



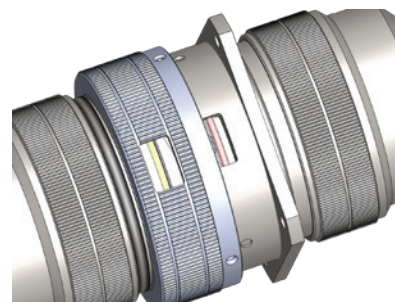
Series SuperNG

ZONE 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

The Glenair SuperNG series is designed to exceed the most stringent Gen III zone 1E plant LOCA qualification criteria, including those requiring long-term submersion and a 60 year plus installed life. SuperNG quick connect connectors utilize potted machined stainless steel shells on both plug and receptacle, with triple keyways and a precise reverse-bayonet coupling system, designed to ensure simple and accurate mating alignment by double-gloved technicians during outage servicing. Precision-machined non-organic Macor ceramic inserts guarantee lifetime contact alignment and maximum temperature and radiation resistance. Double peripheral seals are formulated from a Glenair signature EPDM material specifically designed for high radiation and high temperature zone 1E applications. SuperNG offers full EMC compliance to the most severe Gen III plant requirements.



Signature double O-ring peripheral seal

SuperNG connectors are available in a broad range of shell sizes and contact configurations with industry-standard NPT threads for device mounting of receptacles to pressure transducers, solenoids, and limit switches, as well as configurations for all other plant I&C and small to medium motor applications, including CRDM, DRPI, and fan RTDs and motors.



- **Machined / passivated stainless steel shells**
- **Stainless steel backshells for backpotting**
- **NPT threaded plugs and receptacles**
- **Radiation-resistant inserts, gaskets, seals, O-rings**
- **Standard signal, power, or thermocouple contacts**
- **Triple polarization keys and keyways**

NUCLEAR-GRADE QUICK-CONNECT CONNECTORS

Double Peripheral Seal Interconnect for Stringent Gen III Plant Containment Area Applications



SuperNG performance and applications

Glenair SuperNG connectors are optimized for containment area applications in modern Gen III nuclear plants that require performance to the industry's most severe requirements, including high radiation resistance, high-temperature tolerance, fluid/chemical resistance, and corrosion resistance. Macor non-organic ceramic inserts guarantee radiation and temperature resistance for a 60+ year installed life, and custom-formulated EPDM O-rings ensure maximum performance and long-term compression set resistance. All components are manufactured in-house under our 10CFR50 Appendix B audited nuclear quality program.

Test Phase	Qualification Parameter Levels
Functional Tests (repeated between test phases)	Insulation Resistance (500VDC) Contact Resistance (1 amp applied current) Dielectric Withstand Voltage (2200VAC/60 sec) Visual Inspection
Thermal Aging	Arrhenius Methodology for 60 Year Qualified Life O-Rings replaced at 10 years or each mating cycle QL includes Normal + Abnormal environment
Thermal Cycle Aging	100 Cycles 70°F to 175°F (2 hour dwell times) 15 Cycles 70°F to 250°F (2 hour dwell times)
Connection Cycling	550 Connect/Disconnect Cycles unpowered
Radiation Aging and Accident Radiation	275 Mega-Rads (Gamma + Beta radiation) @ < 1.0 Mrads/hr
Vibration Aging	90 min/axis (X,Y,Z) @ 0.75g from 5 – 100 – 5 Hz
Seismic Qualification	IEEE 344 (RMF) & IEEE 382 (RIM) testing RMF: 5 OBE = 1 SSE, 1-100HZ, ZPA >12g RIM: Res Search, 2 OBE + 1SSE sine motion (IEEE382) Powered & Monitored for chatter/continuity & shorting >1 msec
Containment Pressure	75 psig air for 24 hours at 24°C Powered & Monitored for continuity and shorting
Accident Qualification	Steam Test with, Two Transients, RT to 435°F/75 psig in 20 sec Transient 1: RT to 325°F in <5 sec, Reach 435 in 20 sec, 2 hrs Transient 2: RT to 325°F in <5 sec, Reach 435 in 20 sec, Chemical Spray (pH max 11.0), 27 hours of spray, Once temp cools to 185°F, flood chamber with chem spray solution and leave test specimens submerged for 1 year. Powered and Monitored continuously for continuity and shorting



SuperNG mated pairs are available as qualified prewired and potted assemblies with customizable cable length on the field side, as well as length of individual conductors on the device side for specific application requirements.

GLENAIR SuperNG ZONE 1 INTERCONNECT APPLICATION SUPPORT

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

- Valve control/monitoring
- Pressure transducers
- Control rod drive mechanisms
- Rod position indicators
- Pressure transmitters
- Solenoids
- Hydrogen detectors
- Fuel handling equipment

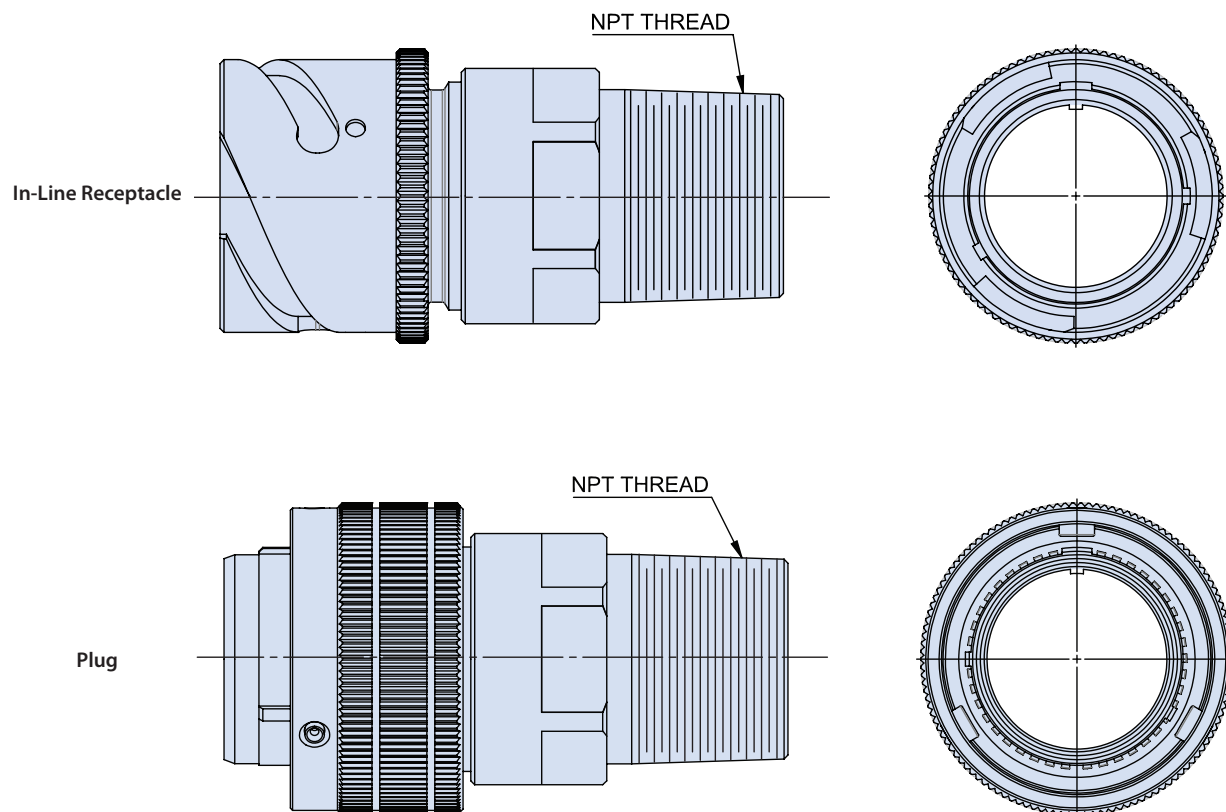


NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

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

SuperNG connectors with NPT adapter

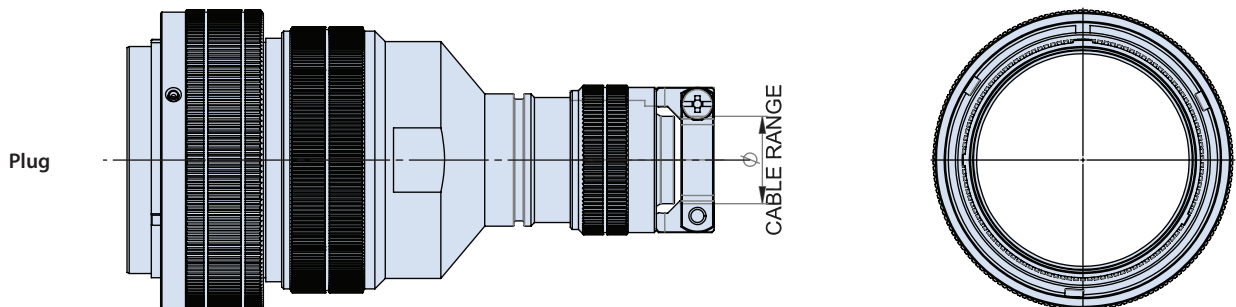
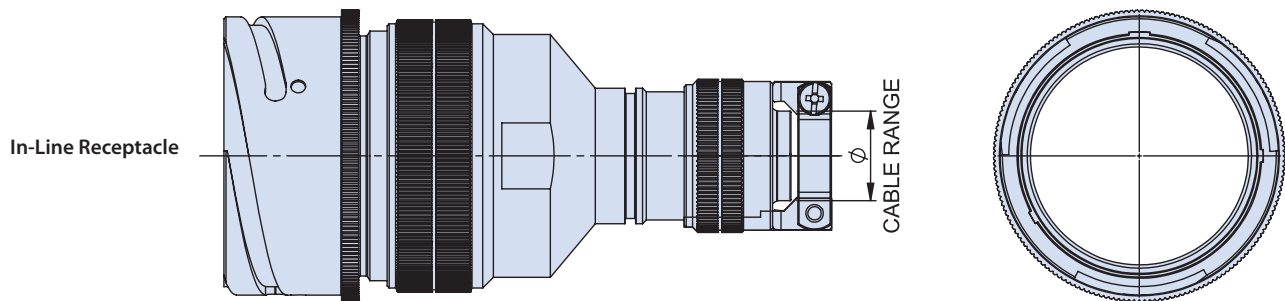
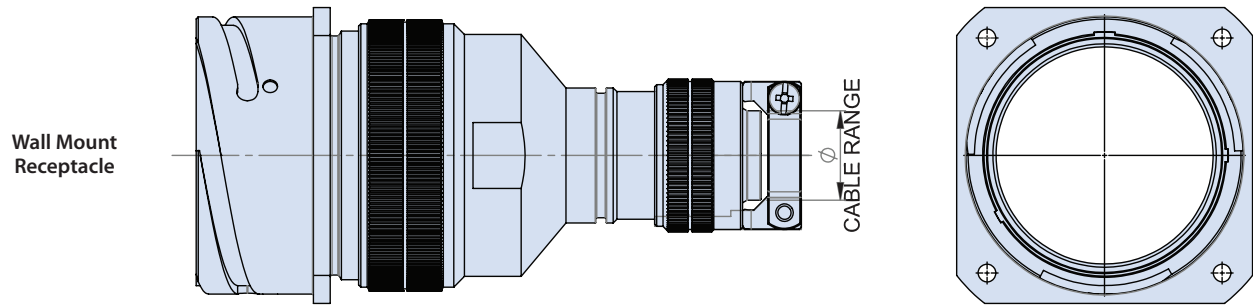
SuperNG RECEPTACLE AND PLUG WITH NPT ADAPTER



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)





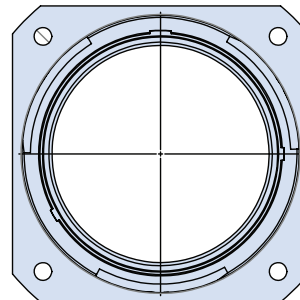
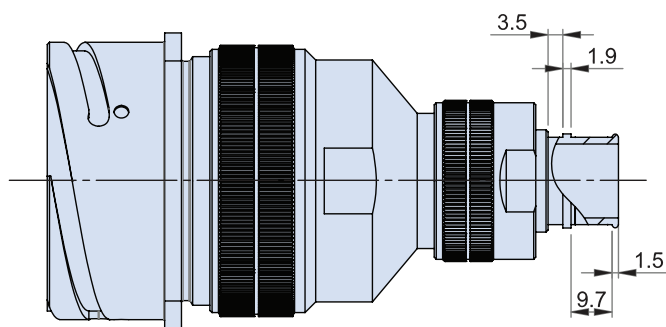
NUCLEAR-GRADE QUICK-DISCONNECT CONNECTORS

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

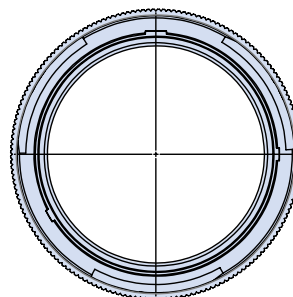
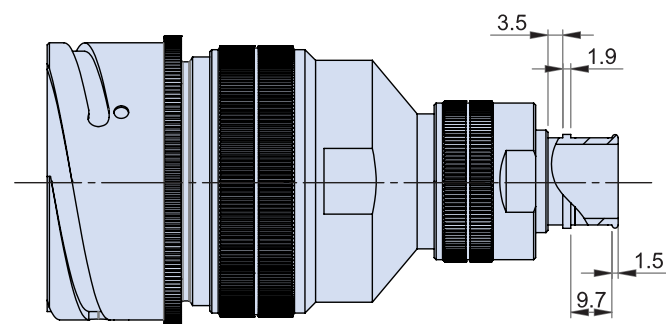
SuperNG connectors with shield termination backshells

SuperNG RECEPTACLE AND PLUG WITH SHIELD TERMINATION BACKSHELL

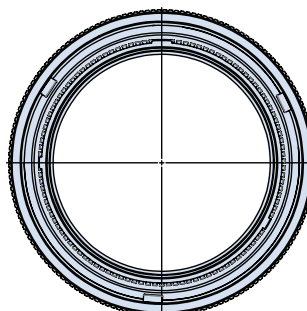
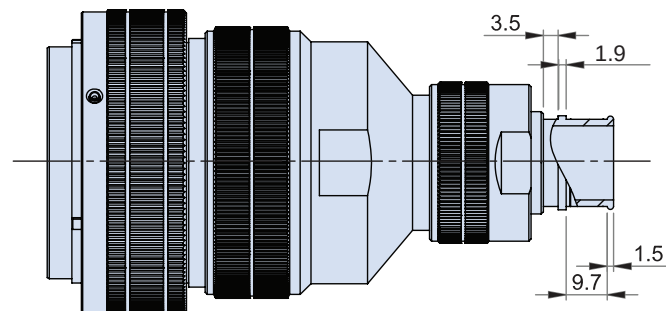
Wall Mount Receptacle



In-Line Receptacle



Plug

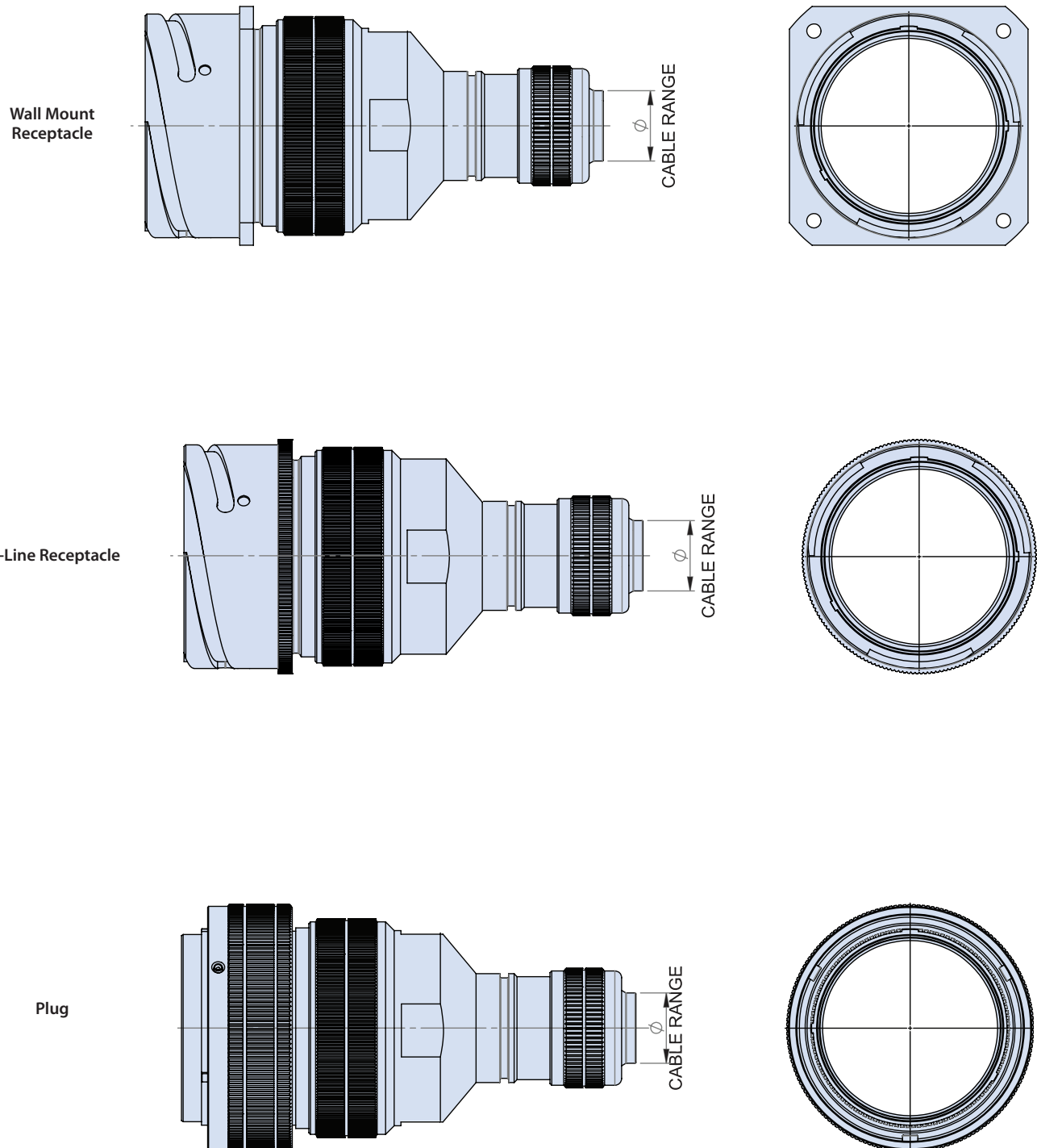


Double Peripheral Seal Interconnect for Stringent Containment Area (Class 1E) Applications



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 (18-20x10")	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										
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			
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

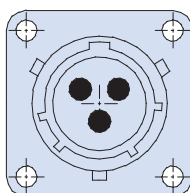


Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
28-10	80	110	250	280
28-11	80	110	250	280
28-12	90	180	270	
28-13				
28-15	80	110	250	280
28-16	80	110	250	280
28-17	80	110	250	280
28-18	70	145	215	290
28-19	80	110	250	280
28-20	80	110	250	280
28-21	80	110	250	280
28-22	70	145	215	290
28-51	80	135	190	
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				

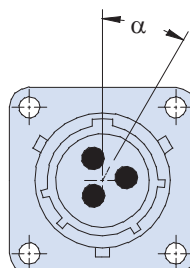
Arrangement	$\alpha \pm 2^\circ$			
	W	X	Y	Z
32-A5 GM				
32-76	80	110	250	280
32-79				
32-88	80	110	250	280
32-A1				
32-A3	22	44	76	98
32A-8	35	122		315
32A-25	60	120		
32-A27	30	115	285	335
32-A28				
32-A30				
32A-40	35	130		
32A-48	80	125	235	
32-A55	80	110	250	280
32-B22	35	110	250	325
36-01				
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				

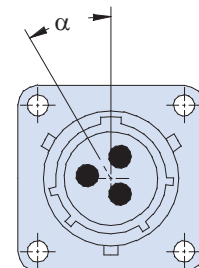
Insert Rotation (front view)



Normal Position



Alternate Position
with Pin Contacts



Alternate Position
with Socket Contacts