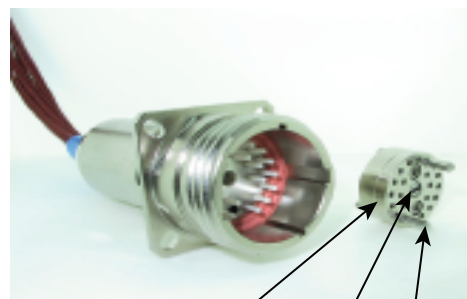


# High Density Circular Connector PHD38999 Series

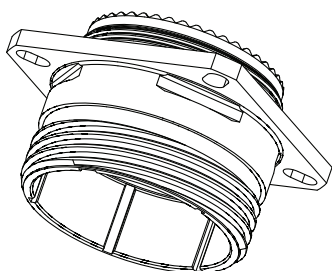
Meets MIL-DTL-38999 envelope dimensions including Standard Polarization, Backshell Threads and Panel Cut-Out / Mounting Holes.

## Product Features

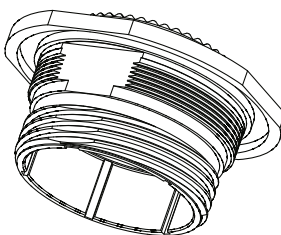
- PHD Optical Contact System (Including Tuned Contacts)
- All Metallic 38999 Compatible Outside Dimensions
- Internal Metallic Web for EMI Suppression and Terminus Stability
- Standard 38999 Keys
- All Metallic Backshell w/Sealing Grommet
- Size 22 and Size 16 Termini Back body to accommodate large variety of fiber buffering/Jackets
- Removable alignment insert assembly mountable in either plug or receptacle.



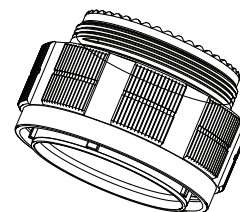
Insert Assy  
Guide Pin  
Jackscrew



Wall Mount Receptacle

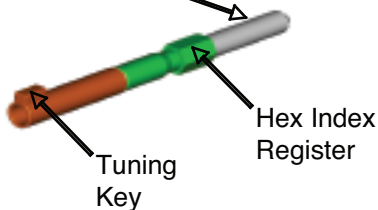


Jam Nut Receptacle

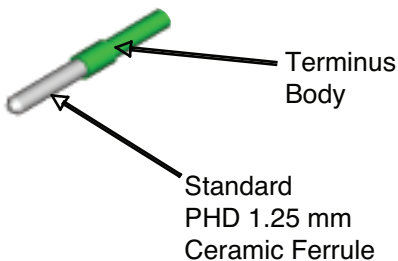


Plug

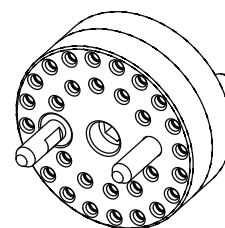
Standard  
PHD 1.25 mm  
Ceramic Ferrule



Size 22 Termini



Size 16 Termini



INSERT ASSY SIZES  
13 THRU 25



INSERT ASSY  
SIZE 11

Front Alignment Insert Assembly

## PRODUCT NOTES

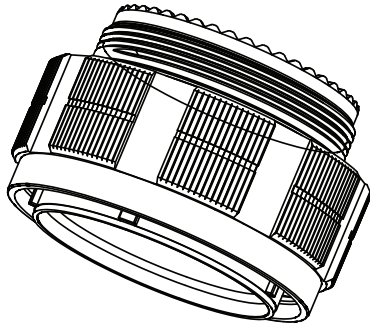
- 1. Packaging:** Packaging identification includes manufacturer's name and part number
- 2. Material / Finish:**  
**Insert:** Aluminum Alloy / Electroless Nickel  
 Hardware Stainless Steel / Passivated  
 Internal Alignment Sleeves: Ceramic  
**Shell / Shell Hardware:** Aluminum Alloy/Electroless Nickel or Cadmium plating. See Connector Assembly Matrix for Part Numbers  
 Internal Springs, Cups, Clips, Screws, Washers,  
 Alignment pins: Stainless Steel / NA

- 3. Insertion / Removal tool:**  
 Size 22 – Metal Insertion/Extraction 274-0053-0000  
 Size 16 Plastic Insertion/Extraction CIET-16-03  
 Size 16 Metal Insertion – 995-0001-732  
 Size 16 Metal Extraction – 995-0001-731
- 4. Alignment Insert Assembly** may be added to the Plug Assembly or the Receptacle Assembly but not both. See Connector Assembly Matrix for Part Numbers.
- 5. Applications:** Military/Aero space Fiber Optic Interconnect environments.



# High Density Circular Connector PHD38999 Series

## PHD Plug Connector



NOTES: UNLESS OTHERWISE SPECIFIED.

1. FOR CAVITY LAYOUT / MARKING, SEE APPLICABLE "CSA" CANNON STANDARD ARRANGEMENT.

2. MATERIAL TYPE:

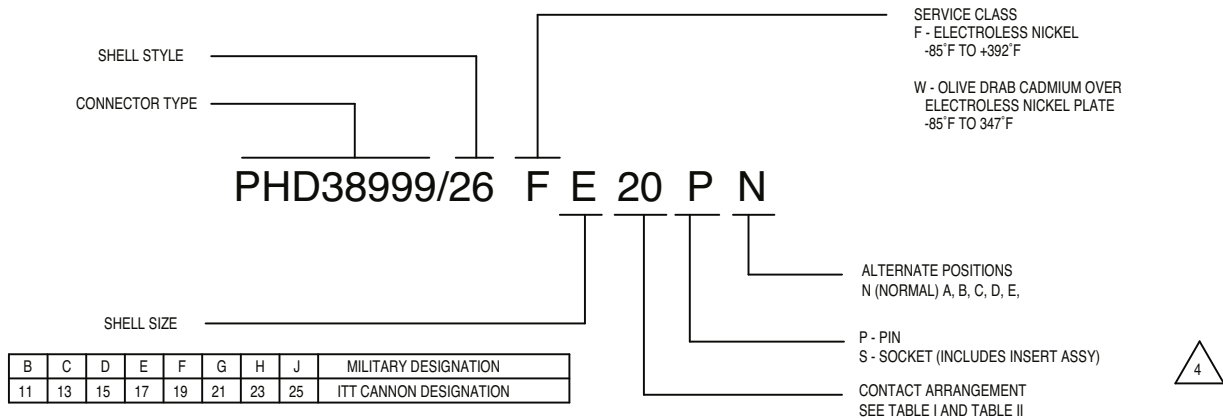
- BARREL: ALUMINUM ALLOY
- COUPLING NUT: ALUMINUM ALLOY
- REAR PLATE: ALUMINUM ALLOY
- COUPLING NUT RETAINING RING: STAINLESS STEEL
- SCREW, WASHERS, DOWEL PINS: STAINLESS STEEL
- INTERNAL SPRINGS: STAINLESS STEEL
- INTERNAL CUPS / CLIPS: COPPER

3. FINISH: ELECTROLESS NICKEL PLATING OR CADMIUM PLATING  
SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.

4. INSERT ASSEMBLY SHOWN IS OPTIONAL AND MAY BE ADDED TO, THE PLUG ASSEMBLY OR THE RECEPTACLE ASSEMBLY BUT NOT BOTH. SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.  
INSERT ASSEMBLY MATERIALS: ALUMINUM ALLOY  
FINISH: ELECTROLESS NICKEL PLATING  
STAINLESS STEEL HARDWARE  
INTERNAL SLEEVES CERAMIC

### PART NUMBER

SHOWN: SHELL SIZE 17/20 POSITION CONTACT ARRANGEMENT

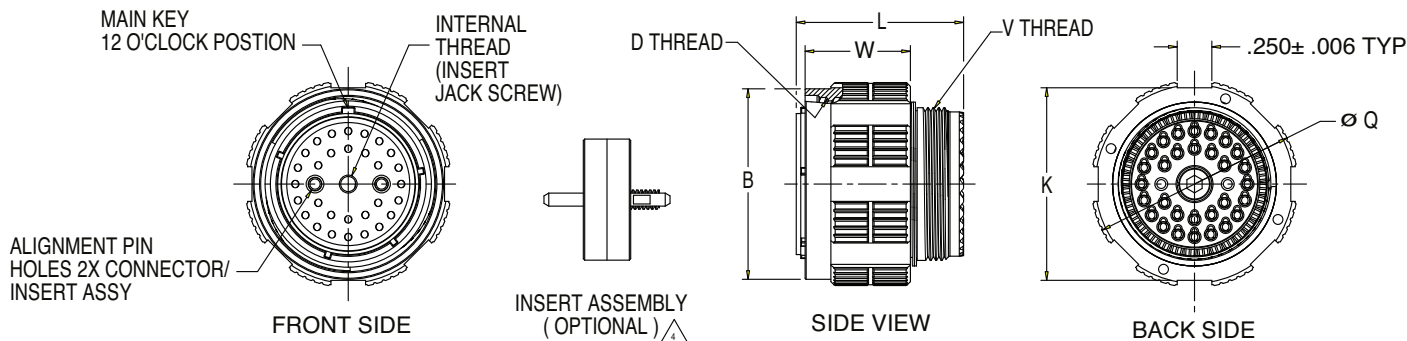


# High Density Circular Connector PHD38999 Series

## PHD Plug Connector

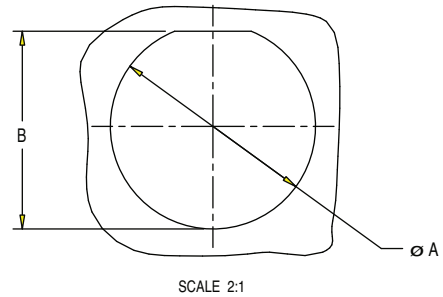
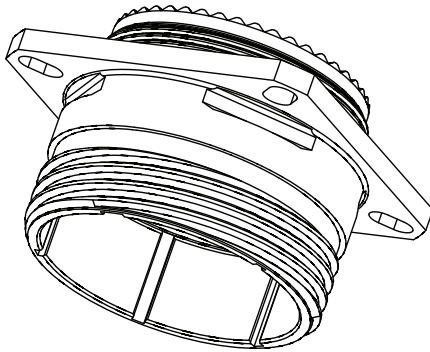
CONNECTOR ASSEMBLY - SIZE #22 CONTACT MATRIX / 900um CABLE TYPE												
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	B +.008 -.000	D THREAD CLASS 2B (PLATED)	K MAX	L MAX	Q DIA. MAX	METRIC V THREAD (PLATED)	W +.008 -.004	INSERT ASSEMBLY (OPTIONAL) $\triangle$ 4
PHD38999/26FB4XX	CSA-PHD 11-4	NICKEL	11	4	.831	.7500-0.1P-0.3L-TS	.862	1.234	.969	M15X1-6g0.100R	.760	195-2000-003
PHD38999/26FC8XX	CSA-PHD13-8		13	8	1.000	.8750-0.1P-0.3L-TS	1.027		1.141	M18X1-6g0.100R		195-2000-005
PHD38999/26FD12XX	CSA-PHD15-12		15	12	1.130	1.0000-0.1P-0.3L-TS	1.153		1.266	M22X1-6g0.100R		195-2000-007
PHD38999/26FE20XX	CSA-PHD17-20		17	20	1.268	1.1875-0.1P-0.3L-TS	1.291		1.391	M25X1-6g0.100R		195-2000-009
PHD38999/26FF30XX	CSA-PHD19-30		19	30	1.374	1.2500-0.1P-0.3L-TS	1.398		1.500	M28X1-6g0.100R		195-2000-011
PHD38999/26FG40XX	CSA-PHD21-40		21	40	1.500	1.3750-0.1P-0.3L-TS	1.524		1.625	M31X1-6g0.100R		195-2000-013
PHD38999/26FH48XX	CSA-PHD23-48		23	48	1.618	1.5000-0.1P-0.3L-TS	1.642		1.750	M34X1-6g0.100R		195-2000-015
PHD38999/26FJ72XX	CSA-PHD25-72		25	72	1.744	1.6250-0.1P-0.3L-TS	1.768		1.875	M37X1-6g0.100R		195-2000-017

CONNECTOR ASSEMBLY - SIZE #16 CONTACT MATRIX / 2MM CABLE TYPE												
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	B +.008 -.000	D THREAD CLASS 2B (PLATED)	K MAX	L MAX	Q DIA. MAX	METRIC V THREAD (PLATED)	W +.008 -.004	INSERT ASSEMBLY (OPTIONAL) $\triangle$ 4
PHD38999/26FB2XX	CSA-PHD11-2	NICKEL	11	2	.831	.7500-0.1P-0.3L-TS	.862	1.234	.969	M15X1-6g0.100R	.760	195-2000-002
PHD38999/26FC4XX	CSA-PHD13-4		13	4	1.000	.8750-0.1P-0.3L-TS	1.027		1.141	M18X1-6g0.100R		195-2000-004
PHD38999/26FD6XX	CSA-PHD15-6		15	6	1.130	1.0000-0.1P-0.3L-TS	1.153		1.266	M22X1-6g0.100R		195-2000-006
PHD38999/26FE8XX	CSA-PHD17-8		17	8	1.268	1.1875-0.1P-0.3L-TS	1.291		1.391	M25X1-6g0.100R		195-2000-008
PHD38999/26FF12XX	CSA-PHD19-12		19	12	1.374	1.2500-0.1P-0.3L-TS	1.398		1.500	M28X1-6g0.100R		195-2000-010
PHD38999/26FG16XX	CSA-PHD21-16		21	16	1.500	1.3750-0.1P-0.3L-TS	1.524		1.625	M31X1-6g0.100R		195-2000-012
PHD38999/26FH24XX	CSA-PHD23-24		23	24	1.618	1.5000-0.1P-0.3L-TS	1.642		1.750	M34X1-6g0.100R		195-2000-014
PHD38999/26FJ36XX	CSA-PHD25-36		25	36	1.744	1.6250-0.1P-0.3L-TS	1.768		1.875	M37X1-6g0.100R		195-2000-016



# High Density Circular Connector PHD38999 Series

## PHD Wall Mount Receptacle



NOTES: UNLESS OTHERWISE SPECIFIED.

1. FOR CAVITY LAYOUT / MARKING, SEE APPLICABLE "CSA" CANNON STANDARD ARRANGEMENT.

2. MATERIAL TYPE:

- BARREL: ALUMINUM ALLOY
- COUPLING NUT: ALUMINUM ALLOY
- REAR PLATE: ALUMINUM ALLOY
- COUPLING NUT RETAINING RING: STAINLESS STEEL
- SCREW, WASHERS, DOWEL PINS: STAINLESS STEEL
- INTERNAL SPRINGS: STAINLESS STEEL
- INTERNAL CUPS / CLIPS: COPPER

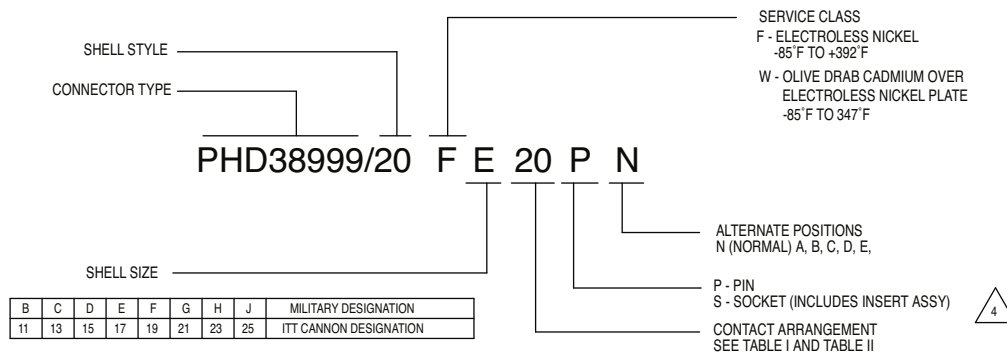
3. FINISH: ELECTROLESS NICKEL PLATING OR CADMIUM PLATING  
SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.

4. INSERT ASSEMBLY SHOWN IS OPTIONAL AND MAY BE ADDED TO, THE PLUG ASSEMBLY OR THE RECEPTACLE ASSEMBLY BUT NOT BOTH. SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.

INSERT ASSEMBLY MATERIALS: ALUMINUM ALLOY  
FINISH: ELECTROLESS NICKEL PLATING  
STAINLESS STEEL HARDWARE  
INTERNAL SLEEVES CERAMIC


CONNECTOR PANEL CUTOUT		
SHELL SIZE	A +.010/-.000	B +.000/-.010
11	.825	.770
13	1.010	.995
15	1.135	1.085
17	1.260	1.210
19	1.385	1.335
21	1.510	1.460
23	1.635	1.585
25	1.760	1.710


PART NUMBER  
SHOWN: SHELL SIZE 17/20 POSITION CONTACT ARRANGEMENT

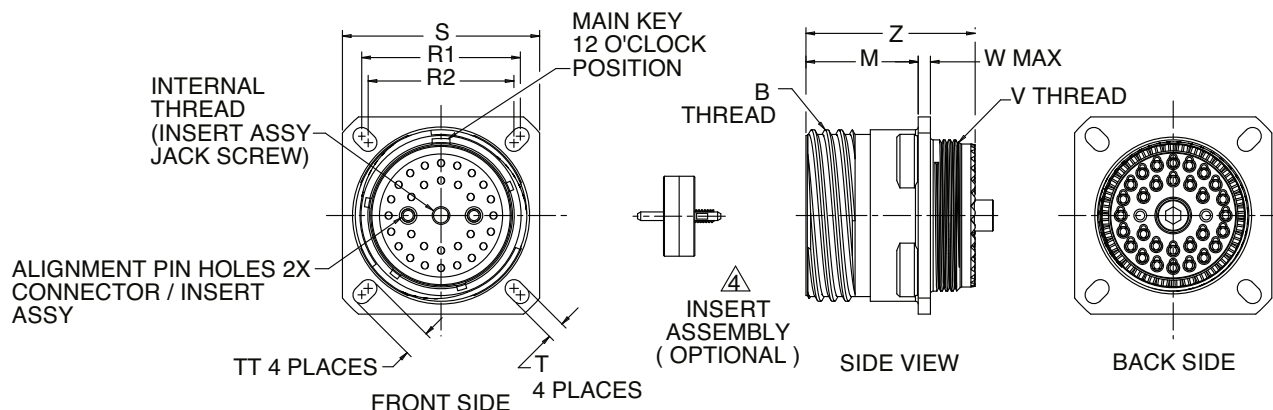


# High Density Circular Connector PHD38999 Series

## PHD Wall Mount Receptacle


CONNECTOR ASSEMBLY - SIZE #22 CONTACT MATRIX / 900um CABLE TYPE															
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	B THREAD CLASS 2 A (PLATED)	M +.000 -.005	R1	R2	S +/- .012	T +.004 -.002	TT +.004 -.002	METRIC V THREAD (PLATED)	W MAX	Z +.005 -.010	INSERT ASSEMBLY (OPTIONAL) 
PHD38999/20FB4XX	CSA-PHD11-4	NICKEL	11	4	.7500-0.1P-0.3L-TS	.820	.812	.719	1.031	.128	.194	M15X1-6g0.100R	.098	1.235	195-2000-003
PHD38999/20FC8XX	CSA-PHD13-8		13	8	.8750-0.1P-0.3L-TS		.906	.812	1.125			M18X1-6g0.100R			195-2000-005
PHD38999/20FD12XX	CSA-PHD15-12		15	12	1.0000-0.1P-0.3L-TS		.969	.906	1.219			M22X1-6g0.100R			195-2000-007
PHD38999/20FE20XX	CSA-PHD17-20		17	20	1.1875-0.1P-0.3L-TS		1.062	.969	1.312			M25X1-6g0.100R			195-2000-009
PHD38999/20FF30XX	CSA-PHD19-30		19	30	1.2500-0.1P-0.3L-TS	.790	1.156	1.062	1.438	.154	.242	M28X1-6g0.100R	.126	M31X1-6g0.100R	195-2000-011
PHD38999/20FG40XX	CSA-PHD21-40		21	40	1.3750-0.1P-0.3L-TS		1.250	1.156	1.562			M34X1-6g0.100R		195-2000-013	
PHD38999/20FH48XX	CSA-PHD23-48		23	48	1.5000-0.1P-0.3L-TS		1.375	1.250	1.688			M37X1-6g0.100R		195-2000-015	
PHD38999/20FJ72XX	CSA-PHD25-72		25	72	1.6250-0.1P-0.3L-TS	1.500	1.375	1.812	.154	M37X1-6g0.100R	195-2000-017				


CONNECTOR ASSEMBLY - SIZE #16 CONTACT MATRIX / 2MM CABLE TYPE															
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	B THREAD CLASS 2 A (PLATED)	M +.000 -.005	R1	R2	S +/- .012	T +.004 -.002	TT +.004 -.002	METRIC V THREAD (PLATED)	W MAX	Z +.005 -.010	INSERT ASSEMBLY (OPTIONAL) 
PHD38999/20FB2XX	CSA-PHD11-2	NICKEL	11	2	.7500-0.1P-0.3L-TS	.820	.812	.719	1.031	.128	.194	M15X1-6g0.100R	.098	1.235	195-2000-002
PHD38999/20FC4XX	CSA-PHD13-4		13	4	.8750-0.1P-0.3L-TS		.906	.812	1.125			M18X1-6g0.100R			195-2000-004
PHD38999/20FD6XX	CSA-PHD15-6		15	6	1.0000-0.1P-0.3L-TS		.969	.906	1.219			M22X1-6g0.100R			195-2000-006
PHD38999/20FE8XX	CSA-PHD17-8		17	8	1.1875-0.1P-0.3L-TS		1.062	.969	1.312			M25X1-6g0.100R			195-2000-008
PHD38999/20FF12XX	CSA-PHD19-12		19	12	1.2500-0.1P-0.3L-TS	.790	1.156	1.062	1.438	.154	.242	M28X1-6g0.100R	.126	M31X1-6g0.100R	195-2000-010
PHD38999/20FG16XX	CSA-PHD21-16		21	16	1.3750-0.1P-0.3L-TS		1.250	1.156	1.562			M34X1-6g0.100R		195-2000-012	
PHD38999/20FH24XX	CSA-PHD23-24		23	24	1.5000-0.1P-0.3L-TS		1.375	1.250	1.688			M37X1-6g0.100R		195-2000-014	
PHD38999/20FJ36XX	CSA-PHD25-36		25	36	1.6250-0.1P-0.3L-TS	1.500	1.375	1.812	.154	M37X1-6g0.100R	195-2000-016				

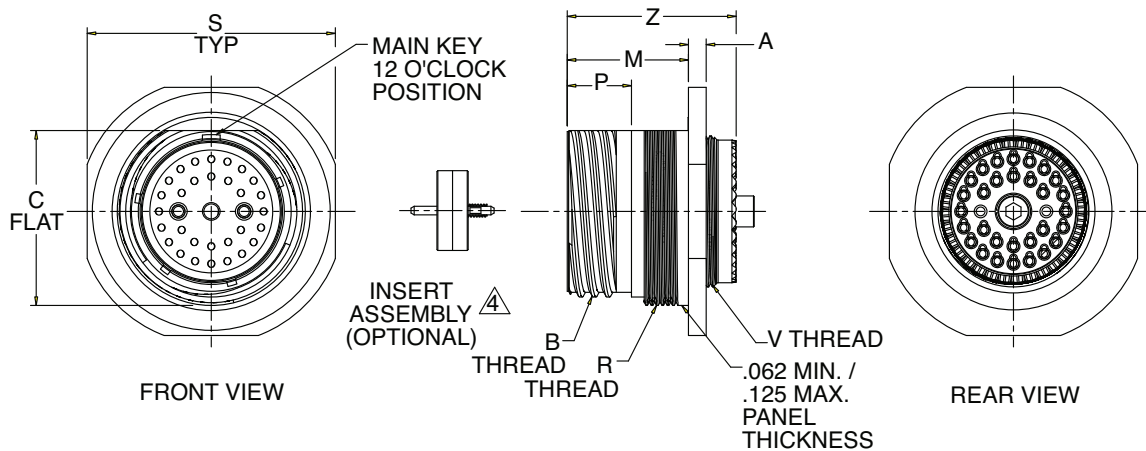


# High Density Circular Connector PHD38999 Series

## PHD Jam-Nut Receptacle

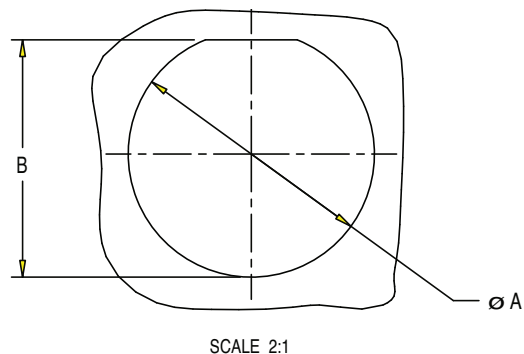
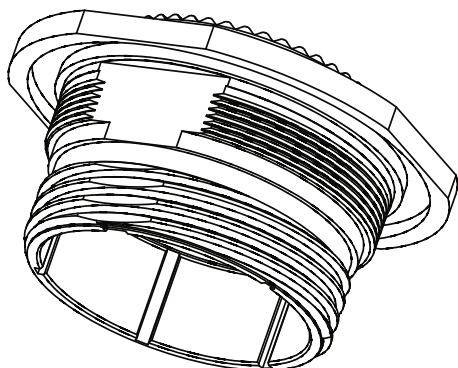
PHD38999 JAM RECEPTACLE - SIZE 22 CONTACT MATRIX / 900um CABLE TYPE														
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	A + .010 - .005	B THREAD CLASS 2 A (PLATED)	C + .004 - .010	Z + .005 - .004	M + .005 - .004	P + .016 - .004	S	METRIC R THREAD (PLATED)	METRIC V THREAD (PLATED)	INSERT ASSEMBLY (OPTIONAL) 
PHD38999/24FB4XX	CSA-PHD11-4	NICKEL	11	4	.104	.7500-0.1P-0.3L-TS	.751	1.243	.871	.555	1.250	M20X1-6g0.100R	M15X1-6g0.100R	195-2000-003
PHD38999/24FC8XX	CSA-PHD13-8		13	8	.104	.8750-0.1P-0.3L-TS	.938				1.375	M25X1-6g0.100R	M18X1-6g0.100R	195-2000-005
PHD38999/24FD12XX	CSA-PHD15-12		15	12	.104	1.0000-0.1P-0.3L-TS	1.062				1.500	M28X1-6g0.100R	M22X1-6g0.100R	195-2000-007
PHD38999/24FE20XX	CSA-PHD17-20		17	20	.104	1.1875-0.1P-0.3L-TS	1.187				1.625	M32X1-6g0.100R	M25X1-6g0.100R	195-2000-009
PHD38999/24FF30XX	CSA-PHD19-30		19	30	.135	1.2500-0.1P-0.3L-TS	1.312		.878	.563	1.812	M35X1-6g0.100R	M28X1-6g0.100R	195-2000-011
PHD38999/24FG40XX	CSA-PHD21-40		21	40	.135	1.3750-0.1P-0.3L-TS	1.437				1.938	M38X1-6g0.100R	M31X1-6g0.100R	195-2000-013
PHD38999/24FH48XX	CSA-PHD23-48		23	48	.135	1.5000-0.1P-0.3L-TS	1.562				2.062	M41X1-6g0.100R	M34X1-6g0.100R	195-2000-015
PHD38999/24FJ72XX	CSA-PHD25-72		25	72	.135	1.6250-0.1P-0.3L-TS	1.687				2.188	M44X1-6g0.100R	M37X1-6g0.100R	195-2000-017

PHD38999 JAM RECEPTACLE - SIZE #16 CONTACT MATRIX / 2MM CABLE TYPE														
SAMPLE PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	A + .010 - .005	B THREAD CLASS 2 A (PLATED)	C + .004 - .010	Z + .005 - .004	M + .005 - .004	P + .016 - .004	S	METRIC R THREAD (PLATED)	METRIC V THREAD (PLATED)	INSERT ASSEMBLY (OPTIONAL) 
PHD38999/24FB2XX	CSA-PHD11-2	NICKEL	11	2	.104	.7500-0.1P-0.3L-TS	.751	1.243	.871	.555	1.250	M20X1-6g0.100R	M15X1-6g0.100R	195-2000-002
PHD38999/24FC4XX	CSA-PHD13-4		13	4	.104	.8750-0.1P-0.3L-TS	.938				1.375	M25X1-6g0.100R	M18X1-6g0.100R	195-2000-004
PHD38999/24FD6XX	CSA-PHD15-6		15	6	.104	1.0000-0.1P-0.3L-TS	1.062				1.500	M28X1-6g0.100R	M22X1-6g0.100R	195-2000-006
PHD38999/24FE8XX	CSA-PHD17-8		17	8	.104	1.1875-0.1P-0.3L-TS	1.187				1.625	M32X1-6g0.100R	M25X1-6g0.100R	195-2000-008
PHD38999/24FF12XX	CSA-PHD19-12		19	12	.135	1.2500-0.1P-0.3L-TS	1.312		.878	.563	1.812	M35X1-6g0.100R	M28X1-6g0.100R	195-2000-010
PHD38999/24FG16XX	CSA-PHD21-16		21	16	.135	1.3750-0.1P-0.3L-TS	1.437				1.938	M38X1-6g0.100R	M31X1-6g0.100R	195-2000-012
PHD38999/24FH24XX	CSA-PHD23-24		23	24	.135	1.5000-0.1P-0.3L-TS	1.562				2.062	M41X1-6g0.100R	M34X1-6g0.100R	195-2000-014
PHD38999/24FJ36XX	CSA-PHD25-36		25	36	.135	1.6250-0.1P-0.3L-TS	1.687				2.188	M44X1-6g0.100R	M37X1-6g0.100R	195-2000-016



# High Density Circular Connector PHD38999 Series

## PHD Jam-Nut Receptacle

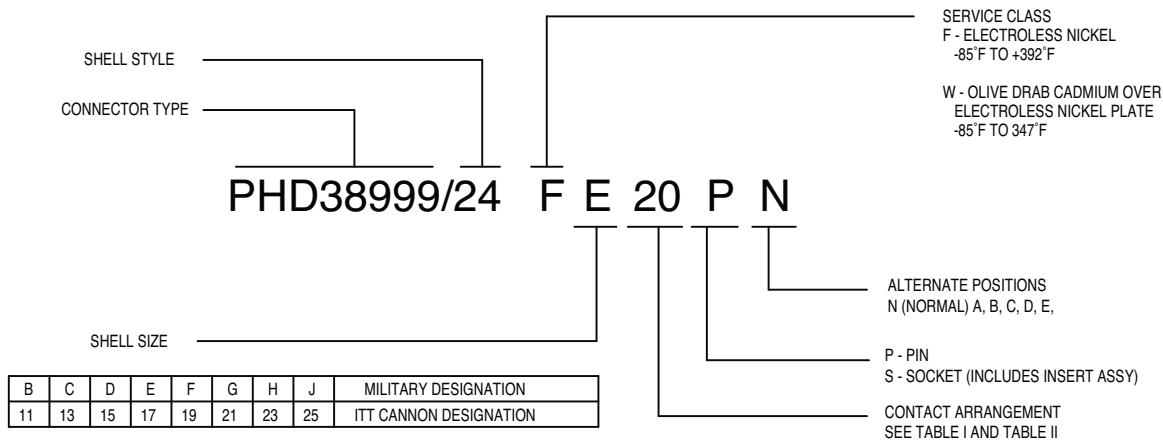


NOTES: UNLESS OTHERWISE SPECIFIED.

1. FOR CAVITY LAYOUT / MARKING, SEE APPLICABLE "CSA" CANNON STANDARD ARRANGEMENT.
2. MATERIAL TYPE:
  - SHELL: ALUMINUM ALLOY
  - FRONT PERIPHERAL SEAL: FLUOROSILICONE
  - REAR PLATE: ALUMINUM ALLOY
  - SCREWS, WASHERS, DOWEL PINS: STAINLESS STEEL
  - INTERNAL SPRINGS: STAINLESS STEEL
  - INTERNAL CUPS / CLIPS: COPPER
3. FINISH: ELECTROLESS NICKEL PLATING OR CADMIUM PLATING  
SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.
4. INSERT ASSEMBLY IS OPTIONAL AND MAY BE ADDED TO THE PLUG ASSEMBLY OR THE RECEPTACLE ASSEMBLY BUT NOT BOTH.  
SEE CONNECTOR ASSEMBLY MATRIX TABLE FOR PART NUMBERS.  
INSERT ASSEMBLY MATERIALS:
  - ALUMINUM ALLOY
  - STAINLESS STEEL HARDWARE
  - INTERNAL SLEEVES CERAMIC

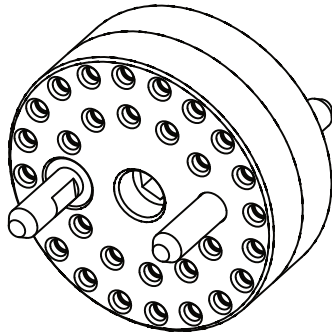
CONNECTOR PANEL CUTOUT		
SHELL SIZE	A +.010/-.000	B +.000/-.010
11	.825	.770
13	1.010	.995
15	1.135	1.085
17	1.260	1.210
19	1.385	1.335
21	1.510	1.460
23	1.635	1.585
25	1.760	1.710

### PART NUMBER SHOWN: SHELL SIZE 17/20 POSITION CONTACT ARRANGEMENT

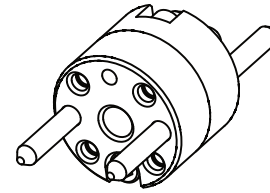


# High Density Circular Connector PHD38999 Series

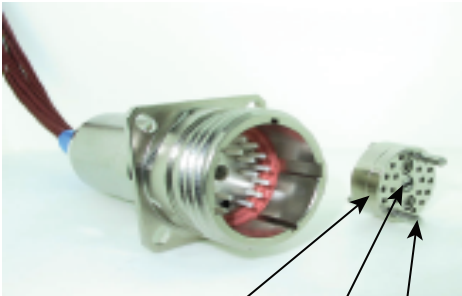
## PHD Front Insert Assembly



INSERT ASSY SIZES  
13 THRU 25



INSERT ASSY  
SIZE 11



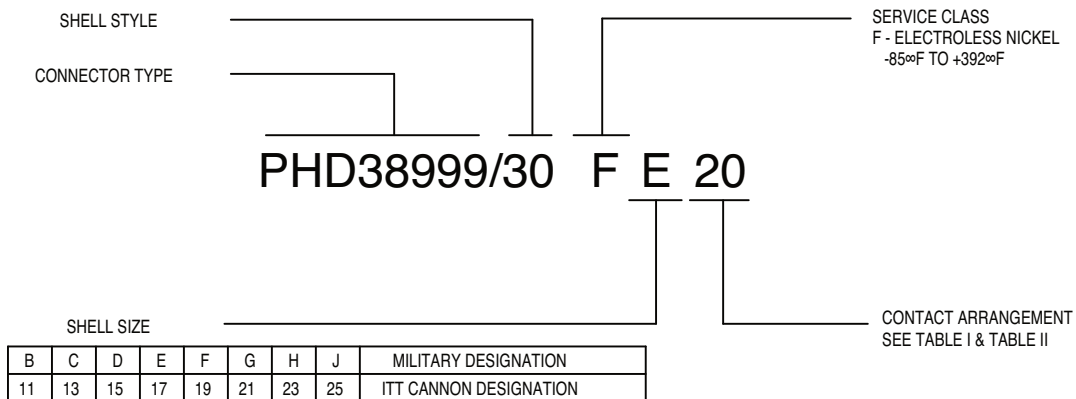
Insert Assy  
Guide Pin  
Jackscrew

NOTES: UNLESS OTHERWISE SPECIFIED.

1. FOR CAVITY LAYOUT SEE APPLICABLE "CSA" CANNON STANDARD ARRANGEMENT.
2. MATERIAL: TYPE / FINISH  
 INSERT: ALUMINUM ALLOY / ELECTROLESS NICKLE PLATE  
 HARDWARE: STAINLESS STEEL / PASSIVATED  
 INTERNAL SLEEVES: CERAMIC

### PART NUMBER

SHOWN: SHELL SIZE 17/20 POSITION CONTACT ARRANGEMENT





## PHD Front Insert Assembly

INSERT ASSEMBLY - SIZE #22 CONTACT MATRIX					
PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	A (DIA)
PHD38999/30FB4	CSA-PHD11-4	NICKEL	11	4	.421
PHD38999/30FC8	CSA-PHD13-8		13	8	.535
PHD38999/30FD12	CSA-PHD15-12		15	12	.660
PHD38999/30FE20	CSA-PHD17-20		17	20	.785
PHD38999/30FF30	CSA-PHD19-30		19	30	.874
PHD38999/30FG40	CSA-PHD21-40		21	40	1.000
PHD38999/30FH48	CSA-PHD23-48		23	48	1.124
PHD38999/30FJ72	CSA-PHD25-72		25	72	1.248

INSERT ASSEMBLY - SIZE #16 CONTACT MATRIX					
PART NUMBER	CSA NUMBER CAVITY LAYOUT	FINISH	SHELL SIZE	STANDARD NO. OF CAVITIES	A (DIA)
PHD38999/30FB2	CSA-PHD11-2	NICKEL	11	2	.421
PHD38999/30FC4	CSA-PHD13-4		13	4	.535
PHD38999/30FD6	CSA-PHD15-6		15	6	.660
PHD38999/30FE8	CSA-PHD17-8		17	8	.785
PHD38999/30FF12	CSA-PHD19-12		19	12	.874
PHD38999/30FG16	CSA-PHD21-16		21	16	1.000
PHD38999/30FH24	CSA-PHD23-24		23	24	1.124
PHD38999/30FJ36	CSA-PHD25-36		25	36	1.248

