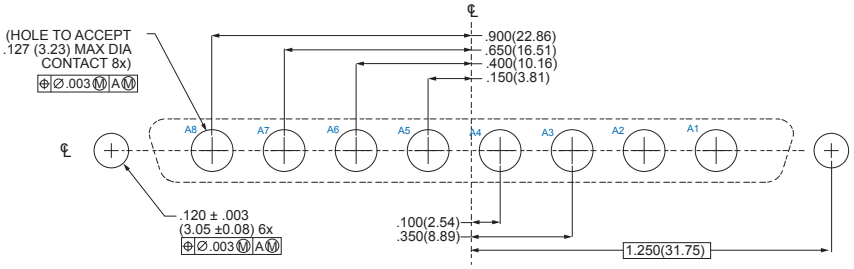


3-17P2
2 #8, 15 #20

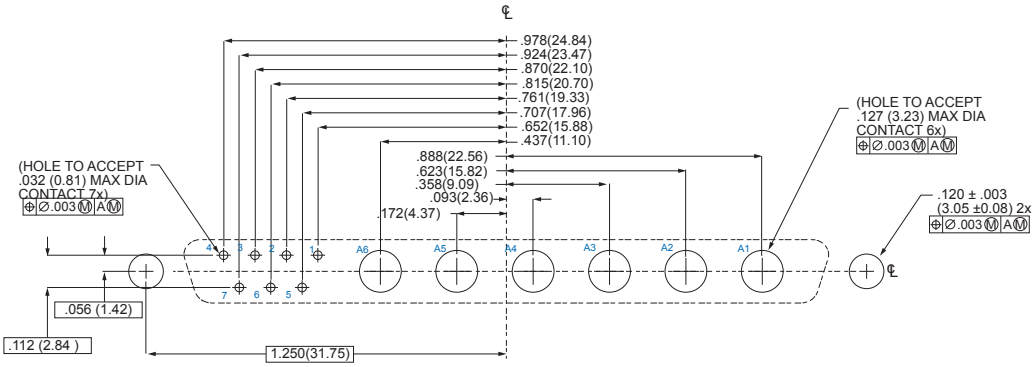


3-21P1
1 #8, 20 #20

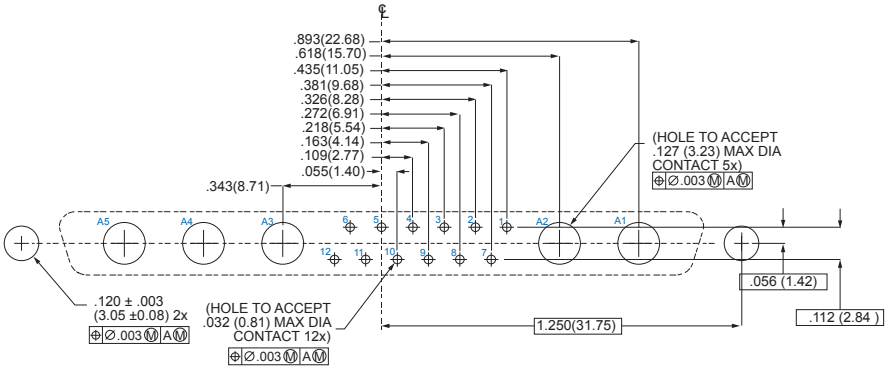
4-8P8
8 #8



4-13P6
6 #8, 7 #20



4-17P5
5 #8, 12 #20



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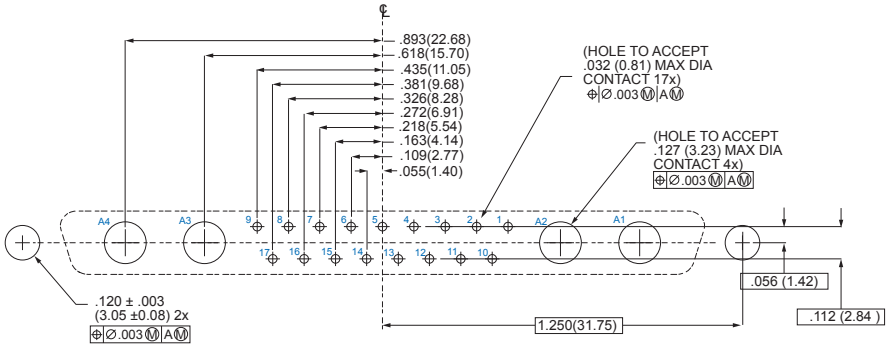
HiPer-D® Panel Cutouts and PCB Footprints

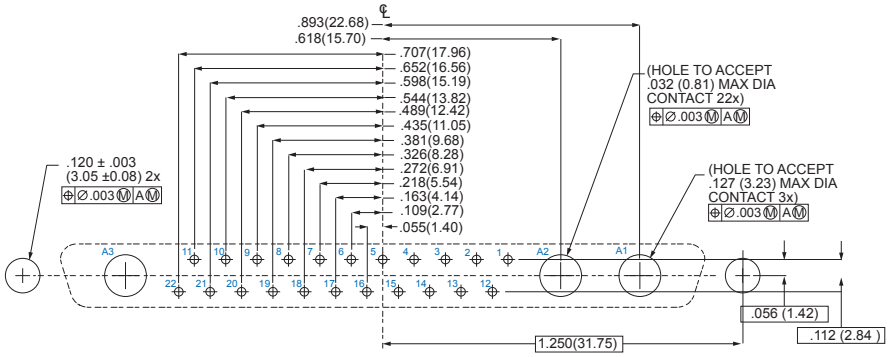
PCB footprints for combo socket connectors with straight PC tails

PCB FOOTPRINT FOR 280-051S AND 280-055S COMBO CONNECTORS

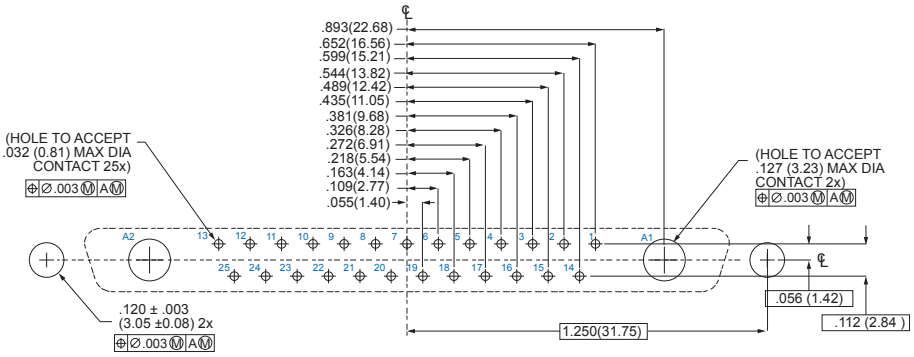
4-21PA4
4 #8, 17 #20



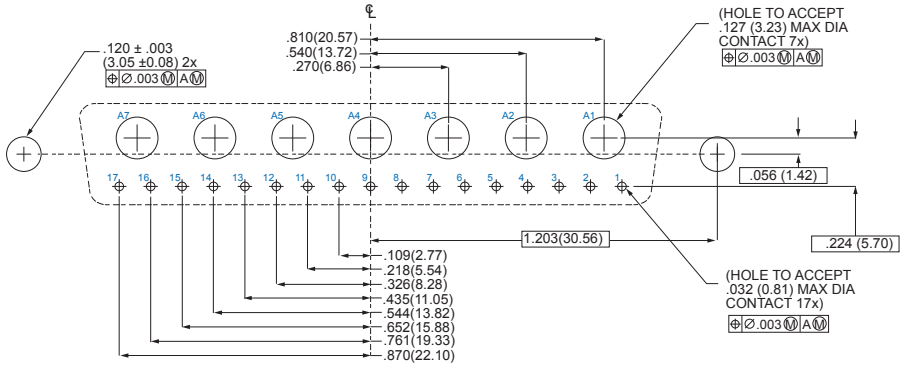
4-25P3
3 #8, 22 #20



4-27P2
2 #8, 25 #20



5-24P7
7 #8, 17 #20



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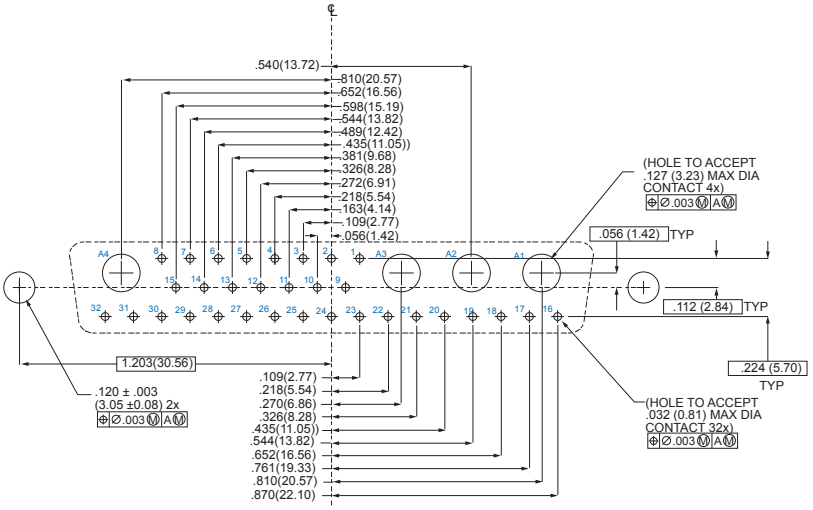
HiPer-D® Panel Cutouts and PCB Footprints

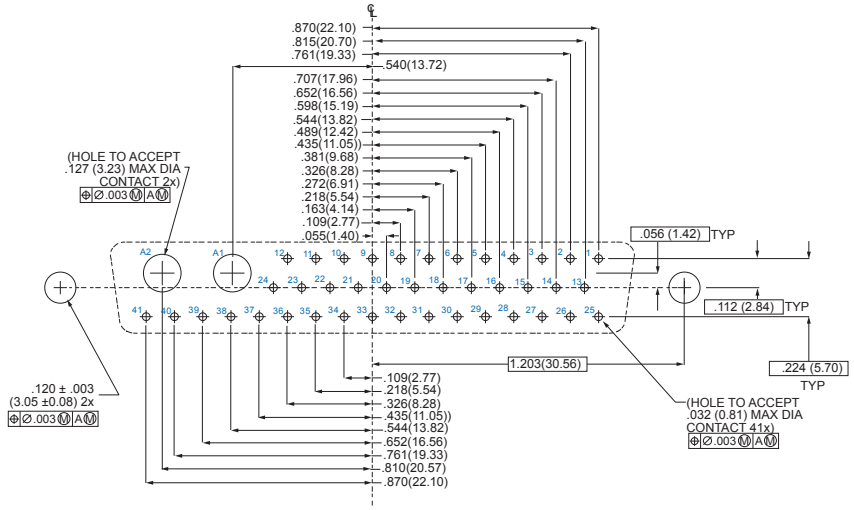
PCB footprints for combo socket connectors with straight PC tails

PCB FOOTPRINT FOR 280-051S AND 280-055S COMBO CONNECTORS

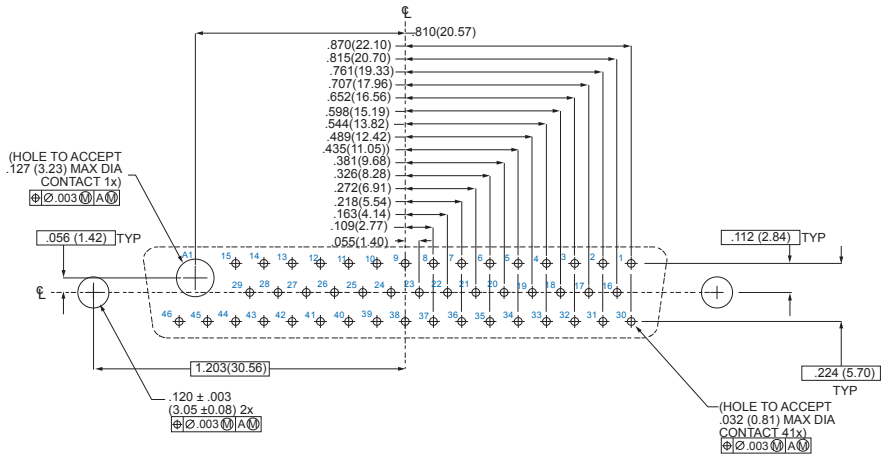
5-36P4
4 #8, 32 #20



5-43P2
2 #8, 41 #20



5-47P1
1 #8, 46 #20



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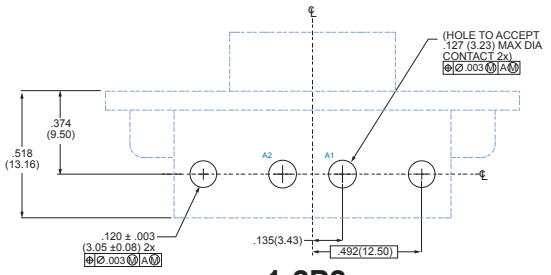
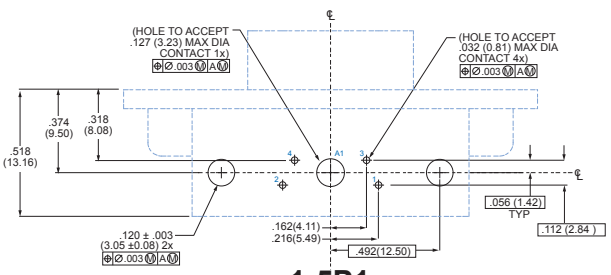
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo pin connectors with right angle PC tails

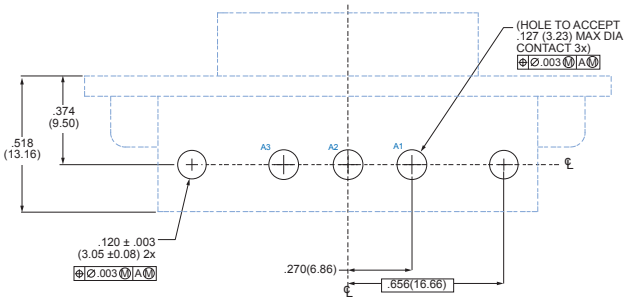
PCB FOOTPRINT FOR 280-052P AND 280-056P COMBO CONNECTORS



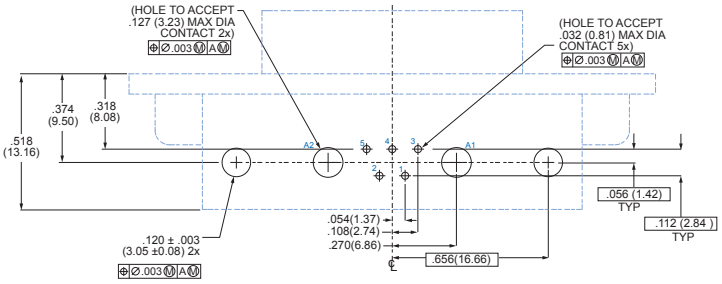
1-2P2
2 #8



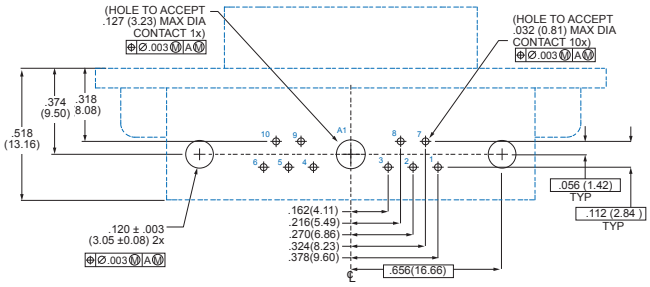
1-5P1
1 #8, 4 #20



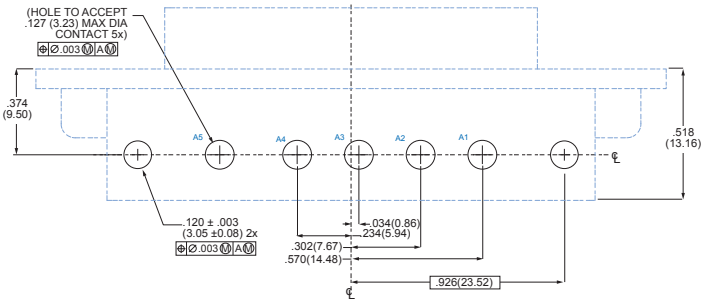
2-3P3
3 #8



2-7P2
2 #8, 5 #20

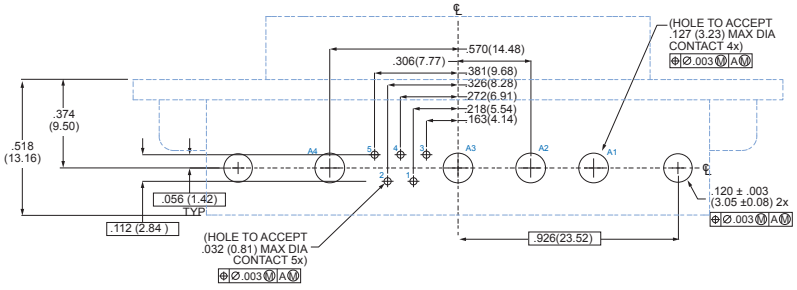


2-11P1
1 #8, 10 #20



3-5P5
5 #8

3-9P4
4 #8, 5 #20



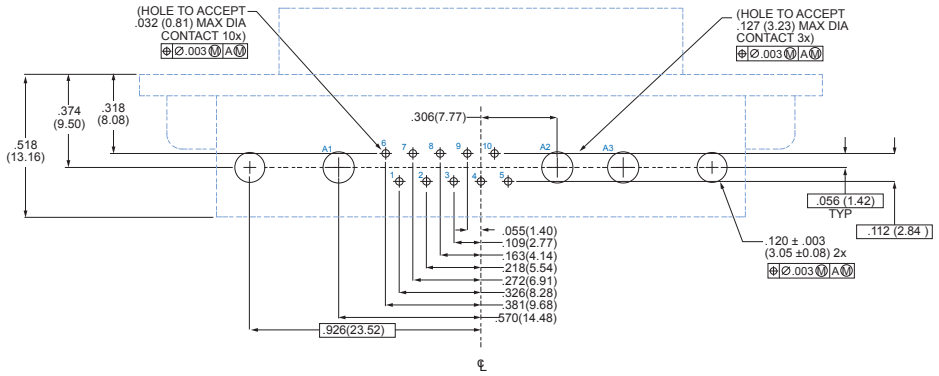
G

HiPer-D® Panel Cutouts and PCB Footprints

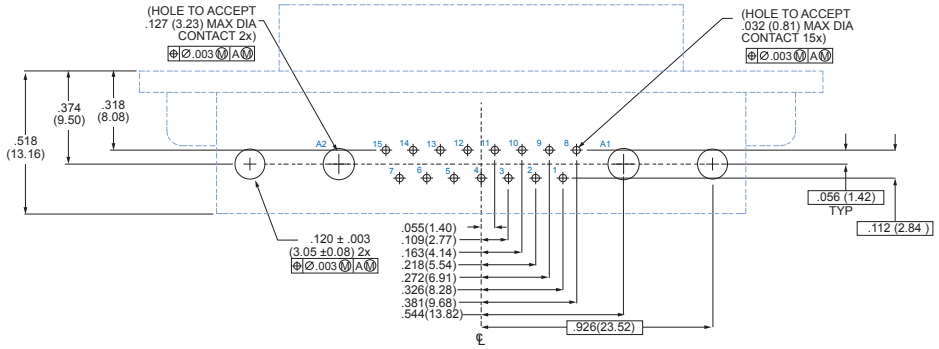
PCB footprints for combo pin connectors with right angle PC tails

PCB FOOTPRINT FOR 280-052P AND 280-056P COMBO CONNECTORS

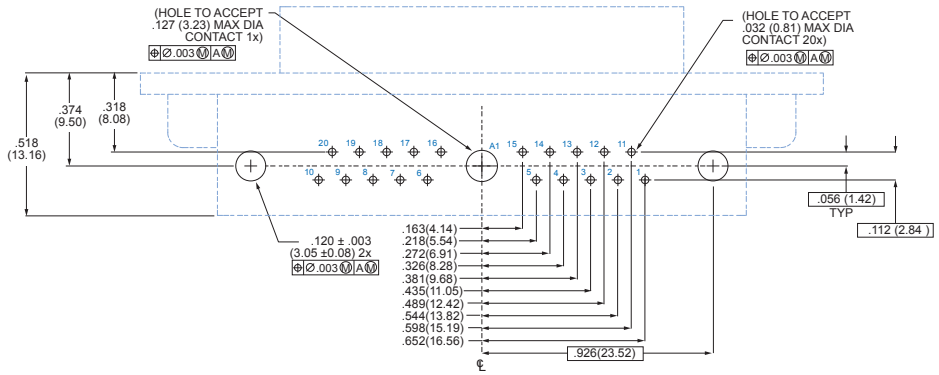
3-13P3
3 #8, 10 #20



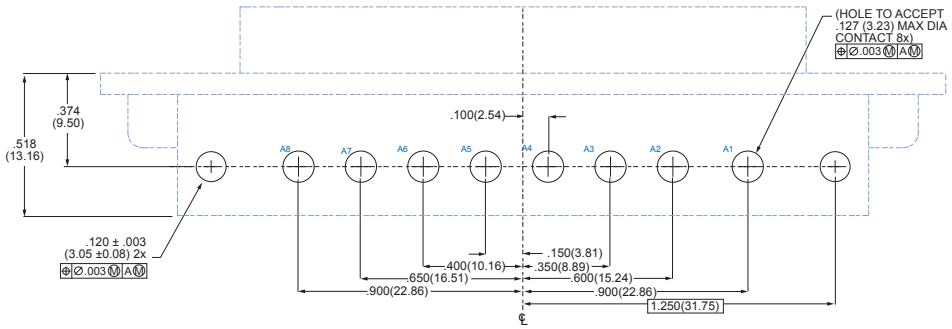
3-17P2
2 #8, 15 #20



3-21P1
1 #8, 20 #20



4-8P8
8 #8



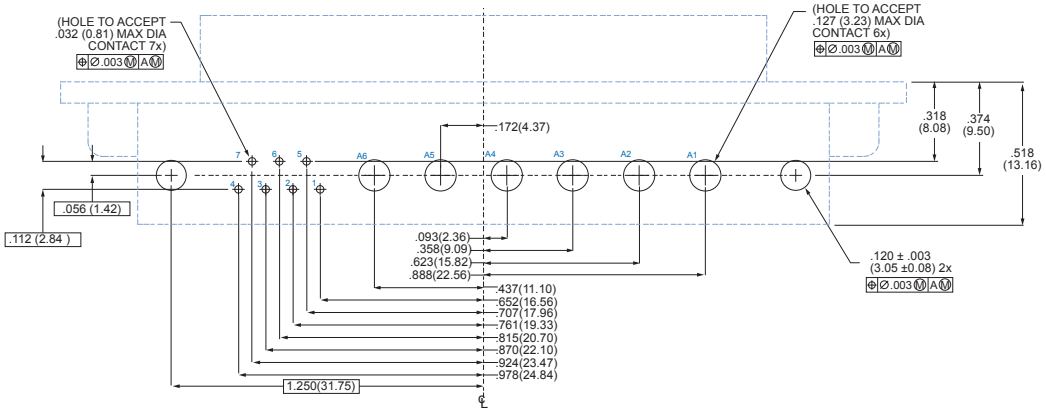
G

HiPer-D® Panel Cutouts and PCB Footprints

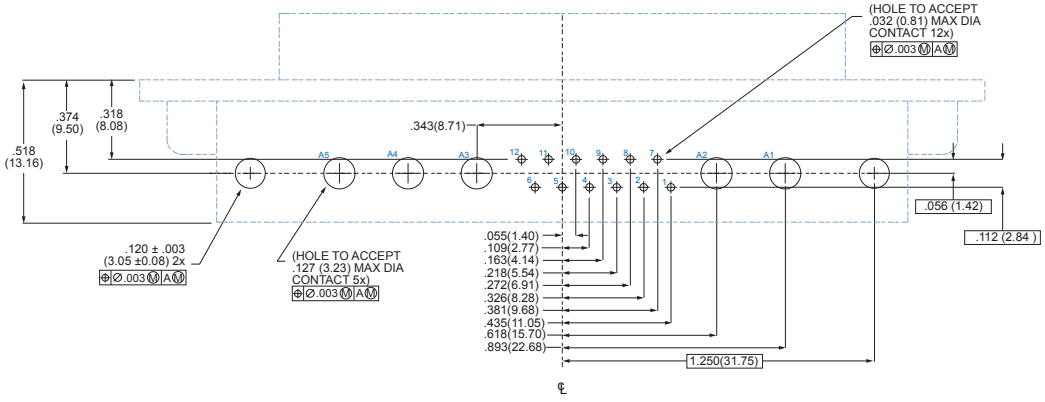
PCB footprints for combo pin connectors with right angle PC tails

PCB FOOTPRINT FOR 280-052P AND 280-056P COMBO CONNECTORS

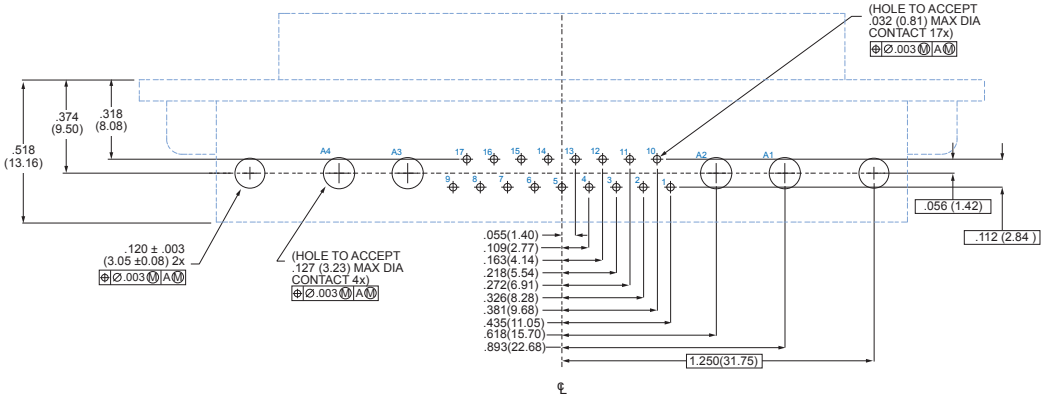
4-13P6
6 #8, 7 #20



4-17P5
5 #8, 12 #20



4-21PA4
4 #8, 17 #20



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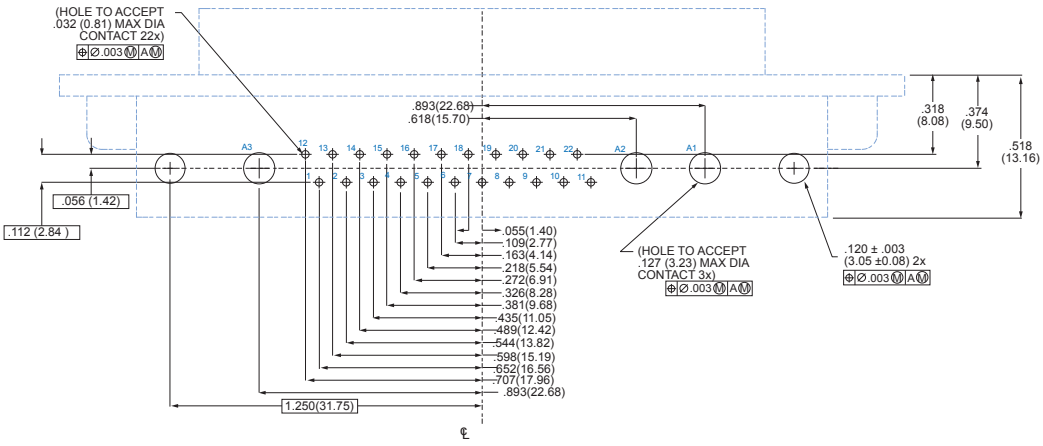
HiPer-D® Panel Cutouts and PCB Footprints

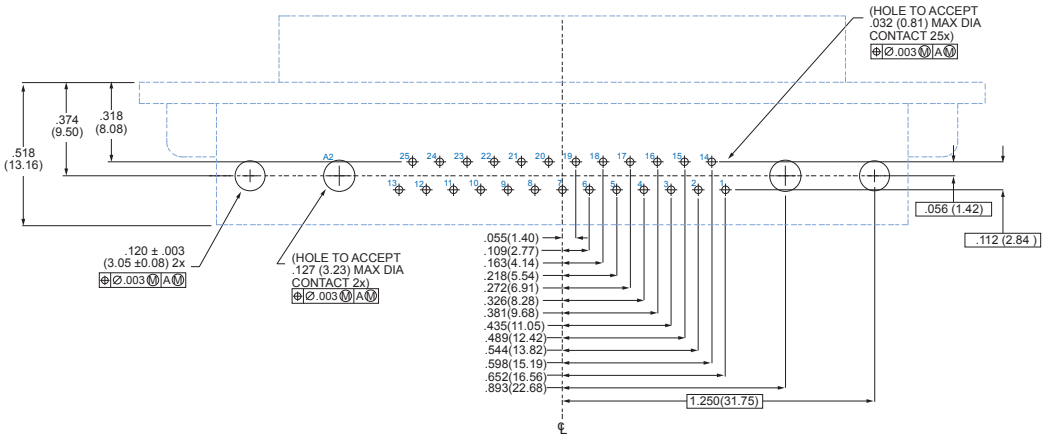
PCB footprints for combo pin connectors with right angle PC tails

PCB FOOTPRINT FOR 280-052P AND 280-056P COMBO CONNECTORS

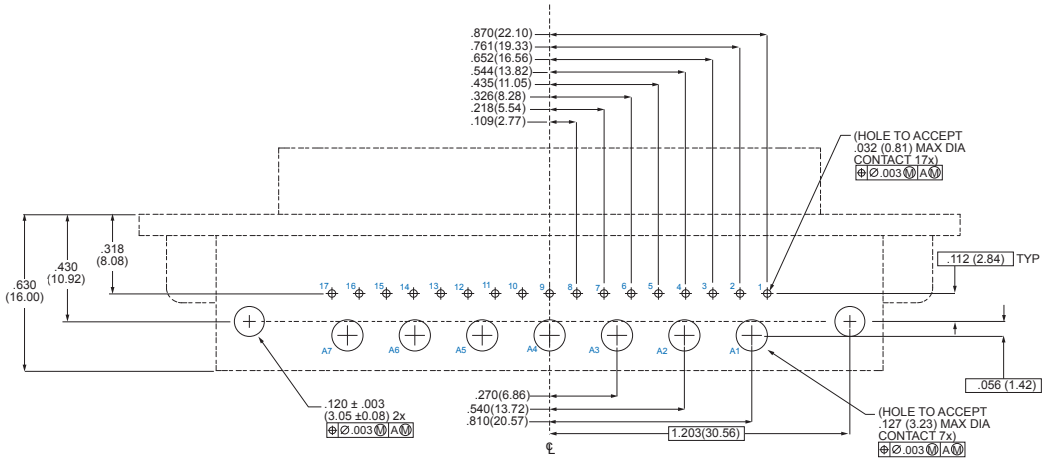
4-25P3
3 #8, 22 #20



4-27P2
2 #8, 25 #20



5-24P7
7 #8, 17 #20



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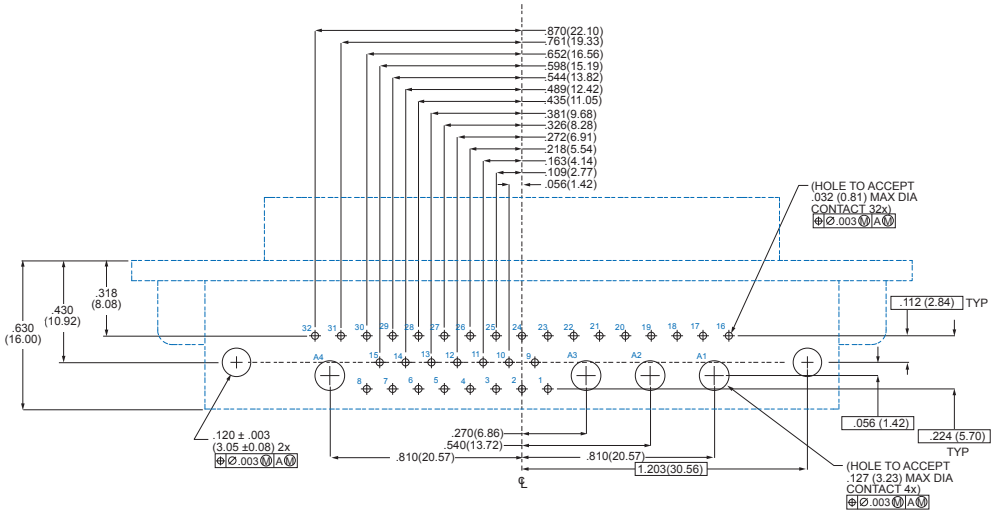
HiPer-D® Panel Cutouts and PCB Footprints

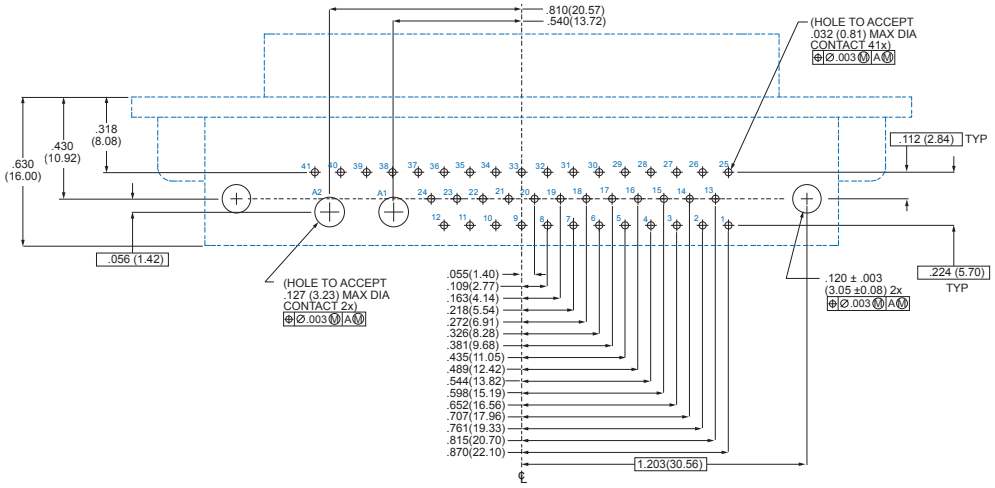
PCB footprints for combo pin connectors with right angle PC tails

PCB FOOTPRINT FOR 280-052P AND 280-056P COMBO CONNECTORS

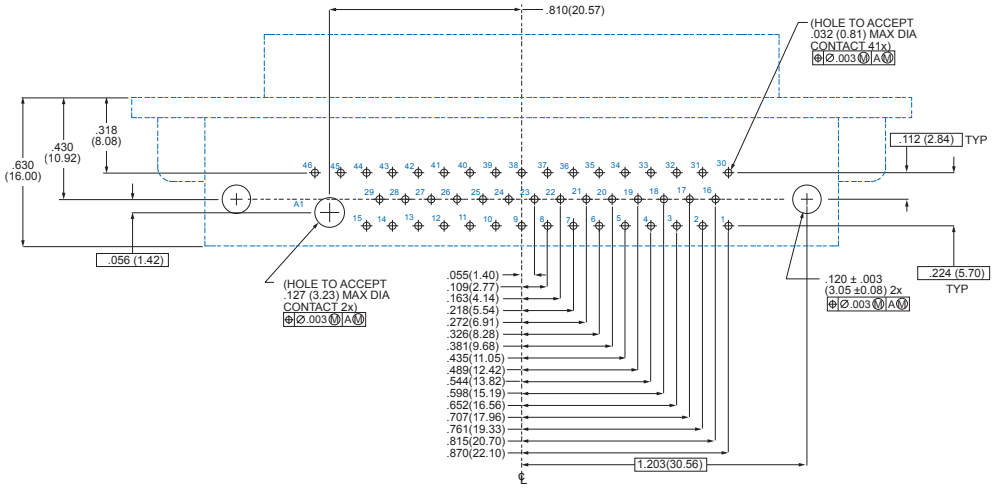
5-36P4
4 #8, 32 #20



5-43P2
2 #8, 41 #20



5-47P1
1 #8, 46 #20



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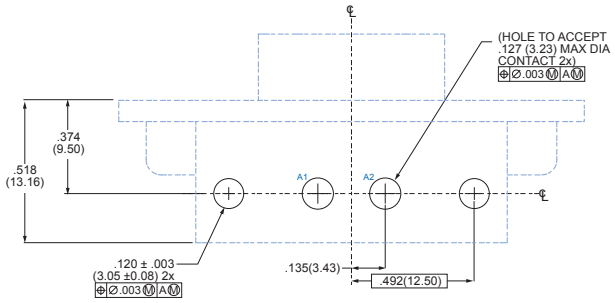
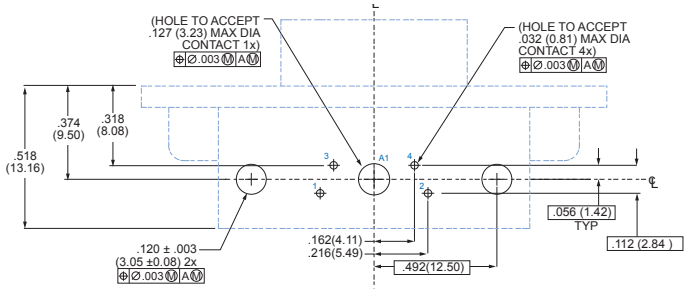
HiPer-D® Panel Cutouts and PCB Footprints

PCB footprints for combo socket connectors with right angle PC tails

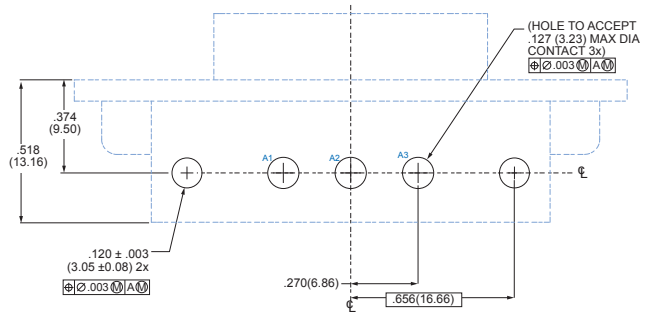
PCB FOOTPRINT FOR 280-053S AND 280-057S COMBO CONNECTORS



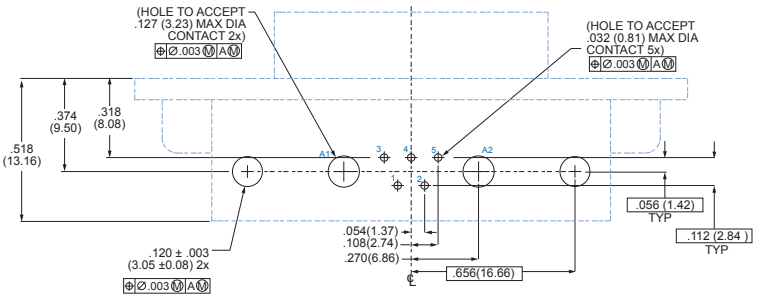
1-2P2
2 #8



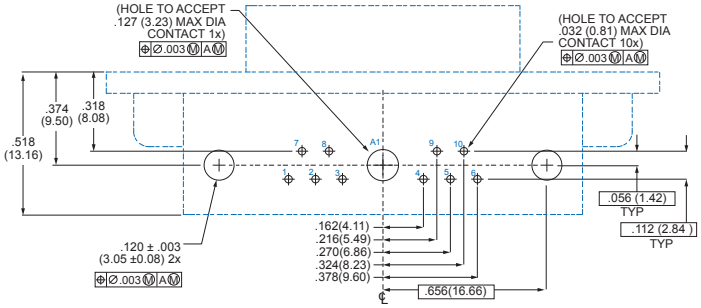
1-5P1
1 #8, 4 #20



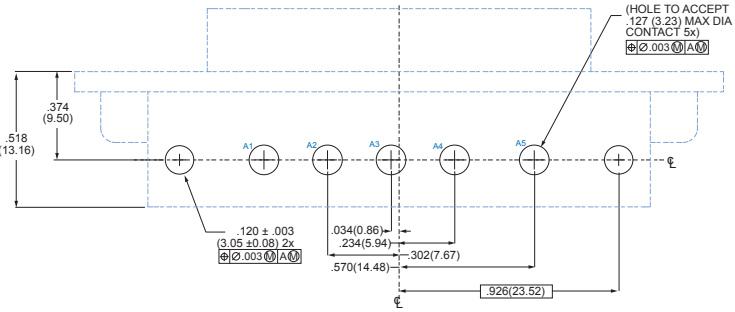
2-3P3
3 #8



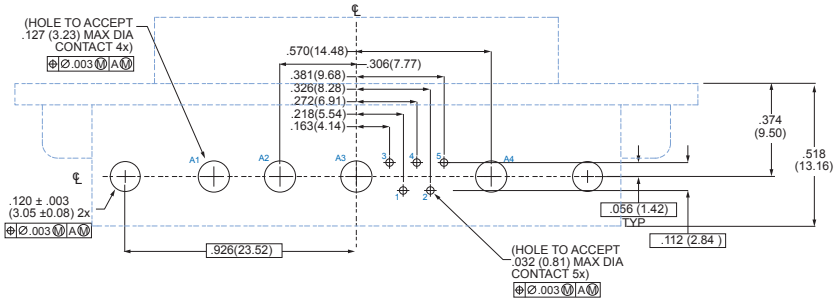
2-7P2
2 #8, 5 #20



2-11P1
1 #8, 10 #20



3-5P5
5 #8



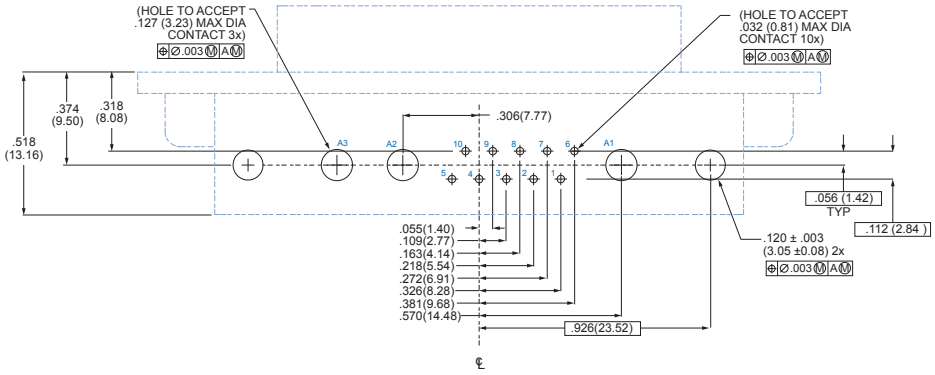
3-9P4
4 #8, 5 #20

HiPer-D® Panel Cutouts and PCB Footprints

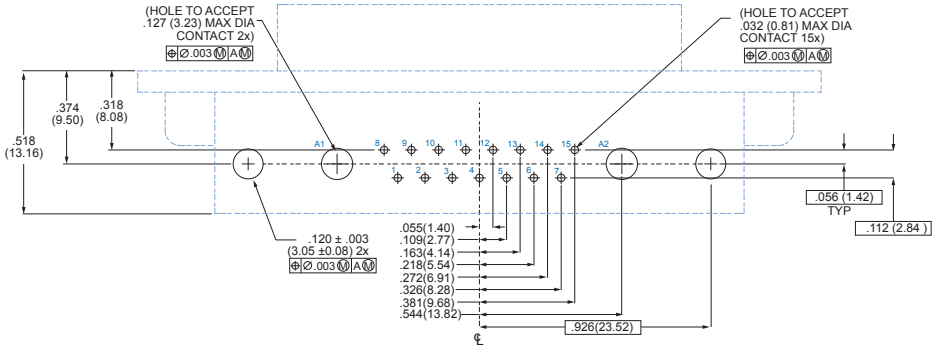
PCB footprints for combo socket connectors with right angle PC tails

PCB FOOTPRINT FOR 280-053S AND 280-057S COMBO CONNECTORS

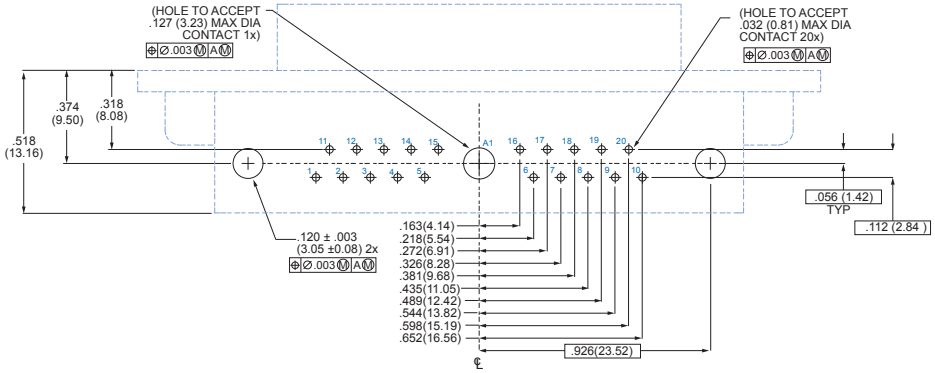
3-13P3
3 #8, 10 #20



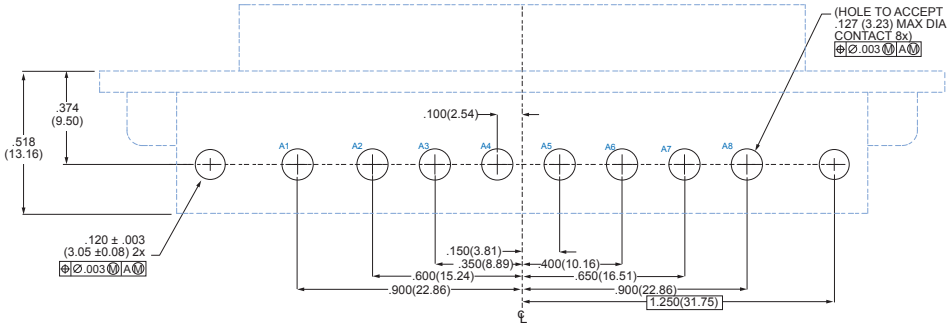
3-17P2
2 #8, 15 #20



3-21P1
1 #8, 20 #20



4-8P8
8 #8



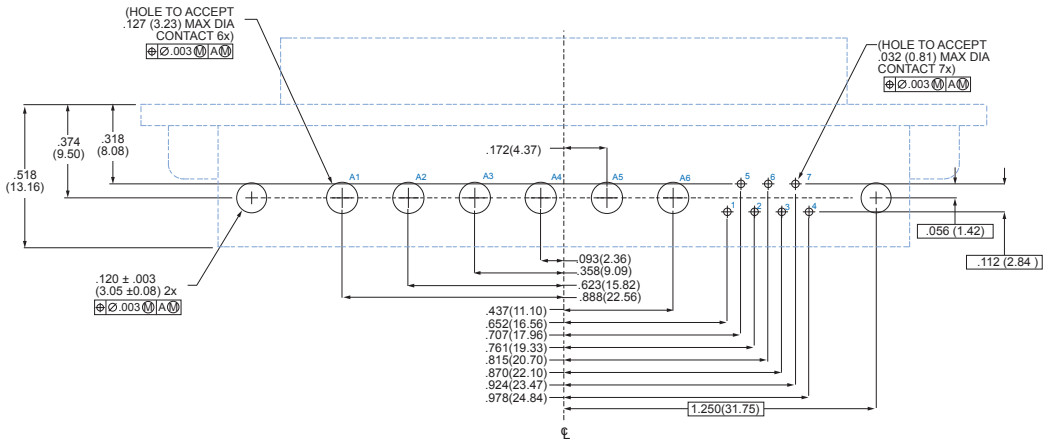
G

HiPer-D® Panel Cutouts and PCB Footprints

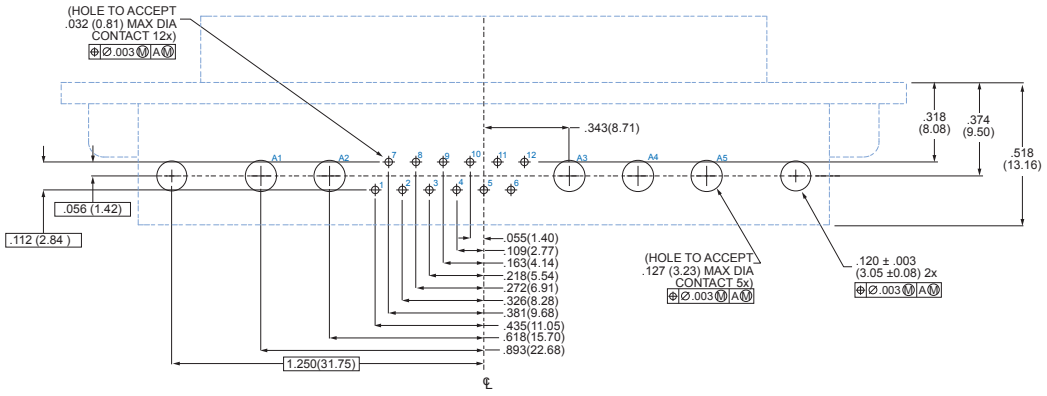
PCB footprints for combo socket connectors with right angle PC tails

PCB FOOTPRINT FOR 280-053S AND 280-057S COMBO CONNECTORS

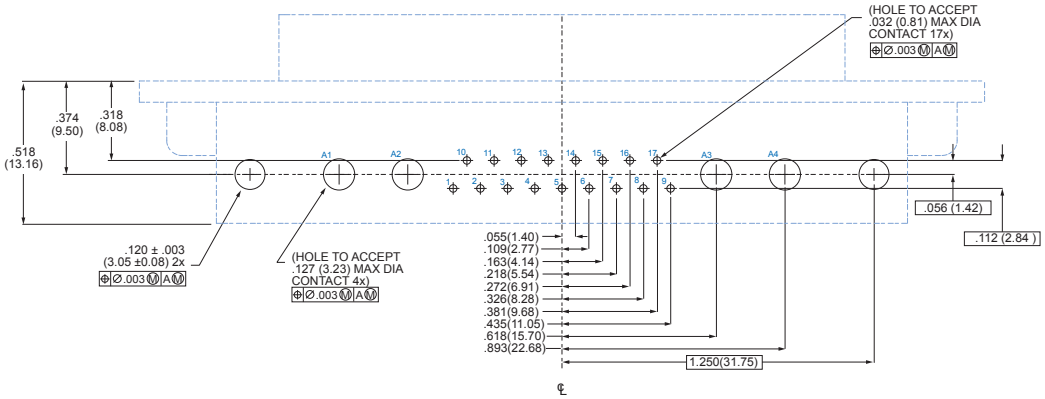
4-13P6
6 #8, 7 #20



4-17P5
5 #8, 12 #20



4-21PA4
4 #8, 17 #20



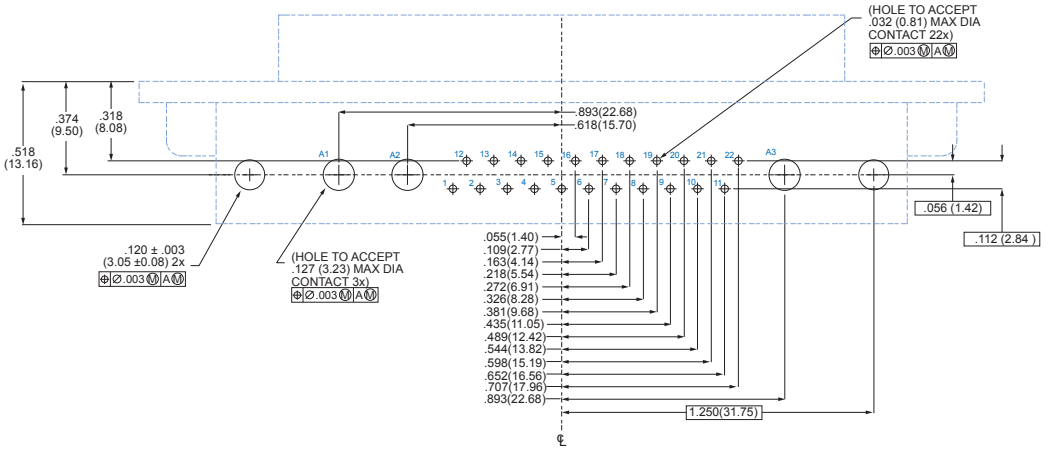
G

HiPer-D® Panel Cutouts and PCB Footprints

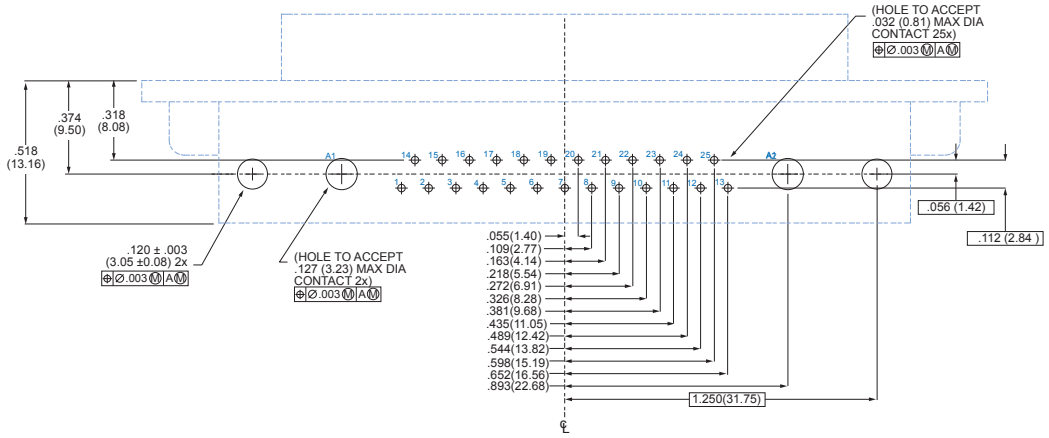
PCB footprints for combo socket connectors with right angle PC tails

PCB FOOTPRINT FOR 280-053S AND 280-057S COMBO CONNECTORS

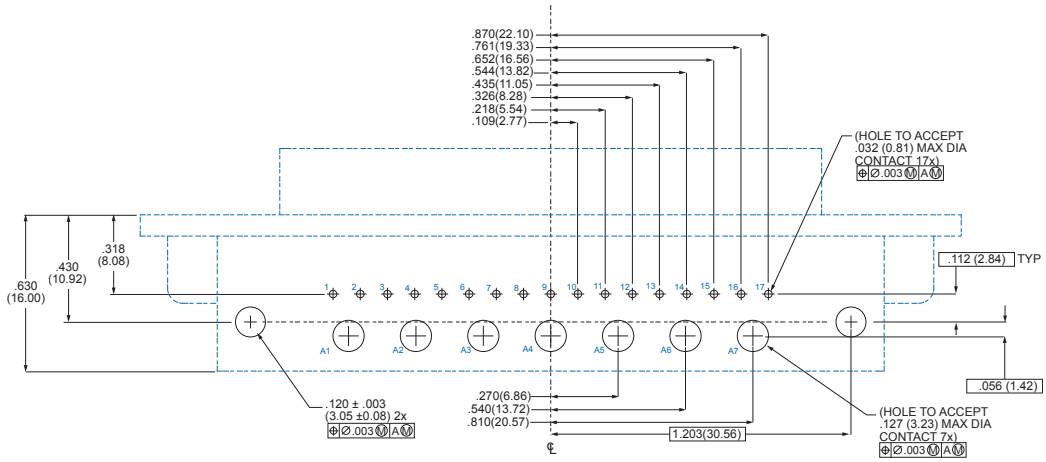
4-25P3
3 #8, 22 #20



4-27P2
2 #8, 25 #20



5-24P7
7 #8, 17 #20



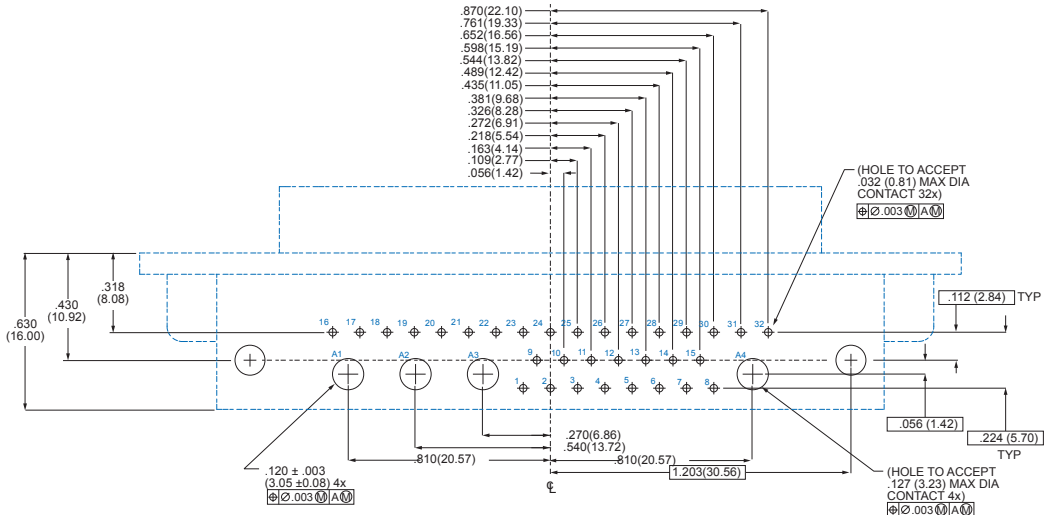
G

HiPer-D® Panel Cutouts and PCB Footprints

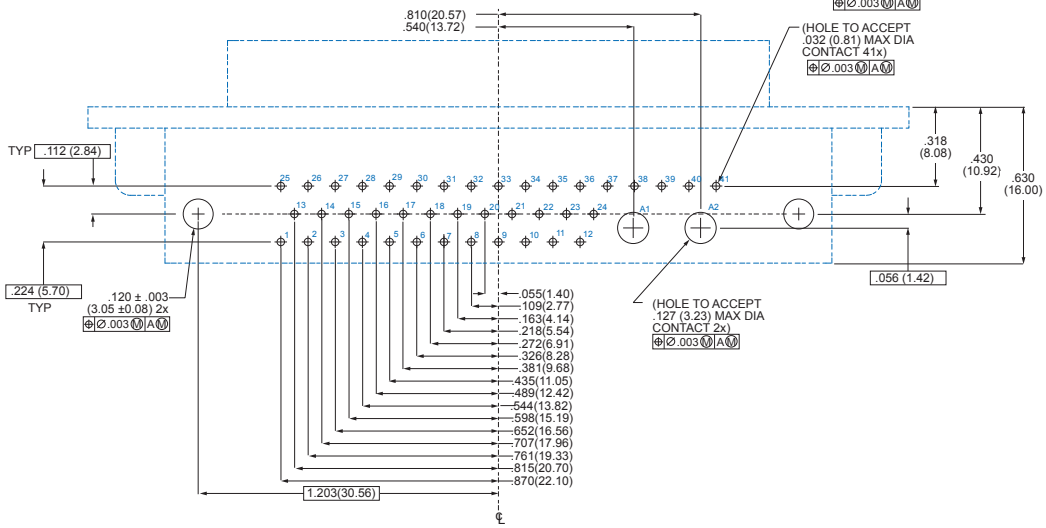
PCB footprints for combo socket connectors with right angle PC tails

PCB FOOTPRINT FOR 280-053S AND 280-057S COMBO CONNECTORS

5-36P4
4 #8, 32 #20



5-43P2
2 #8, 41 #20



5-47P1
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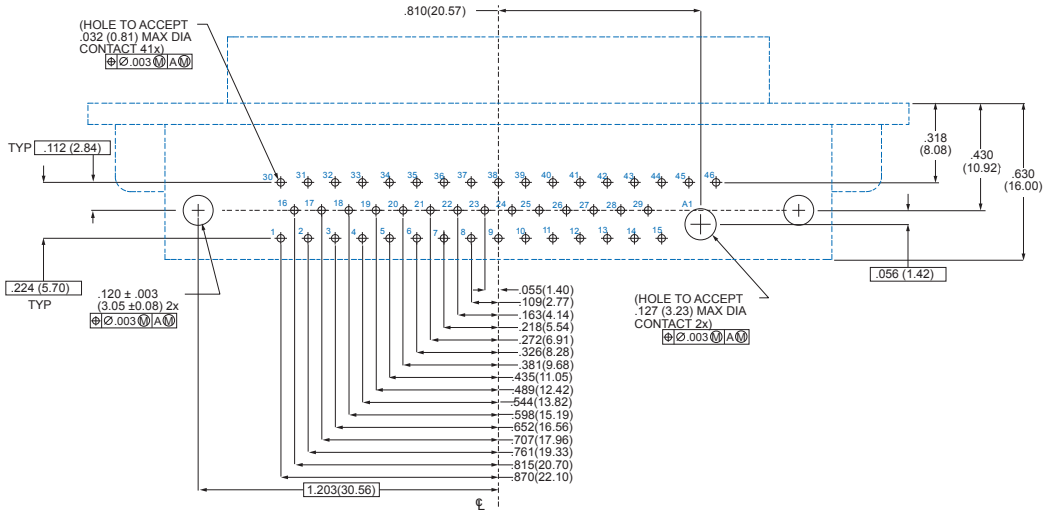

G

280-018P B-6
280-019S B-8
280-020P B-10
280-021S B-12
280-022P B-22
280-023S B-24
280-024P B-26
280-025S B-28
280-026P B-30
280-027S B-32
280-028P B-34
280-029S B-36
280-030P B-14
280-031S B-16
280-046P C-6
280-047S C-8
280-048P C-10
280-049S C-12
280-050P C-22
280-051S C-24
280-052P C-26
280-053S C-28
280-054P C-30
280-055S C-32
280-056P C-34
280-057S C-36
280-058P C-14
280-059S C-16
280-082 . . . . . D-7
280-082P D-6
280-083 . . . . . D-5
280-083S D-8
280-086P B-18
280-087S B-20
280-088P C-18
280-089S C-20
289-003 . . . . . F-2
289-004 . . . . . F-2
289-012 . . . . . F-17
289-014 . . . . . F-16
289-015 . . . . . F-15
289-016 . . . . . F-15
289-019 . . . . . F-2
289-052 . . . . . F-4
289-057P F-19
289-058S F-19
289B007 . . . . . F-11
289S005 . . . . . F-5
289S007 . . . . . F-11
289S008 . . . . . F-8
289T005 . . . . . F-5
289T007 . . . . . F-11
289T008 . . . . . F-8
600-052 . . . . . F-20
600-058 . . . . . F-20
600-090 . . . . . F-20
770-030 . . . . . F-21
809-015 . . . . . E-9
809-129 . . . . . E-
809-130 . . . . . E-6
809-132 . . . . . E-10
809-133 . . . . . E-6
809-203 . . . . . E-10
850-002 . . . . . E-3
850-003 . . . . . E-3
850-021 . . . . . E-2
850-022 . . . . . E-2
850-056 . . . . . E-4
850-057 . . . . . E-4
85-021 . . . . . E-10
852-084 . . . . . E-5
852-085 . . . . . E-5
852-086 . . . . . E-6
852-088 . . . . . E-8
852-089 . . . . . E-8
859-012 . . . . . E-10
859-016 . . . . . E-9
859-018 . . . . . E-9
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859-020 . . . . . E-10
859-081 . . . . . E-9
859-083 . . . . . E-9
859-093 . . . . . E-10
859-098 . . . . . E-6
859-099 . . . . . E-9
859-100 . . . . . E-9
960-130 . . . . . E-7
960-131 . . . . . E-7
960-132 . . . . . E-7

G

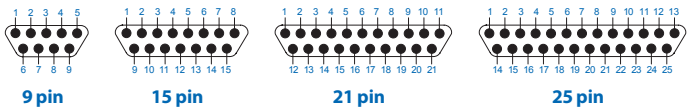
SERIES GMLM

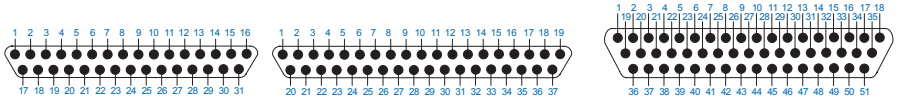
MasterLatch™

QUICK-DISCONNECT MICRO-D

MasterLatch (GMLM) Quick-release locking Micro-D connector pairs are equipped with a precision latching and locking mechanism. The single thumb latch on the plug side actuates a pair of locking latches that mate quickly and reliably to GMLM receptacles. These TwistPin equipped, low-insertion-force connectors meet all the standard performance requirements of MIL-DTL-8513 including vibration, shock, and mating durability. Choose from 7 different insert arrangements from 9 to 51 way. The unique ergonomic latching mechanism can be easily activated with a thumb and forefinger grip even when wearing gloves, or when difficult access to connector pairs makes the use of jacking hardware and tools impossible.

Face view pin connector - Micro-D contact arrangements





- **Precision latch meets MIL-DTL-83513 vibration and shock**
- **Low insertion force TwistPin contacts**
- **Easy-to-activate latching mechanism**

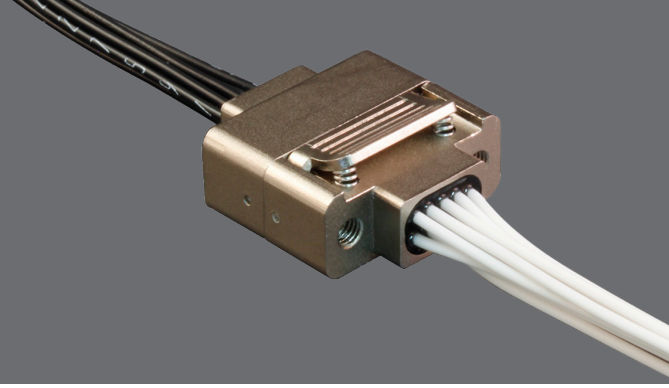
Glenair®

For more information contact Glenair at **818-247-6000** or visit our website at **www.glenair.com**

SERIES GMLM

MasterLatch™

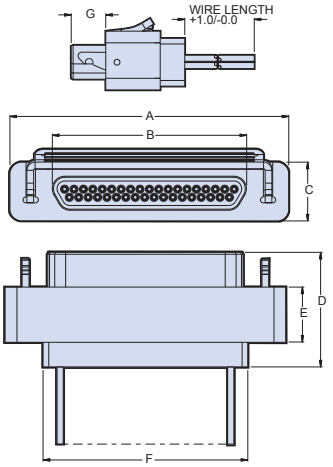
QUICK-DISCONNECT MICRO-D



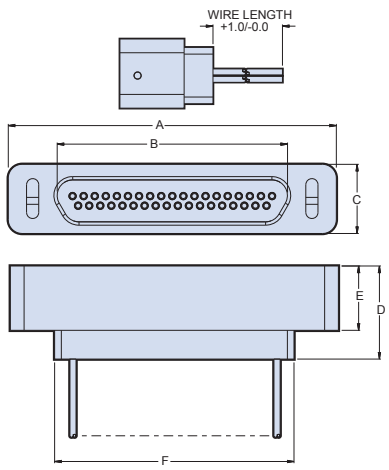
How To Order GMLM MasterLatch™									
Sample Part Number	**GMLM**	**2**	**L**	**-25**	**P**	**-6**	**K**	**7**	**-18**
Product Series	**GMLM** Glenair MasterLatch™ Micro-D								
Shell Plating	**1**- Cadmium **2** - Nickel **4** - Black Anodize **5** - Gold **6** - Chem Film								
Insulator Material	**L** - LCP or PPS								
Contact Layout	**9, 15, 21, 25, 31, 37, 51**								
Connector Type	**P** - Single Ended Pin (Plug) **S** - Pin (Plug) Connector Both Ends								
Wire Gauge	**4** - 24 AWG **6** - 26 AWG **8** - 28 AWG **0** - 30 AWG (30 AWG–Lab Only)								
Wire Type	**K** - M22759/11 600 Vrms Teflon (TFE) **J** - M22759/33 600 Vrms Modified Cross-Linked Tefzel (ETFE)								
Wire Color Code	**1** - White **2** - Yellow **5** - Color Coded **7** - Ten Color Repeating								
Cable Length In Inches	**18** - 18 inches								

Series GMLM MasterLatch™ Dimensions

Pin



Socket



Layout	A Max	B Max	C	D Max	E Max	F Max	G
9P	0.785	0.333	0.320	0.610	0.290	0.400	0.183
9S	0.785	0.342	0.320	0.429	0.295	0.400	0.183
15P	0.935	0.483	0.320	0.610	0.290	0.550	0.183
15S	0.935	0.492	0.320	0.429	0.295	0.550	0.183
21P	1.085	0.633	0.320	0.610	0.290	0.700	0.183
21S	1.085	0.642	0.320	0.429	0.295	0.700	0.183
25P	1.185	0.733	0.320	0.610	0.290	0.800	0.183
25S	1.185	0.742	0.320	0.429	0.295	0.800	0.183
31P	1.335	0.883	0.320	0.610	0.290	0.950	0.183
31S	1.335	0.892	0.320	0.429	0.295	0.950	0.183
37P	1.485	1.033	0.320	0.610	0.290	1.100	0.183
37S	1.485	1.042	0.320	0.429	0.295	1.100	0.183
51P	1.435	0.983	0.320	0.610	0.290	1.050	0.183
51S	1.435	0.992	0.320	0.429	0.295	1.050	0.183

MasterLatch™ GMLM connectors are sold as prewired pigtails only, with 18 inch wire leads. Contact factory for alternative lengths.

MATERIAL AND FINISH

- Insulator: Liquid crystal polymer or PPS
- Wire: M22759/11 600 Vrms Teflon (TFE) or M22759/33 600 Vrms Modified Cross-Linked Tefzel (ETFE)
- Pin Contacts: Gold-plated beryllium copper alloy
- Socket Contacts: Gold-plated phosphor bronze alloy
- Shell: Aluminum alloy with choice of cadmium plate, electroless nickel, black anodize, gold, or chem film
- Latching mechanism: Stainless steel

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For more information contact Glenair at **818-247-6000** or visit our website at **www.glenair.com**

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