Specifications

North American Watertight Pin & Sleeve Devices

Engineered to IP67 Watertight Standards

- Listed to UL 1682 and 1686
- Certified to CSA Standard C22.2 number 182.1
- Classified to IEC Standards 309-1 and 309-2 for both North American-rated and International-rated voltages and services
- CE marking per low-voltage directives 73/23/EEC, 93/68/EEC

4100P12W 4100C12W

Material Specifications

Inlets

PART	MATERIAL
Housing	Valox 357
Locking Ring	Valox 357
Mounting Flange	Valox 357
Contact Carrier	Nylon for 20 and 30 Amp devices; Reinforced nylon for 60 and 100 Amp devices
Phase, Ground Pins	Brass
20, 30, 60A Terminal Screws	Brass
100A Terminal Screws	Stainless Steel
Sealing Gasket	Solid Chloroprene

Connectors

PART	MATERIAL
Housing	Valox 357
Internal Cord Clamp Asmbly	Thermoplastic
External Cord Clamp Asmbly	Valox 357
Gland Cap	Valox 357
Grommet	Chloroprene Onion Skin
Cover with Arm	Valox 357
Arm Spring	"Performance Grade" Stainless Steel
Cover Eyelet	Nickel-Plated Brass
Sealing Gasket	Solid Chloroprene
Contact Carrier	Nylon for 20 and 30 Amp devices; Reinforced nylon for 60 and 100 Amp devices
Phase, Ground Sleeve	Brass
Sleeve Spring	Stainless Steel
20, 30, 60A Terminal Screws	Brass
100A Terminal Screws	Stainless Steel
Internal Screws	Zinc-plated Steel
External Screws	Acid-proof Stainless Steel

Plugs

PART	MATERIAL
Housing	Valox 357
Locking Ring	Valox 357
Sealing Gasket	Solid Chloroprene
Internal Cord Clamp Asmbly	Thermoplastic
External Cord Clamp Asmbly	Valox 357
Gland Cap	Valox 357
Grommet	Chloroprene Onion Skin
Contact Carrier	Nylon for 20 and 30 Amp devices; Reinforced nylon for 60 and 100 Amp devices
Ground, Phase Pins	Brass
20, 30, 60A Terminal Screws	Brass
100A Terminal Screws	Stainless Steel
Internal Screws	Zinc-plated Steel
External Screws	Acid-proof Stainless Steel

Receptacles

PART	MATERIAL
Housing	Valox 357
Mounting Flange	Valox 357
Cover with Arm	Valox 357
Arm Spring	"Performance Grade" Stainless Steel
Cover Eyelet	Nickel-Plated Brass
Sealing Gasket	Solid Chloroprene
20, 30, 60A Terminal Screws	Brass
100A Terminal Screws	Stainless Steel
Phase, Ground Sleeves	Brass
Sleeve Spring	Stainless Steel

Valox® is a registered trademark of GE.

STANDARDS & CERTIFICATIONS				
Pin & Sleeve: Inlets, Connectors, Plugs, Receptacles				
UL 1682 & 1686	CSA C22.2 No. 182.1	NOM	CE	IEC 309-1 & 309-2
E164321 & E164322	LR700925	✓	✓	✓

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Further items on request. Dimensions mm. Subject to change without notice.

North American Watertight Pin & Sleeve Devices

460P7W 460C12W

Engineered to IP67 Watertight Standards

Performance Specifications – UL 1682 & 1686

Electrical

Dielectric Voltage	Devices rated≤ 300V: 2000V for 1 min. Devices rated >300V: 3000V for 1 min.
Insulation Resistance	500 V for 1 min. Insulation Resistance ≥ 5 megohms
Ground Path Current	Apply high current for short time (See Table 1) and maintain continuity
Overload	150% of rated current and 100% of rated voltage for 50 cycles (Power factor 0.75–0.80)
Current Interrupting	Certified for current interrupting at full-rated current and voltage
Temperature Rise	Max 30°C rise at full rated current (after overload)
Resistance to Arcing	Continuation of overload for additional 200 cycles
Endurance with Load	Device # Cycles with Load
	20A 5000 Rated Current,Voltage 30A,60A 1000 Rated Current,Voltage 100A 250 Rated Current,Voltage
	(Power Factor 0.75 - 0.80)

Mechanical

Mold Stress Relief	70°C for 7 hrs
Humidity	32°C, 93% humidity, 168 hrs
Cable Secureness	Pull force and apply torque for 1 minute (See Table 2)
Impact	Drop from 30" 8 times after conditioning to -25°C, for 6 hrs
Crush	250 lbs for 1 min after -25°C for 6 hrs
Withdrawal Force	Pull for one minute (See Table 3)
Strength of Insulating Base and Support	110% of specified tightening torque on terminal screws
Endurance	Device Total # Cycles (connect & disconnect)
	20A 5000 30A,60A 2000 100A 500
Polarization Integrity	Matching devices will not mate so that ground is energized even when polarization feature is removed and 40-lb insertion force applied

Environmental

Flammability	V2 or better on 20 and 30 amp devices per UL 94 or CSA 22.2 No 0.6 ; V-0 on 60 & 100 amp devices
Resistance to Corrosion	Ferrous parts immersed in 10% ammonium chloride solution at 20°C for 10 minutes
Moisture Resistance per UL 1682	Watertight: Device immersed for 24 hrs in 5 cm of 25°C water Splashproof: 1" dia. water stream at 15 PSI from 10 ft. for 5 minutes
UV Resistance	Exposed plastic materials are UV stabilized

Short-Time Grounding Test Currents

Device Rating, Amperes	Minimum Size Equipment Grounding Conductor (Copper) AWG	(mm2)	Time, Seconds	Test Current, Amperes
20	12	(3.3)	4	470
30	10	(5.3)	4	750
60	10	(5.3)	4	750
100	8	(8.4)	4	1180

Ground-path integrity is of critical importance to safe operation of industrial equipment. Pin and sleeve devices are tested by applying a test current through their ground path that far exceeds the device rating. All devices are properly wired and connected to line current at rated values. Then the ground path is subjected to a dramatic, sudden increase in current for 4 seconds. In all cases, the ground pin, sleeve, and terminals of the devices must sustain the test current, continue to function properly, and show no evidence of damage or deterioration in any electrical or mechanical elements of the ground path. Test current values and test parameters are displayed in the above chart.

Cord Secureness Test Values

Device Rating, Amperes	Force lb	Force N	Torque ft-lb	Torque N•M	Maximum Displacement inches	Maximum Displacement mm
20	30	133	0.4	0.54	≤ 3/32	2.38
30	75	333	0.5	0.68	≤ 3/32	2.38
60	150	667	1.0	1.4	≤ 3/32	2.38
100	150	667	2.0	2.7	≤ 3/32	2.38

Heavy cord stress is typical of industrial applications. To assure you of top performance, pin and sleeve devices are subjected to a punishing series of tests to confirm they can absorb heavy cord pulls. The cord conductors wired to devices are simultaneously twisted and pulled. Values for the applied twisting torque and force of pull are shown above. In all cases, the cord displacement is less than 3/32 inches.

Minimum Withdrawal Force

Device Rating, Amperes	Minimum Withdrawal Force lb	Minimum Withdrawal Force N
20	5	22
30	6	27
60	15	67
100	20	89

In industrial settings, inadvertent disconnection of power can be troublesome at best, dangerous at worst, and unacceptable in any case. To verify that pin and sleeve plugs and connectors remain securely connected, they are tested to establish the minimum force required for withdrawal. In establishing these minimum withdrawal forces, the plugs and connectors are properly mated, but not locked with locking rings or other mechanical means. The pins and sleeves provide the only resistance to the force of withdrawal. In all cases, the values in the table above show the minimum force required to separate the plugs and connectors.

20 & 30Amp

North American Watertight Pin & Sleeve Devices

Engineered to IP67 Watertight Standards

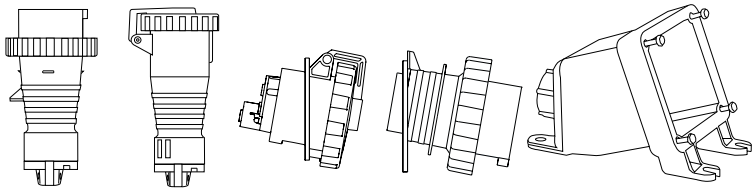
32064W

320p4W

North American Devices, IEC 309-1 & 309-2

WATERTIGHT

PLUG CONNECTOR RECEPTACLE INLET BACK BOX



AMPS	WIRING	VOLTAGE AC	CONNECTOR/ RECEPTACLE	PLUG/ INLET	PLUG	CONNECTOR	RECEPTACLE	INLET	BACK BOX
20	2p3w	125			320P4W	320C4W	320R4W	320B4W	BX230-V
	2p3w	250			320P6W	320C6W	320R6W	320B6W	BX230-V
	2p3w	480			320P7W	320C7W	320R7W	320B7W	BX230-V
	3p4w	125/250			420P12W	420C12W	420R12W	420B12W	BX230-V
	3p4w	3Ø250			420P9W	420C9W	420R9W	420B9W	BX230-V
	3p4w	3Ø480			420P7W	420C7W	420R7W	420B7W	BX230-V
	3p4w	3Ø600			420P5W	420C5W	420R5W	420B5W	BX230-V
	4p5w	3ØY120/208			520P9W	520C9W	520R9W	520B9W	BX230-V
	4p5w	3ØY277/480			520P7W	520C7W	520R7W	520B7W	BX230-V
	4p5w	3ØY347/600			520P5W	520C5W	520R5W	520B5W	BX230-V
30	2p3w	125			330P4W	330C4W	330R4W	330B4W	BX230-V
	2p3w	250			330P6W	330C6W	330R6W	330B6W	BX230-V
	2p3w	480			330P7W	330C7W	330R7W	330B7W	BX230-V
	3p4w	125/250			430P12W	430C12W	430R12W	430B12W	BX230-V
	3p4w	3Ø250			430P9W	430C9W	430R9W	430B9W	BX230-V
	3p4w	3Ø480			430P7W	430C7W	430R7W	430B7W	BX230-V
	3p4w	3Ø600			430P5W	430C5W	430R5W	430B5W	BX230-V
	4p5w	3ØY120/208			530P9W	530C9W	530R9W	530B9W	BX230-V
	4p5w	3ØY277/480			530P7W	530C7W	530R7W	530B7W	BX230-V
	4p5w	3ØY347/600			530P5W	530C5W	530R5W	530B5W	BX230-V

Additional information for Back Boxes and Accessories can be found on document no. 7525.

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Created 13.05.2004
L1000

60 & 100Amp

North American Watertight Pin & Sleeve Devices

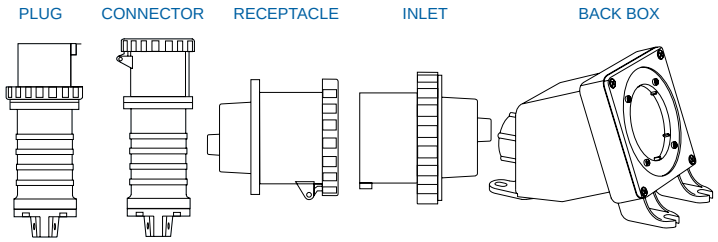
Engineered to IP67 Watertight Standards


360B7W


360R6W


4100P12W

WATERTIGHT



North American Devices, IEC 309-1 & 309-2

AMPS	WIRING	VOLTAGE AC	CONNECTOR/ RECEPTACLE	PLUG/ INLET	PLUG	CONNECTOR	RECEPTACLE	INLET	BACK BOX
60	2p3w	125			360P4W	360C4W	360R4W	360B4W	BX60-V
	2p3w	250			360P6W	360C6W	360R6W	360B6W	BX60-V
	2p3w	480			360P7W	360C7W	360R7W	360B7W	BX60-V
	3p4w	125/250			460P12W	460C12W	460R12W	460B12W	BX60-V
	3p4w	3Ø250			460P9W	460C9W	460R9W	460B9W	BX60-V
	3p4w	3Ø480			460P7W	460C7W	460R7W	460B7W	BX60-V
	3p4w	3Ø600			460P5W	460C5W	460R5W	460B5W	BX60-V
	4p5w	3ØY120/208			560P9W	560C9W	560R9W	560B9W	BX60-V
	4p5w	3ØY277/480			560P7W	560C7W	560R7W	560B7W	BX60-V
	4p5w	3ØY347/600			560P5W	560C5W	560R5W	560B5W	BX60-V
100	2p3w	125			3100P4W	3100C4W	3100R4W	3100B4W	BX100-V
	2p3w	250			3100P6W	3100C6W	3100R6W	3100B6W	BX100-V
	2p3w	480			3100P7W	3100C7W	3100R7W	3100B7W	BX100-V
	3p4w	125/250			4100P12W	4100C12W	4100R12W	4100B12W	BX100-V
	3p4w	3Ø250			4100P9W	4100C9W	4100R9W	4100B9W	BX100-V
	3p4w	3Ø480			4100P7W	4100C7W	4100R7W	4100B7W	BX100-V
	3p4w	3Ø600			4100P5W	4100C5W	4100R5W	4100B5W	BX100-V
	4p5w	3ØY120/208			5100P9W	5100C9W	5100R9W	5100B9W	BX100-V
	4p5w	3ØY277/480			5100P7W	5100C7W	5100R7W	5100B7W	BX100-V
	4p5w	3ØY347/600			5100P5W	5100C5W	5100R5W	5100B5W	BX100-V

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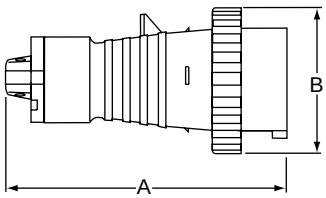
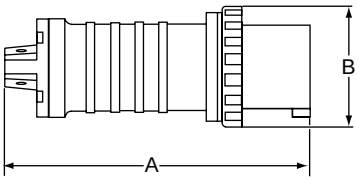


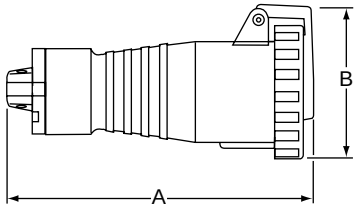
20A, 30A PLUG



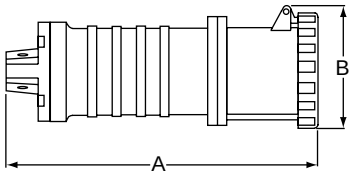
60A, 100A PLUG

Plug Dimensions

CATALOG NO.	AMPS	UNIT	A	B	CORD GRIP RANGE
320P	20	inch	5.83	2.80	.350 –.860
		mm	148	71	9 – 22
420P	20	inch	6.46	3.11	.350 –.860
		mm	164	79	9 – 22
520P	20	inch	6.61	3.43	.437 –1.187
		mm	168	87	11 – 30
330P	30	inch	6.85	3.70	.437 –1.187
		mm	174	94	11 – 30
430P	30	inch	6.85	3.70	.437 –1.187
		mm	174	94	11 – 30
530P	30	inch	7.40	3.98	.437 –1.450
		mm	188	101	11 – 37
360P	60	inch	10.83	4.49	.670 –1.625
		mm	275	114	17 – 41
460P	60	inch	10.83	4.49	.670 –1.625
		mm	275	114	17 – 41
560P	60	inch	10.83	4.49	.670 –1.625
		mm	275	114	17 – 41
3100P	100	inch	12.3	5	.950 –1.875
		mm	312	127	24 – 48
4100P	100	inch	12.3	5	.950 –1.875
		mm	312	127	24 – 48
5100P	100	inch	12.3	5	.950 –1.875
		mm	312	127	24 – 48



20A, 30A CONNECTOR



60A, 100A CONNECTOR

Connector Dimensions

CATALOG NO.	AMPS	UNIT	A	B	CORD GRIP RANGE
320C	20	inch	6.73	3.19	.350 –.860
		mm	171	81	9 – 22
420C	20	inch	7.36	3.46	.350 – .860
		mm	187	88	9 – 22
520C	20	inch	7.95	3.82	.437 –1.187
		mm	202	97	11 – 30
330C	30	inch	7.95	4.02	.437 –1.187
		mm	202	102	11 – 30
430C	30	inch	7.95	4.02	.437 –1.187
		mm	202	102	11 – 30
530C	30	inch	8.27	4.29	.437 –1.450
		mm	210	109	11 – 37
360C	60	inch	11.26	4.41	.670 –1.625
		mm	286	112	17 – 41
460C	60	inch	11.26	4.41	.670 –1.625
		mm	286	112	17 – 41
560C	60	inch	11.26	4.41	.670 –1.625
		mm	286	112	17 – 41
3100C	100	inch	12.8	4.84	.950 –1.875
		mm	325	123	24 – 48
4100C	100	inch	12.8	4.84	.950 – 1.875
		mm	325	123	24 – 48
5100C	100	inch	12.8	4.84	.950 –1.875
		mm	325	123	24 – 48

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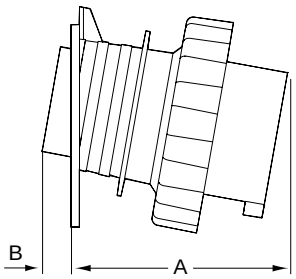
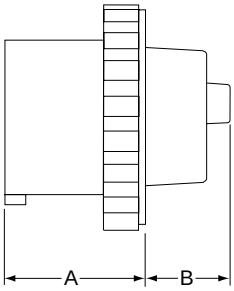
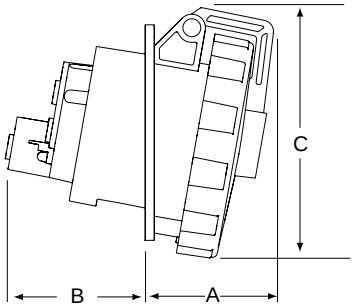


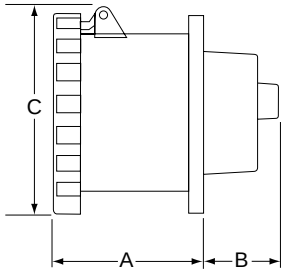
20A, 30A INLET



60A, 100A INLET



20A, 30A RECEPTACLE



60A, 100A RECEPTACLE

Inlet Dimensions

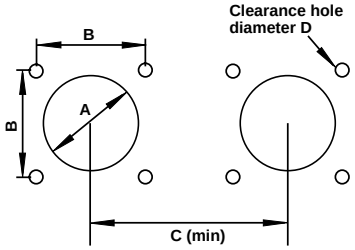
CATALOG NO.	AMPS	UNIT	A	B
320B	20	inch	1.85	0.39
		mm	47	10
420B	20	inch	2.09	0.39
		mm	53	10
520B	20	inch	2.32	0.39
		mm	59	10
330B	30	inch	2.36	0.47
		mm	60	12
430B	30	inch	2.36	0.47
		mm	60	12
530B	30	inch	2.64	.47
		mm	67	12
360B	60	inch	3.15	1.97
		mm	80	50
460B	60	inch	3.15	1.97
		mm	80	50
560B	60	inch	3.15	1.97
		mm	80	50
3100B	100	inch	3.50	2.21
		mm	89	56
4100B	100	inch	3.50	2.21
		mm	89	56
5100B	100	inch	3.50	2.21
		mm	89	56

Receptacle Dimensions

CATALOG NO.	AMPS	UNIT	A	B	C
320R	20	inch	1.77	2.24	3.74
		mm	45	57	95
420R	20	inch	1.77	2.24	3.74
		mm	45	57	95
520R	20	inch	1.85	2.24	3.90
		mm	47	57	99
330R	30	inch	2.20	2.40	4.10
		mm	56	61	104
430R	30	inch	2.20	2.40	4.10
		mm	56	61	104
530R	30	inch	2.20	2.44	4.37
		mm	56	62	111
360R	60	inch	3.50	1.89	4.37
		mm	89	48	111
460R	60	inch	3.50	1.89	4.37
		mm	89	48	111
560R	60	inch	3.50	1.89	4.37
		mm	89	48	111
3100R	100	inch	3.94	2.28	4.80
		mm	100	58	122
4100R	100	inch	3.94	2.28	4.80
		mm	100	58	122
5100R	100	inch	3.94	2.28	4.80
		mm	100	58	122

Drilling Plan

Inlets & Receptacles



DEVICE SIZE		A inches	A mm	B inches	B mm	C (min) inches	C (min) mm	D inches	D mm
20A; 3-wire:	Receptacle	3.26	83	3.12	79.5	3.94	100	0.185	4.7
	Inlet	3.26	83	3.12	79.5	3.94	100	0.185	4.7
20A; 4-wire:	Receptacle	3.26	83	3.12	79.5	4.33	110	0.185	4.7
	Inlet	3.26	83	3.12	79.5	4.33	110	0.185	4.7
20A;5-wire:	Receptacle	3.26	83	3.12	79.5	4.92	125	0.236	6.0
	Inlet	3.26	83	3.12	79.5	4.92	125	0.185	4.7
30A;3-wire:	Receptacle	3.26	83	3.12	79.5	5.12	130	0.236	6.0
	Inlet	3.26	83	3.12	79.5	5.12	130	0.185	4.7
30A;4-wire:	Receptacle	3.26	83	3.12	79.5	5.12	130	0.236	6.0
	Inlet	3.26	83	3.12	79.5	5.12	130	0.185	4.7
30A;5-wire:	Receptacle	3.26	83	3.12	79.5	5.71	145	0.236	6.0
	Inlet	3.26	83	3.12	79.5	5.71	145	0.185	4.7
60A	All	2.76	70	2.40	61	6.69	170	0.224	5.7
100A	All	3.47	88	2.80	71	7.87	200	0.280	7.1

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Weitere Typen auf Anfrage.
Änderungen vorbehalten.
Abmessungen in mm.

Further items on request.
Dimensions mm. Subject to change without notice.

Created 13.05.2004
L1000