



Series SuperNG

CLASS 1E

SuperNG

Double peripheral seal reverse-bayonet connectors designed to meet the latest, most stringent global Zone 1E qualification standards including those requiring long-term submersion

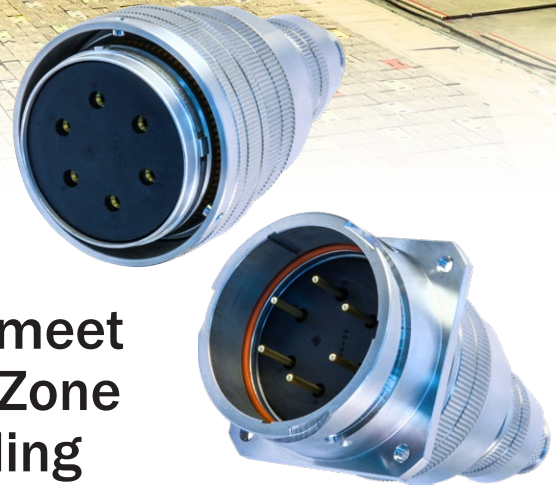
Glenair SuperNG connectors have been designed to withstand the most stringent LOCA qualification criteria, including those requiring long-term submersion, 60-year thermal cycle simulation, and long-term radiation exposure. SuperNG utilizes machined stainless steel shells and polymeric insert materials for maximum resistance to cumulative radiation, thermal, seismic, and pressure for class 1E harsh nuclear environments. Double peripheral seals ensure life-of-system environmental performance.

Built with proven reverse-bayonet technology for rapid mating and demating during maintenance cycles, and support for the broad range of military 5015 insert arrangements, the connectors can be configured in small shell sizes with as few as two signal contacts, all the way up to large size shell sizes accommodating over sixty 20-amp power contacts. Need a single 500 amp power contact layout for a three-phase motor application? The Series SuperNG supports that too.

Wire-to-connector termination is facilitated with precision-machined crimp or solder-cup contacts with ample wiring space in the connector housing for back-potting or environmental shrink boot accommodation.



Signature double O-ring peripheral seal



- Machined / passivated stainless steel shells
- Available EMC grounding fingers for improved shell-to-shell resistance
- Stainless steel backshells suitable for band termination and backpotting
- NPT threaded plugs and receptacles
- Radiation-hardened inserts, gaskets, seals, O-rings
- Standard signal, power or thermocouple contacts
- Polarization keys and keyways

NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

SuperNG performance and applications



KEY PERFORMANCE ATTRIBUTES: Glenair SuperNG Connectors

Glenair SuperNG connectors are optimized for containment area (Class 1E) applications in modern nuclear power plants with stringent LOCA test and performance requirements including radiation resistance, high-temperature tolerance, sealed, high-pressure tolerance, fluid/chemical resistance, and corrosion resistance. Radiation-hardened inserts, gaskets, seals, and O-rings ensure 60-year life-of-system performance and are manufactured in accordance with a 10CFR50 Appendix B quality system.

Test	Zone 1 Requirements
Vibration aging	90 minutes of vibration each orthogonal axis, no discontinuity of 1 ms or greater, sinusoidal motion 0.75 g from 5 Hz to 100 Hz to 5 Hz
Thermal cycling	13 cycles between 30°C [86°F] and 121°C [250°F]
Mechanical cycle aging	500 mating/un-mating cycles
Environmental Requirements (Temperature and Pressure)	Normal Operating Conditions: Normal Temperature: (10 - 48.9°C) [50 -120°F] Normal Pressure: -0.001 +0.007 Mpa [-0.2 +1.0 psig]
	Group 1 Abnormal Operating Conditions, 18 4-h events: Abnormal Temperature: (10 - 65.6°C) [50 -150°F] Abnormal Pressure: Atmospheric
	Group 2 Abnormal Events Operating Conditions, 1-5 30-day events: Abnormal Temperature : (10 - 121°C) [50 - 250°F] Abnormal Pressure: ≤ 0.124 Mpa [≤18 psig]
Normal Service Radiation	60-Year Equivalent Gamma Total Integrated Dose= 4,12 E+07 rads [412 kGy]
Total Accumulated Dose (TAD)	250 MRads (2.5 X 10 ⁸)
Seismic test	In accordance with IEEE 344 and IEEE 382, max peak value 6.5g
Thermal Aging	Qualified Life 60 years
Containment pressure test	4.7 bar [68 psig] for 24 hours
DBA (LOCA) Test	DBA Operating Conditions in 1-year-long event: Maximum Accident Temperature (for aprox. 3 s): 216.7°C [422°F] Maximum Accident Pressure (for aprox. 3 s): 406.8 kPa [59 psig] Post Accident Gamma Total Integrated Dose for 1 year = 3.7 E+07 rads [370 kGy] Post Accident Beta Total Integrated Dose for 1 year = 2.6 E+08 rads [2600 kGy] Chemical Spray 30 hours Post DBA 30 days in chemical spray fluid
Post DBA test	1-year long immersion as per IEEE 383:09-2015, water at 85.2°C [185.38°F] pressure 0.11 Mpa [16.62 psig]



GLENAIR SuperNG ZONE 1 INTERCONNECT APPLICATION SUPPORT

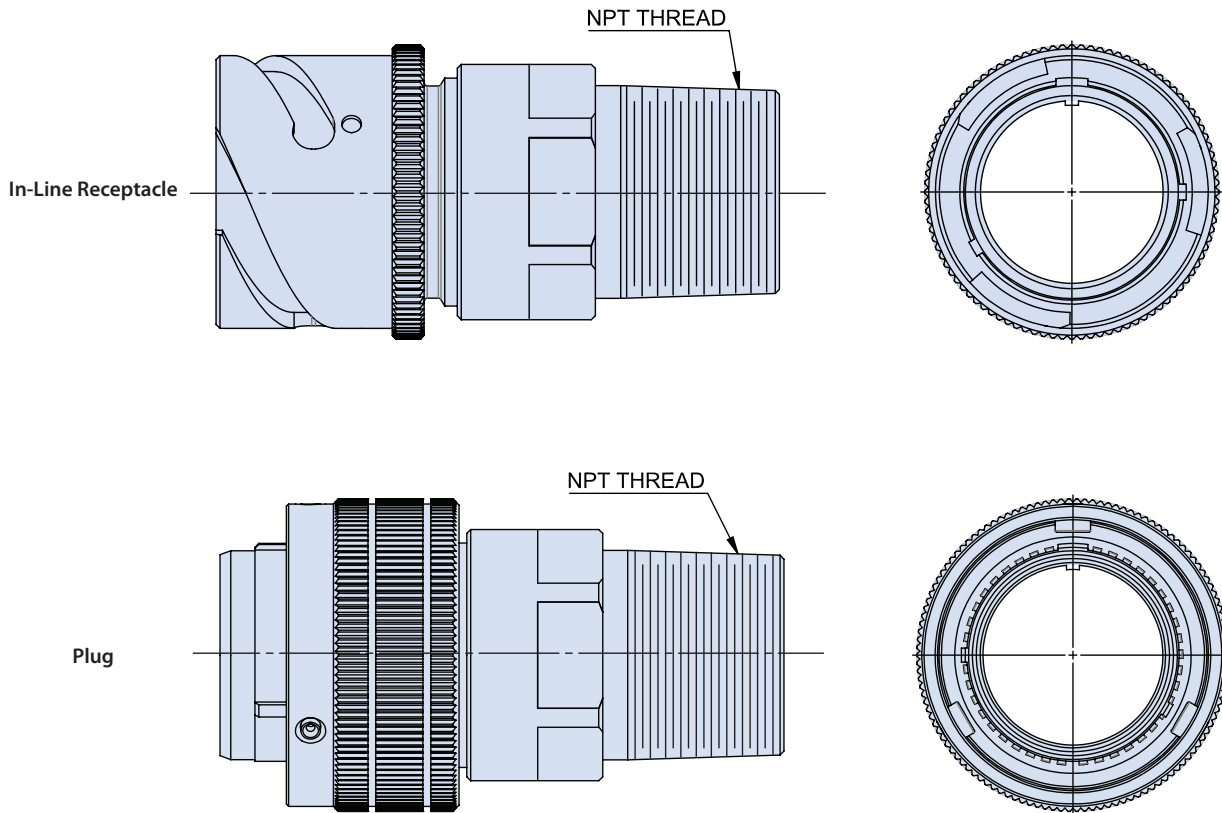
SuperNG is optimized for equipment applications in containment area Class 1E including:

- Valve controls/monitoring
- Control rod drive mechanisms
- Rod position indicators
- Pressure transmitters
- Solenoids
- Hydrogen detectors
- Fuel handing equipment
- Radiation tolerant cameras
- Limit switches
- Radiation detectors
- In-core detectors
- Data acquisition equipment
- Post accident monitoring systems
- Process control monitoring



NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS
**Double Peripheral Seal Interconnect for Stringent
Containment Area (Class 1E) Applications**
SuperNG connectors with NPT adapter

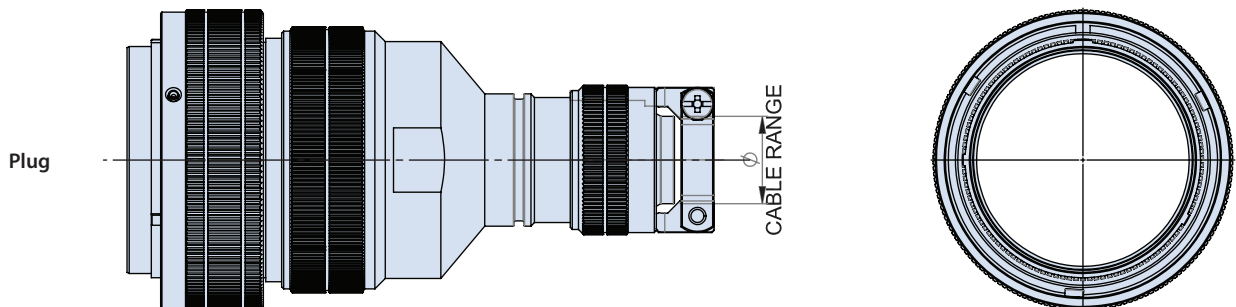
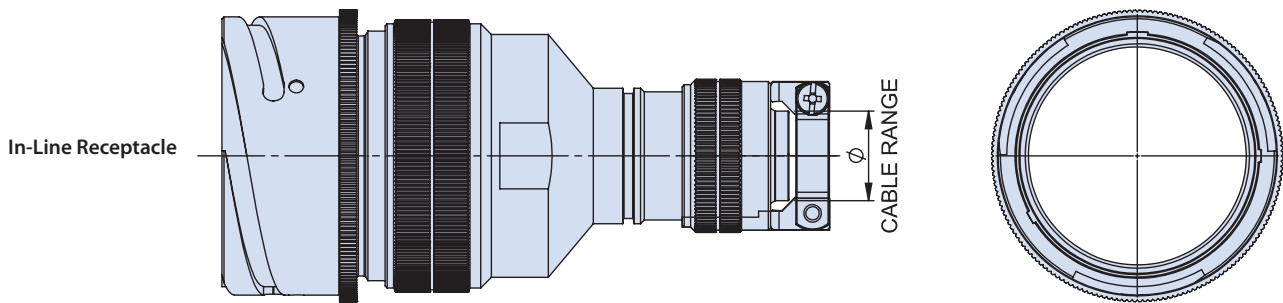
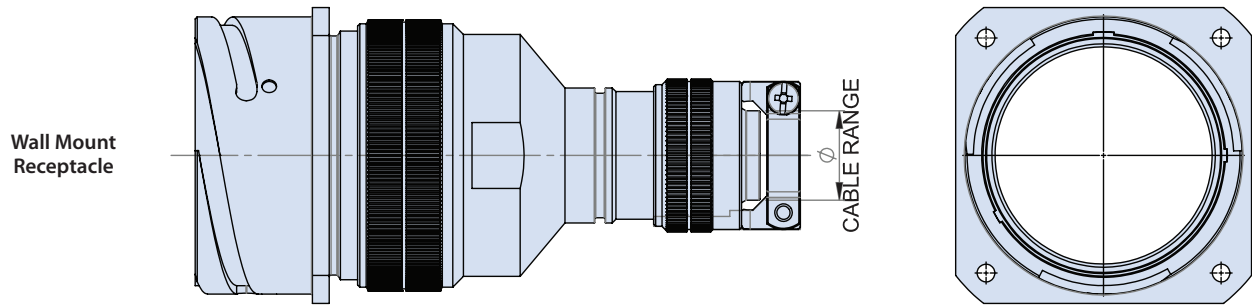
SuperNG RECEPTACLE AND PLUG WITH NPT ADAPTER



NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS
**Double Peripheral Seal Interconnect for Stringent
 Containment Area (Class 1E) Applications**
 SuperNG connectors with environmental cable clamp



SuperNG RECEPTACLES AND PLUG WITH 'CLASS C' ENVIRONMENTAL CABLE CLAMP (N5)





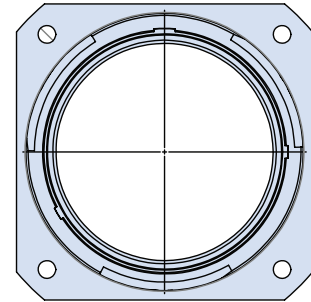
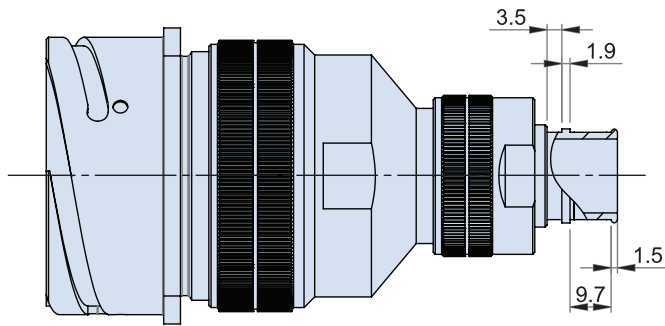
NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

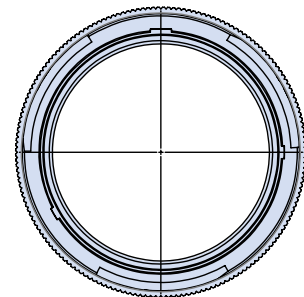
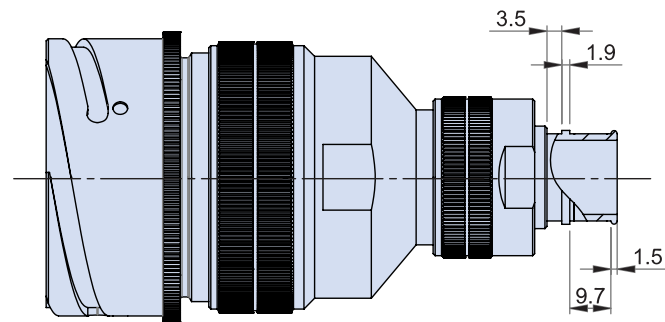
SuperNG connectors with shield termination backshells

SuperNG RECEPTACLE AND PLUG WITH SHIELD TERMINATION BACKSHELL

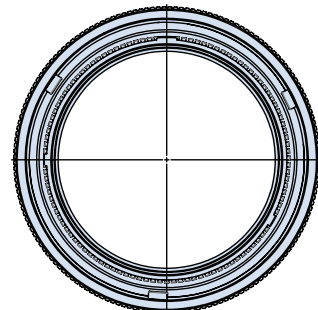
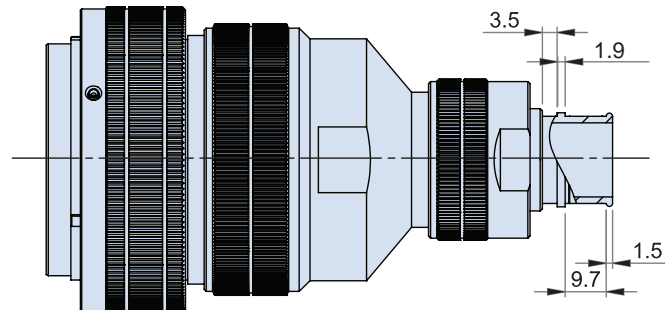
Wall Mount Receptacle



In-Line Receptacle



Plug



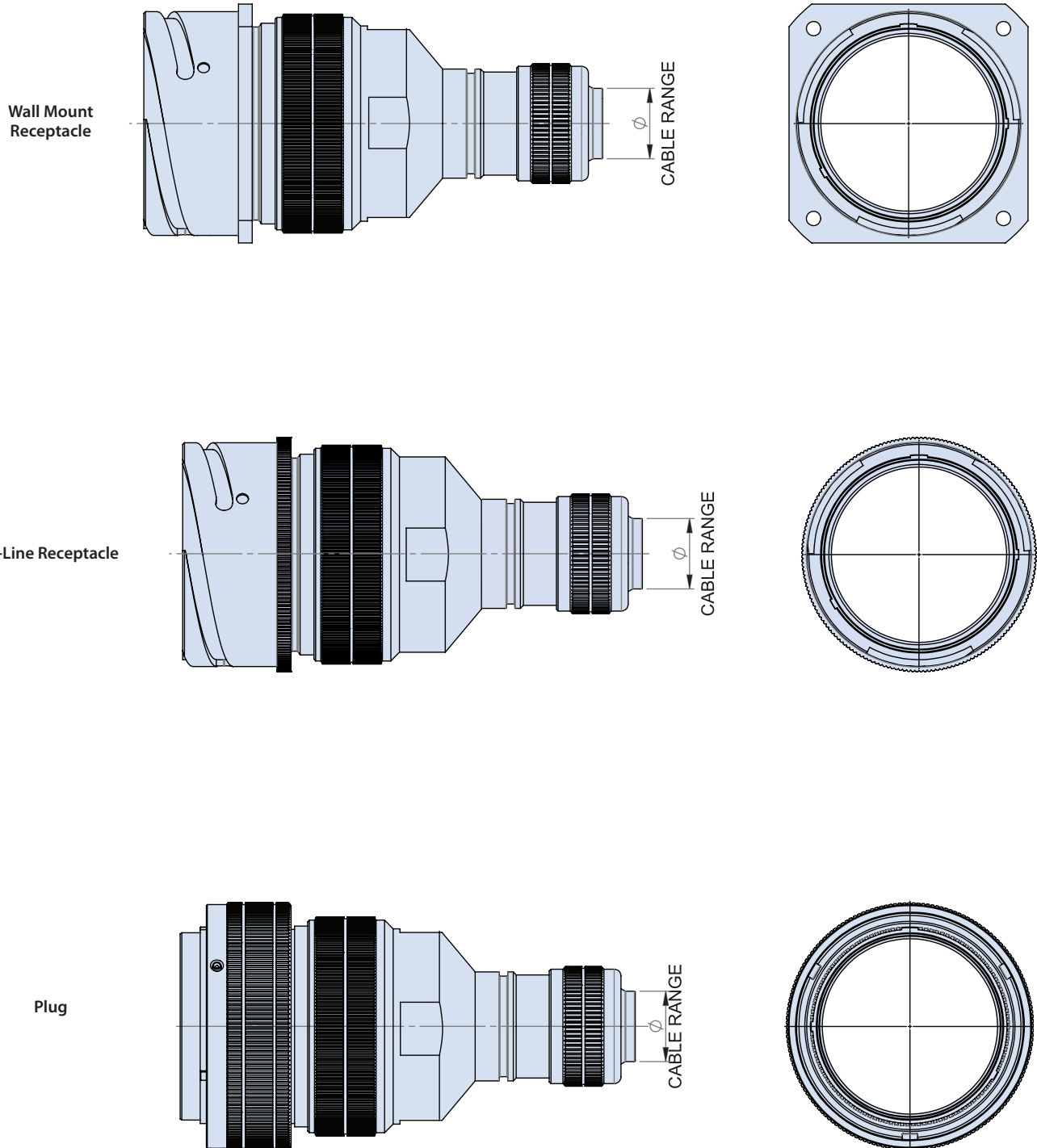
NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications



SuperNG connectors with environmental backshell or cable gland

SuperNG RECEPTACLE AND PLUG WITH ADAPTER AND PHM CABLE GLAND FOR JACKETED CABLES





NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

SuperNG contact arrangements

Arrangement	Rating	Contact Number	Contact Size									
			4/0	0	4	8	12	16	16S	18	20	
10SL-3	A	3								3		
10SL-4	A	2								2		
14S-1	A	3								3		
14S-2	I	4								4		
14S-5	I	5								5		
14S-6	I	6								6		
14S-7	A	3								3		
14S-9	A	2								2		
14S-07	I	7								7		
16S-1	A	7								7		
16S-4	D	2								2		
16S-5	A	3								3		
16S-8	A	5								5		
16-2	E	1					1					
16-7	A	3				1		2				
16-9	A	4					2	2				
16-10	A	3					3					
16-11	A	2					2					
16-12	A	1			1							
16-A10	I	10									10	
18-1	I	10						10				
18-3	D	2					2					
18-4	D	4						4				
18-5	D	3					2	1				
18-6	D	1			1							
18-06	A	6					4	2				
18-7	B	1				1						
18-8	A	8					1	7				
18-9	I	7					2	5				
18-10	A	4					4					
18-10S MT	A	4					4					
18-11	A	5						5				
18-12	A	6						6				
18-13	A	4				1	3					
18-16	C	1					1					
18-19	A	10						10				
18-20	A	5						5				
18-22	D	3						3				
18-30 (18-20x110°)	A	5						5				
20-2	D	1		1								
20-3	D	3					3					
20-4	D	4					4					
20-6	D	3						3				
20-7	A	8						8				
20-8	I	6				2		4				
20-9	A	8					1	7				
20-11	I	13						13				
20-14	A	5				2	3					
20-15	A	7					7					
20-16	A	9					2	7				
20-17	A	6					5	1				
20-18	A	9					3	6				
20-19	A	3				3						
20-21	A	9					1	8				
20-22	A	6				3		3				
20-23	A	2				2						
20-24	A	4				2		2				
20-A24	A	4				2		2				
20-25 (20-11x100°)	I	13						13				
20-27	A	14						14				
20-29	A	17						17				

* Only Crimp Contact Version

Arrangement	Rating	Contact Number	Contact Size									
			4/0	0	4	8	12	16	18	20		
20-30 (20-11x250°)	I	13									13	
20-33	A	11									11	
20-A8	I	8						2		6		
20-A9	A	9							9			
20-A48	I	19									19	
20-B8	A	8							4	4		
22-1	D	2						2				
22-2	D	3						3				
22-4	A	4						2	2			
22-5	D	6							2	4		
22-7	E	1		1								
22-9	E	3						3				
22-10	E	4								4		
22-11	B	2								2		
22-12	D	5						2		3		
22-14	A	19									19	
22-15	A	6							5	1		
22-17	A	9							1	8		
22-18	A	8									8	
22-19	A	14									14	
22-20	A	9									9	
22-21	A	3		1						2		
22-22	A	4						4				
22-23	A	8								8		
22-27	A	9						1		8		
22-28	A	7							7			
22-34	D	5							3	2		
22-82	A	10							2		8	
22-A10	A	10									10	
22-A37	A	37										37
22-22S MT	A	4						4				
24-2	D	7								7		
24-3	A	7							2	5		
24-4	D	4		1							3	
24-5	A	16									16	
24-06	D	6						4		2		
24-6	A	8								8		
24-07	D	7								7		
24-7	A	16							2	14		
24-9	A	2			2							
24-10	A	7						7				
24-11	A	9						3		6		
24-12	A	5			2				3			
24-013	A	13								6	7	
24-19	A	12									12	
24-20	D	11							2	9		
24-22	D	4						4				
24-27	E	7									7	
24-28	I	24									24	
24-67	A	19								19		
24-A1	B	1			1							
24-A8	A	8						5		3		
24-A11	A	11						2		9		
24-A12	A	12						2		10		
24-A25	A	25									25	
24-A28	I	28									28	
24-A55*	I	55										55
24-G5	A	5						5				
28-1	A	9						3	6			
28-2	D	14							2	12		
28-3	E	3						3				
28-6	D	3						3				
28-09	A	9						4		5		

NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

SuperNG contact arrangements



Arrangement	Rating	Contact Number	Contact Size							
			4/0	0	4	8	12	16	18	20
28-9	D	12					6	6		
28-10	A	7			2	2	3	3		
28-11	A	22					4	18		
28-12	A	26						26		
28-13 (28-12x100*)	A	26						26		
28-15	A	35						35		
28-16	A	20						20		
28-17	A	15						15		
28-18	I	12						12		
28-19	A	10					4	6		
28-20	A	14					10	4		
28-21	A	37						37		
28-22	D	6			3			3		
28-51	D	12					12			
28-59	A	17					7	10		
28-70	A	7				7				
28-72*	I	72								72
28-79	A	16				7		9		
28-84	A	9				9				
28-124	A	16				4		12		
28-A29	A	29				2		27		
28-A31*	A	31				6				25
28-A35	A	35						35		
28-A63	I	28					9	19		
28-B1	B	1		1						
28-B2	E	2				2				
32-1	D	5		2			3			
32-2	E	5			3			2		
32-3	D	9		1	2		2	4		
32-5	D	2		2						
32-6	A	23			2	3	2	16		
32-7	I	35					7	28		
32-8	A	30					6	24		
32-9	D	14			2			12		
32-013	D	13					13			
32-13	D	23					5	18		
32-15	D	8		2			6			
32-17	D	4			4					
32-22	A	54						54		
32-31	A	31						31		
32-59	A	42				2		40		
32-68	A	16			4			12		
32-689	A	9			3			6		
32-A5GM	A	5			5					
32-76	A	19					19			
32-79	D	5			4	1				
32-88	A	54						54		
32-A1	A	1		1						
32-A3	E	3			3					
32-A8	A	8				8				
32-A25	A	25					25			
32-A27	A	27					10	17		
32-A28	A	28					28			
32-A30	A	30					10	20		
32-A40	A	40						40		
32-A48	I	48						48		
32-A55	A	55						55		
32-B22	A	22			2			20		
36-01	C	1		1						
36-3	D	6			3			3		
36-4	A	3			3					
36-5	A	4			4					
36-6	A	6			2	4				

Arrangement	Rating	Contact Number	Contact Size							
			4/0	0	4	8	12	16	18	20
36-7	A	47						7	40	
36-8	A	47						1	46	
36-9	A	31				1	2	14	14	
36-10	A	48							48	
36-14	D	16					5	5	6	
36-15	A	35							35	
36-18 (36-9x100*)	A	31				1	2	14	14	
36-22	D	22						22		
36-35	A	36					4		32	
36-54=36-B39	A	39					8		31	
36-66	A	56						4	52	
36-74	A	44					1		43	
36-77	D	7				7				
36-A7	A	7			3	2		2		
36-A10	A	10				2	8			
36-A35	A	8			4				4	
36-A51	D	6			3	2			1	
36-A72	I	72						4	16	52
36-A99*	A	65							15	50
36-B61	E	6				2		4		
36-B78	D	14					12		2	
36-B90	D	1								n.1 Special Contact
36-D78	D	14					10		4	
40-1	D	30						6	24	
40-9	A	47					1	22	24	
40-10	A	29				4	9		16	
40-26	A	26					7	19		
40-31	D	31							31	
40-35	D	35							35	
40-47	A	47					1	22	24	
40-53	A	60							60	
40-56	A	85							85	
40-62	A	60							60	
40-63	A	61							61	
40-67	A	11				10			1	
40-100	A	100								100
40-150	I	150								150
40-951	A	51						25	26	
40-A3	A	5			3			2		
40-A4	A	6			4			2		
40-A5	A	5			3	1		1		
40-A5GM	A	5			5					
40-A6	B	6						6		
40-A8	E	8				4			4	
40-A9	A	9			3		6			
40-A10	D	8				4			4	
40-A14	A	14				8		6		
40-A20	D	20					2	18		
40-A24	D	24					8	16		
40-A38	A	38						38		
40-A51	A	31					15		16	
40-A55	A	5			5					
40-A56	A	85							85	
40-A62	A	62					2		60	
40-A65	A	65							65	
40-A70	A	70							70	
40-B4	E	4			4					
40-B19	A	19					19			
40-B25	A	29			4				25	
40-B37	A	37						37		
40-D4	C	4					4			
40-G4	E	4					4			

* Only Crimp Contact Version



NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

SuperNG insert rotation alternate positions

Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
10SL-3				
10SL-4				
14S-1	90	180	270	
14S-2		120	240	
14S-5		110		
14S-6	90			
14S-7	90	180	270	
14S-9	70	145	215	290
14S-07				
16S-1	80			280
16S-4	35	110	250	325
16S-5	70	145	215	290
16S-8		170	265	
16-2				
16-7	80	110	250	280
16-9	35	110	250	325
16-10	90	180	270	
16-11	35	110	250	325
16-12				
16A-10	35	112	235	315
18-1	70	145	215	290
18-3	35	110	250	325
18-4	35	110	250	325
18-5	80	110	250	280
18-6				
18-06	180			
18-7				
18-8	70			290
18-9	80	110	250	280
18-10		120	240	
18-10S MT				
18-11		170	265	
18-12	80			280
18-13	80	110	250	280
18-16				
18-19		120	240	
18-20	90	180	270	
18-22	70	145	215	290
18-29	90	180	270	
18-30				
20-2				
20-3	70	145	215	290

Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
20-4	45	110	250	
20-6	70	145	215	290
20-7	80	110	250	280
20-8	80	110	250	280
20-9	80	110	250	280
20-11				
20-14	80	110	250	280
20-15	80			280
20-16	80	110	250	280
20-17	90	180	270	
20-18	35	110	250	325
20-19	90	180	270	
20-21	35	110	250	325
20-22	80	110	250	280
20-23	35	110	250	325
20-24	35	110	250	325
20-A24	55	125	200	340
20-25				
20-27	35	110	250	325
20-29	80			280
20-30				
20-33				280
20-A8				
20-A9		110	250	
20-A48		80	280	
20-B8	80	110	250	280
22-1	35	110	250	325
22-2	70	145	215	290
22-4	35	110	250	325
22-5	35	110	250	325
22-7				
22-9	70	145	215	290
22-10	35	110	250	325
22-11	35	110	250	325
22-12	80	110	250	280
22-14	80	110	250	280
22-15	80	110	250	280
22-17	80	110	250	280
22-18	80	110	250	280
22-19	80	110	250	280
22-20	35	110	250	325
22-21	80	110	250	280

Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
22-22		110	250	
22-23	35		250	
22-27	80		250	280
22-28	80			280
22-34	80	110	250	280
22-82	80	110	250	280
22A-10		120	240	
22-A37	80	112	250	280
22-22S MT				
24-2	80			280
24-3	80	110	250	280
24-4	80	110	250	280
24-5	80	110	250	280
24-06	40			320
24-6	80	110	250	280
24-07	80			280
24-7	80	110	250	280
24-9	35	110	250	325
24-10	80			280
24-11	35	110	250	325
24-12	80	110	250	280
24-013				
24-19				
24-20	80	110	250	280
24-22	45	110	250	
24-27	80			280
24-28	80	110	250	280
24-67	80			335
24-A1				
24-A8				
24-A11	35	110	250	325
24-A12				
24-A25	80	110	250	280
24-A28	65	146	235	
24-A55	80	110	250	280
24-G5	70	110	240	270
28-1	80	110	250	280
28-2	35	110	250	325
28-3	70	145	215	290
28-6	70	145	215	290
28-09	110	250	260	280
28-9	80	110	250	280

NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications

SuperNG insert rotation alternate positions

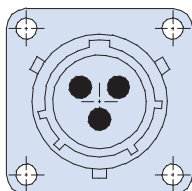


Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
28-10	80	110	250	280
28-11	80	110	250	280
28-12	90	180	270	
28-13				
28-15	80	110	250	280
28-16	80	110	250	280
28-17	80	110	250	280
28-18	70	145	215	290
28-19	80	110	250	280
28-20	80	110	250	280
28-21	80	110	250	280
28-22	70	145	215	290
28-51	80	135	190	
28-59	35	110	250	325
28-70	80			280
28-72	72	144	216	288
28-79	70	133	227	290
28-84	45	157	90	135
28-124	80	110	250	280
28A-29	80	110	250	280
28A-31	35		260	310
28A-35	80	110	250	280
28A-63		100	260	
28-B1				
28-B2				
32-1	80	110	250	280
32-2	70	145	215	290
32-3	80	110	250	280
32-5	35	110	250	325
32-6	80	110	250	280
32-7	80	125	235	280
32-8	80	125	235	280
32-9	80	110	250	280
32-013	65	130	230	295
32-13	80	110	250	280
32-15	35	110	250	280
32-17	45	110	250	
32-22	80	110	250	280
32-31	80	125	215	280
32-59	36	108	252	324
32-68	65	135	225	275
32-689				

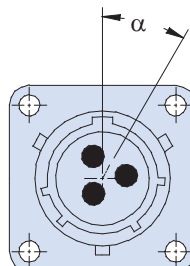
Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
32-A5 GM				
32-76	80	110	250	280
32-79				
32-88	80	110	250	280
32-A1				
32-A3	22	44	76	98
32A-8	35	122		315
32A-25	60	120		
32-A27	30	115	285	335
32-A28				
32-A30				
32A-40	35	130		
32A-48	80	125	235	
32-A55	80	110	250	280
32-B22	35	110	250	325
36-01				
36-3	70	145	215	290
36-4	70	145	215	290
36-5		120	240	
36-6	35	110	250	325
36-7	80	110	250	280
36-8	80	110	250	280
36-9	80	125	235	280
36-10	80	125	235	280
36-14	90	180	270	
36-15	60	125	245	305
36-18				
36-22	80	110	250	280
36-35				
36-54 = 36-B39	67			
36-66	110	250	260	280
36-74				
36-77	45	90		
36-A7				
36-A10	45	110	250	315
36-A35				
36-A51	45	135	225	315
36A-72		110		
36-A99	30	135		
36B-61				
36B-78	35	106	254	325
36B-90				

Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
36D-78	35	106	254	325
40-1	65	130	235	300
40-9	65	125	225	310
40-10	65	125	225	310
40-26	80	110	250	280
40-31	80	110	250	280
40-35	70	130	230	290
40-47	65	125	225	310
40-53	80	110	250	280
40-56	72	144	216	288
40-62	30	130	220	290
40-63	80			280
40-67	70	110	230	280
40-100	30	105	230	315
40-150				
40-951	90	105		
40-A3	70	145	215	290
40-A4	50	120	240	325
40-A5	33			270
40-A6	35	110	250	280
40-A5GM	33			270
40-A8	35	110	250	325
40-A9				
40-A10	65			
40-A14	80	135	195	
40-A20	80	110	250	280
40-A24				
40-A38	37			
40-A51				
40-A55				
40-A56	72	144	216	288
40-A62	80	130	230	280
40-A65	70	145	215	285
40-A70	80	110	250	280
40-B4	45	110	215	300
40-B19	35	105	255	325
40-B25				
40-B37				
40-D4				
40-G4				

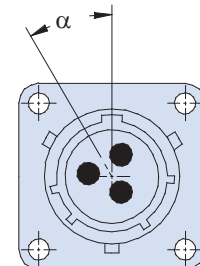
Insert Rotation (front view)



Normal Position



Alternate Position with Pin Contacts



Alternate Position with Socket Contacts