

PXSS2K Connector: Flame Proof Compound Barrier Type Cable Connector

Unarmored Tray Cable.

Applications

- Flame Proof Class I Division 2 Cable Connector suitable for Tray, Unarmored and Shipboard cables.

Features

- Connector provides an environmental seal on the cable jacket and an explosion proof compound barrier seal around the cable inner cores.
- The connector is UL listed for NPT or Metric entry threads and is manufactured in Brass.
- Continuous operating temperature -60°C to +100°C.


Materials:

- *Connector:* Brass construction (other materials available - consult factory). Finish is Brass with nickel plated brass threaded entry as standard.
- *Seal:* Solo LSF/Epoxy putty
- *Cable type:* Unarmored, Tray and Shipboard cable. Sealing technique - Displacement seal concept. Sealing area(s) - Inner compound barrier and outer sheath.

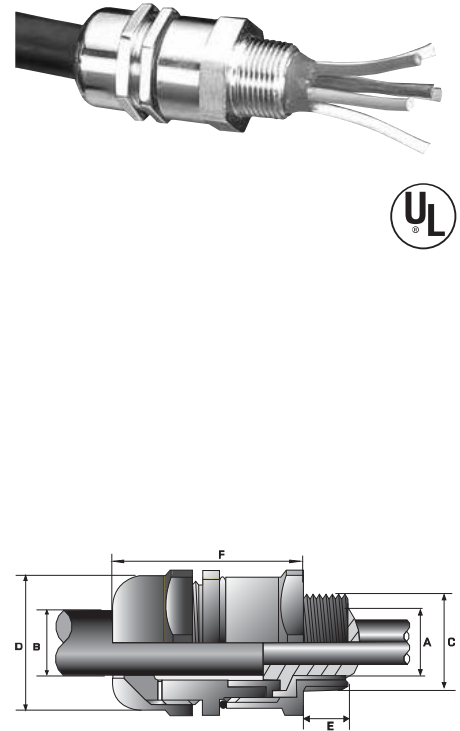
Optional Accessories:

- Locknut, earth tag, entry thread seal, serrated washer (I-38). Adaptors and reducers (I-35 thru I-37).
- Brass full nickel plate add suffix -5.
- Brass nickel plated entry only, add suffix -7.
- 316 Stainless steel add suffix -4.

Compliances/Approvals:

- Code of protection category: ATEX  II 2 GD Ex d IIC & Ex e II, Ex nR II, Ex tD A21 IP66, Equipment Zone I, Zone 2, Zone 21 and Zone 22 – Gas Groups IIA, IIB, IIC
- Compliance Standards: Class I, Div. 2, Groups ABCD, Class II, Div. 2, Groups FG, Class I, Zone 1, AEx d IIC, AEx e II
- Ingress Protection: IP66, IP67 & IP68 (to a depth of 10M), NEMA 4X

Note: CENELEC Zone I Certified version also available. Consult factory.



Ordering Information

| Cable Connector Size | Available Entry Threads 'C' | | | Minimum Thread Length 'E' | | Dia. Over Conductors 'A' | No. of Cores | Overall Cable Diameter 'B' | | Across Flats 'D' | Across Corners 'D' | Nominal Protrusion Length 'F' | NPT Catalog Number | PVC Shroud Reference | Cable Connector Wt (Ozs) |
|----------------------|-----------------------------|--------|--------|---------------------------|--------|--------------------------|--------------|----------------------------|-------|------------------|--------------------|-------------------------------|--------------------|----------------------|--------------------------|
| | Standard | Option | | NPT | Metric | | | Min | Max | | | | | | |
| | NPT | NPT | Metric | NPT | Metric | Max | Max | | | | | | | | |
| 20S/16 | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.122 | 0.343 | 0.945 | 1.047 | 2.303 | 20S16PXSS2K731 | PVC04 | 5.68 |
| 20S | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.240 | 0.470 | 0.945 | 1.047 | 2.303 | 20SPXSS2K1RA731 | PVC04 | 5.68 |
| 20 | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.260 | 0.530 | 1.201 | 1.311 | 2.382 | 20PXSS2K1RA731 | PVC05 | 7.09 |
| 20L | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.390 | 0.630 | 1.201 | 1.311 | 2.382 | 20LPXSS2K1RA731 | PVC05 | 7.09 |
| 25 | 3/4" | 1" | M25 | 0.669 | 0.591 | 0.689 | 29 | 0.440 | 0.780 | 1.476 | 1.594 | 2.657 | 25PXSS2K1RA732 | PVC09 | 11.44 |
| 32 | 1" | 1-1/4" | M32 | 0.787 | 0.591 | 0.929 | 51 | 0.670 | 1.030 | 1.811 | 2.008 | 2.736 | 32PXSS2K1RA733 | PVC10 | 15.75 |
| 32L | 1" | 1-1/4" | M32 | 0.787 | 0.591 | 0.929 | 51 | 0.790 | 1.079 | 1.811 | 2.008 | 2.736 | 32LPXSS2K1RA733 | PVC10 | 15.75 |
| 40 | 1-1/4" | 1-1/2" | M40 | 0.787 | 0.591 | 1.181 | 80 | 0.870 | 1.260 | 2.165 | 2.402 | 3.071 | 40PXSS2K1RA734 | PVC13 | 17.03 |
| 50S | 1-1/2" | 2" | M50 | 0.787 | 0.591 | 1.441 | 122 | 1.160 | 1.500 | 2.362 | 2.618 | 2.972 | 50SPXSS2K1RA735 | PVC14 | 17.17 |
| 50 | 2" | 2-1/2" | M50 | 0.906 | 0.591 | 1.614 | 149 | 1.400 | 1.730 | 2.756 | 3.094 | 3.169 | 50PXSS2K1RA736 | PVC17 | 17.59 |
| 63S | 2" | 2-1/2" | M63 | 0.906 | 0.591 | 1.886 | 205 | 1.580 | 1.960 | 2.953 | 3.276 | 3.602 | 63SPXSS2K1RA736 | PVC20 | 20.00 |
| 63 | 2-1/2" | 3" | M63 | 0.984 | 0.591 | 2.114 | 259 | 1.860 | 2.200 | 3.150 | 3.504 | 3.622 | 63PXSS2K1RA737 | PVC22 | 20.71 |
| 75S | 2-1/2" | 3" | M75 | 0.984 | 0.591 | 2.354 | 320 | 2.080 | 2.440 | 3.504 | 4.000 | 3.898 | 75SPXSS2K1RA737 | PVC24 | 32.63 |
| 75 | 3" | 3-1/2" | M75 | 1.417 | 0.591 | 2.531 | 364 | 2.330 | 2.670 | 3.898 | 4.374 | 4.016 | 75PXSS2K1RA738 | PVC26 | 36.89 |
| 90 | 3-1/2" | 4" | M90 | 1.417 | 0.591 | 2.965 | 500 | 2.620 | 3.120 | 4.488 | 5.063 | 4.724 | 90PXSS2K1RA739 | PVC31 | 76.61 |

All dimensions in inches.

Increased metric thread engagement is required for gas groups A and B. Please specify gas group, thread form and size when ordering.

Substitutions:

Full nickel plated brass - replace RA7 with RA5.

316L stainless steel - replace RA7 with RA4.

Protex 2000 (PXB2KX) Connector: Flame Proof Compound Barrier Type Cable Connector

Armored (non-jacketed) Cables.

Applications

- Flame proof Class I Division 2 Cable Connector for wire braid armor cables.

Features

- Connector provides mechanical retention and electrical continuity via a disconnectable armor termination.
- The connector is UL listed for supply with either NPT or Metric entry threads.
- The connector provides an flame proof compound seal around the cable inner core and has an internal sealing ring to prevent ingress of dust and moisture.

Materials:

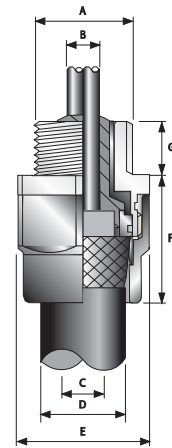
- *Connector:* Brass construction (other materials available - consult factory). Finish is Brass with nickel plated brass threaded entry as standard.
- *Compound material:* Epoxy putty.
- *Cable type:* Braid armor (non-jacketed). Armor termination - Disconnectable armor cone and ring. Sealing area(s) - Compound barrier to inner cable cores.

Optional Accessories:

- Earth tag, entry thread seal, serrated washer (I-38). Adaptors and reducers (I-35 thru I-37).
- Brass full nickel plate add suffix -5.
- Brass nickel plated entry only, add suffix -7.
- 316 Stainless steel add suffix -4.

Compliances/Approvals:

- cUL Listed - E201187
- UL 2225, UL 886 and UL 514B
- Class I, Div. 2, Groups A, B, C & D
- Class II, Div. 1, Groups F & G
- Class III, Div. 1 & 2
- Ingress Protection: NEMA 4, Oil Resistant II
- ATEX Approval: SIRA 01ATEX1285X
- Marine Approvals: LLOYDS, DNV, ABS



Ordering Information

| Gland Size | Entry Thread 'A' | | Max. Diameter | | Across Corners 'E' | Assembled Length 'F' | NPT Catalog Number | Metric Catalog Number | Cable Gland Weight (Ozs) | | |
|------------|------------------|-------------------|-----------------|----------------|--------------------|----------------------|--------------------|-----------------------|--------------------------|----------------|-------|
| | NPT Trade Size | METRIC Length "G" | Under Armor 'C' | Over Armor 'D' | | | | | | | |
| 20/16 | 1/2" | 0.642 | M20 | 0.591 | 0.496 | 0.516 | 1.311 | 1.370 | 2016PXB2KX1R731 | 2016PXB2KX1RA7 | 1.90 |
| 20s | 1/2" | 0.642 | M20 | 0.591 | 0.496 | 0.574 | 1.311 | 1.370 | 20SPXB2KX1RA731 | 20SPXB2KX1RA7 | 1.90 |
| 20 | 1/2" | 0.642 | M20 | 0.591 | 0.547 | 0.736 | 1.311 | 1.299 | 20PXB2KX1RA731 | 20PXB2KX1RA7 | 2.08 |
| 25 | 3/4" | 0.654 | M25 | 0.591 | 0.783 | 1.003 | 1.594 | 1.421 | 25PXB2KX1RA732 | 25PXB2KX1RA7 | 3.95 |
| 32 | 1" | 0.815 | M32 | 0.591 | 1.031 | 1.236 | 2.007 | 1.641 | 32PXB2KX1RA733 | 32PXB2KX1RA7 | 4.51 |
| 40 | 1-1/4" | 0.839 | M40 | 0.591 | 1.264 | 1.567 | 2.402 | 1.708 | 40PXB2KX1RA734 | 40PXB2KX1RA7 | 5.93 |
| 50s | 1-1/2" | 0.854 | M50 | 0.591 | 1.499 | 1.858 | 2.618 | 1.767 | 50SPXB2KX1RA735 | 50SPXB2KX1RA7 | 7.90 |
| 50 | 2" | 0.886 | M50 | 0.591 | 1.732 | 2.091 | 3.059 | 1.902 | 50PXB2KX1RA736 | 50PXB2KX1RA7 | 8.15 |
| 63s | 2" | 0.886 | M63 | 0.591 | 1.964 | 2.315 | 2.272 | 1.992 | 63SPXB2KX1RA736 | 63SPXB2KX1RA7 | 12.69 |
| 63 | 2-1/2" | 1.323 | M63 | 0.591 | 2.201 | 2.527 | 3.492 | 1.713 | 63PXB2KX1RA737 | 63PXB2KX1RA7 | 12.14 |
| 75s | 2-1/2" | 1.323 | M75 | 0.591 | 2.437 | 2.815 | 3.929 | 2.338 | 75SPXB2KX1RA737 | 75SPXB2KX1RA7 | 16.44 |
| 75 | 3" | 1.390 | M75 | 0.591 | 2.673 | 3.067 | 4.362 | 2.413 | 75PXB2KX1RA738 | 75PXB2KX1RA7 | 13.93 |
| 90 | 3" | 1.390 | M90 | 0.787 | 3.122 | 3.499 | 5.019 | 2.531 | 90PXB2KX1RA738 | 90PXB2KX1RA7 | 47.48 |

All dimensions in inches.
Increased metric thread engagement is required for gas groups A and B. Please specify gas group, thread form and size when ordering.

Substitutions:
Full nickel plated brass - replace RA7 with RA5.
316L stainless steel - replace RA7 with RA4.

Protex 2000 (PX2KX) Connector: Explosion proof Compound Barrier Type Cable Connector

Armored and Jacketed Cables.

Applications

• Explosion Proof Class I Division 1 Brass cable connector suitable for wire Braid Armor & Jacketed cables.

Features

- Connector provides an environmental seal on the cable outer jacket and an explosion proof compound barrier seal around the cable inner cores.
- Connector provides mechanical cable retention and electrical continuity via armor termination.
- The connector is UL listed for NPT and Metric threads.
- PX2KX forms part of a comprehensive connector range for marine shipboard and IEE45 armored & jacketed cables.

Materials:

- **Connector:** Brass construction. Finish is Brass with nickel plated brass threaded entry as standard.
- **Seal:** Solo LSF/Epoxy putty
- **Cable type:** Braid armor & jacketed. Armor termination - Disconnectable armor cone and ring. Sealing area(s) - Displacement seal concept.

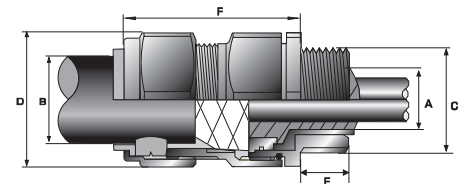
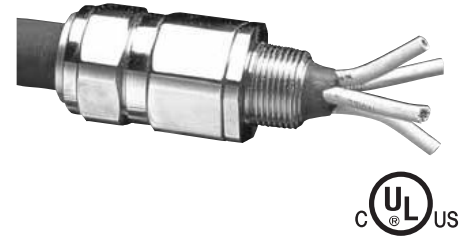
Optional Accessories:

- Locknut, earth tag, entry thread seal, serrated washer (I-38). Adaptors and reducers (I-35 thru I-37).
- Brass full nickel plate add suffix -5.
- Brass nickel plated entry only, add suffix -7.
- 316 Stainless steel add suffix -4.

Compliances/Approvals:

- cUL Listed - E161256
- UL 2225, UL 886 and UL 514B
- Class I, Groups A, B, C & D
- Class II, Groups E, F & G
- Class III
- Class I, Zone 1, AEx d IIC
- Ingress Protection: NEMA 4X, Oil Resistant II
- Third Party Approvals: IP66, IP67 & IP68 (to a depth of 10M)
- Shell / ERA deluge test DTS 01:1991 (after 20 years simulated accelerated ageing)
- ATEX Approval: SIRA 01ATEX1285X
- Marine Approvals - LLOYDS, DNV, ABS

o CENELEC Zone I Certified version also available. Consult factory.



Ordering Information

| Cable Connector Size | Available Entry Threads 'C' | | Minimum Thread Length 'E' | Dia. Over Conductors 'A' | No. of Cores | Overall cable Diameter 'B' | | Armour Range † | | Across Flats 'D' | Across Corners 'D' | Nominal Protrusion Length 'F' | NPT Catalog Number | Metric Catalog Number | PVC Shroud Reference | Cable Connector Wt. (Ozs) | | |
|----------------------|-----------------------------|--------|---------------------------|--------------------------|--------------|----------------------------|--------|----------------|-------|------------------|--------------------|-------------------------------|--------------------|-----------------------|----------------------|---------------------------|-------|--------|
| | Standard | Option | | | | NPT | Metric | Max | Min | Max | Max | | | | | | Max | |
| 20S/16 | 1/2" | 3/4" | M20 | 0.63 | 0.591 | 0.496 | 15 | 0.240 | 0.453 | 0 | 0.039 | 0.945 | 1.047 | 2.303 | 20S16PX2KX1RA731 | 20S16PX2KX1RA7 | PVC04 | 7.06 |
| 20S | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.374 | 0.626 | 0 | 0.039 | 0.945 | 1.047 | 2.303 | 20SPX2KX1RA731 | 20SPX2KX1RA7 | PVC04 | 7.06 |
| 20 | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.496 | 15 | 0.492 | 0.823 | 0 | 0.039 | 1.201 | 1.311 | 2.382 | 20PX2KX1RA731 | 20PX2KX1RA7 | PVC06 | 8.11 |
| 25S | 3/4" | 1" | M25 | 0.669 | 0.591 | 0.689 | 29 | 0.551 | 0.866 | 0 | 0.039 | 1.476 | 1.594 | 2.657 | 25SPX2KX1RA732 | 25SPX2KX1RA7 | PVC09 | 11.64 |
| 25 | 3/4" | 1" | M25 | 0.669 | 0.591 | 0.689 | 29 | 0.717 | 1.031 | 0 | 0.039 | 1.476 | 1.594 | 2.657 | 25PX2KX1RA732 | 25PX2KX1RA7 | PVC09 | 11.64 |
| 32 | 1" | 1-1/4" | M32 | 0.787 | 0.591 | 0.929 | 51 | 0.933 | 1.335 | 0 | 0.039 | 1.811 | 2.008 | 2.736 | 32PX2KX1RA733 | 32PX2KX1RA7 | PVC11 | 17.99 |
| 40 | 1-1/4" | 1-1/2" | M40 | 0.787 | 0.591 | 1.181 | 80 | 1.098 | 1.591 | 0 | 0.039 | 2.165 | 2.402 | 3.071 | 40PX2KX1RA734 | 40PX2KX1RA7 | PVC15 | 25.40 |
| 50S | 1-1/2" | 2" | M50 | 0.787 | 0.591 | 1.441 | 122 | 1.386 | 1.839 | 0 | 0.039 | 2.362 | 2.618 | 2.972 | 50SPX2KX1RA735 | 50SPX2KX1RA7 | PVC18 | 29.10 |
| 50 | 2" | 2-1/2" | M50 | 0.906 | 0.591 | 1.614 | 149 | 1.591 | 2.091 | 0 | 0.039 | 2.756 | 3.094 | 3.169 | 50PX2KX1RA736 | 50PX2KX1RA7 | PVC21 | 30.34 |
| 63S | 2" | 2-1/2" | M63 | 0.906 | 0.591 | 1.886 | 205 | 1.795 | 2.339 | 0 | 0.039 | 2.953 | 3.276 | 3.602 | 63SPX2KX1RA736 | 63SPX2KX1RA7 | PVC23 | 51.15 |
| 63 | 2-1/2" | 3" | M63 | 0.984 | 0.591 | 2.114 | 259 | 2.150 | 2.594 | 0 | 0.039 | 3.150 | 3.504 | 3.622 | 63PX2KX1RA737 | 63PX2KX1RA7 | PVC25 | 56.44 |
| 75S | 2-1/2" | 3" | M75 | 0.984 | 0.591 | 2.354 | 320 | 2.323 | 2.839 | 0 | 0.039 | 3.504 | 4.000 | 3.898 | 75SPX2KX1RA7387 | 75SPX2KX1RA7 | PVC28 | 81.13 |
| 75 | 3" | 3-1/2" | M75 | 1.417 | 0.591 | 2.531 | 364 | 2.626 | 3.091 | 0 | 0.039 | 3.898 | 4.374 | 4.016 | 75PX2KX1RA738 | 75PX2KX1RA7 | PVC30 | 107.59 |
| 90 | 3-1/2" | 4" | M90 | 1.417 | 0.591 | 2.965 | 500 | 3.000 | 3.559 | 0 | 0.063 | 4.488 | 5.063 | 4.724 | 90PX2KX1RA739 | 90PX2KX1RA7 | PVC32 | 176.37 |

All dimensions in inches.

Substitutions:

Full nickel plated brass - replace RA7 with RA5.

316L stainless steel - replace RA7 with RA4.

C2KX Marine Cable Connector

Braid Armor and Jacketed Cables.

Applications

• Cable Connector for wire braid armor & jacketed cables is suitable for ordinary and wet locations and provides mechanical retention and electrical continuity via a disconnectable armor termination.

Features

• Connector provides an environmental seal on the cable outer jacket and is UL listed for NPT or Metric entry threads.
 • The C2KX forms part of a comprehensive range of deluge proof connectors for marine shipboard and IEE45 armor jacketed cables. Permitted for use in Division 2 areas on equipment without internal source of ignition (i.e. no arcing or sparking devices).

Materials:

• **Connector:** Brass. Finish is Brass with nickel plated brass threaded entry as standard.
 • **Seal:** Solo LSF.
 • **Cable type:** Braid armor & jacketed. Armor termination - Disconnectable armor cone and ring. Sealing technique - Displacement seal concept. Sealing area - Outer sheath.

Optional Accessories:

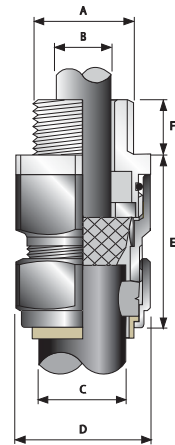
- Earth tag, entry thread seal, serrated washer (I-38). Adaptors and reducers (I-35 thru I-37).
- Brass full nickel plate add suffix **-5**.
- Brass nickel plated entry only, add suffix **-7**.
- 316 Stainless steel add suffix **-4**.

Compliances/Approvals:

- UL Listed - E200163
- UL 514B
- Class I, Div 2*, Groups A,B,C,D
- Class I, Zone 1, AEx e II
- Class I, Zone 2, AEx e II
- Ordinary and wet locations
- Ingress Protection: NEMA 4, Oil Resistant II
- Third Party Approvals: IP66, IP67 & IP68 (to a depth of 10M)
- Shell / ERA deluge test DTS 01:1991 (after 20 years simulated accelerated ageing)
- Marine approval: LLOYDS, ABS

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o CENELEC Zone I Certified version also available. Consult factory.



Ordering Information

| Cable Connector Size | Available Entry Threads 'C' | | Minimum Thread Length 'E' | | Cable Bedding Dia. 'A' | Overall Cable Diameter 'B' | | Armour Range † | | Across Flats 'D' | Across Corners 'D' | Nominal Protrusion Length 'F' | NPT Catalog Number | Metric Catalog Number | PVC Shroud Reference | Cable Connector Wt. (Ozs) | |
|----------------------|-----------------------------|--------|---------------------------|--------|------------------------|----------------------------|-------|----------------|-----|------------------|--------------------|-------------------------------|--------------------|-----------------------|----------------------|---------------------------|--------|
| | Standard | Option | NPT | Metric | | Min | Max | Min | Max | | | | | | | | |
| 20S/16 | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.461 | 0.240 | 0.453 | 0 | 0.039 | 0.945 | 1.047 | 2.303 | 20S16C2KX1RA731 | 20S16C2KX1RA7 | PVC04 | 4.65 |
| 20S | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.461 | 0.374 | 0.626 | 0 | 0.039 | 0.945 | 1.047 | 2.303 | 20SC2KX1RA731 | 20SC2KX1RA7 | PVC04 | 4.65 |
| 20 | 1/2" | 3/4" | M20 | 0.630 | 0.591 | 0.551 | 0.492 | 0.823 | 0 | 0.039 | 1.201 | 1.311 | 2.382 | 20C2KX1RA731 | 20C2KX1RA7 | PVC06 | 6.84 |
| 25S | 3/4" | 1" | M25 | 0.669 | 0.591 | 0.787 | 0.551 | 0.866 | 0 | 0.039 | 1.476 | 1.594 | 2.657 | 25C2KX1RA732 | 25C2KX1RA7 | PVC09 | 10.78 |
| 25 | 3/4" | 1" | M25 | 0.669 | 0.591 | 0.787 | 0.717 | 1.031 | 0 | 0.039 | 1.476 | 1.594 | 2.657 | 25C2KX1RA732 | 25C2KX1RA7 | PVC09 | 10.78 |
| 32 | 1" | 1-1/4" | M32 | 0.787 | 0.591 | 1.035 | 0.933 | 1.335 | 0 | 0.039 | 1.811 | 2.008 | 2.736 | 32C2KX1RA733 | 32C2KX1RA7 | PVC11 | 16.49 |
| 40 | 1-1/4" | 1-1/2" | M40 | 0.787 | 0.591 | 1.268 | 1.098 | 1.591 | 0 | 0.039 | 2.165 | 2.402 | 3.071 | 40C2KX1RA734 | 40C2KX1RA7 | PVC15 | 23.89 |
| 50S | 1-1/2" | 2" | M50 | 0.787 | 0.591 | 1.504 | 1.386 | 1.839 | 0 | 0.039 | 2.362 | 2.618 | 2.972 | 50SC2KX1RA735 | 50SC2KX1RA7 | PVC18 | 26.43 |
| 50 | 2" | 2-1/2" | M50 | 0.906 | 0.591 | 1.736 | 1.591 | 2.091 | 0 | 0.039 | 2.756 | 3.094 | 3.169 | 50SC2KX1RA736 | 50C2KX1RA7 | PVC21 | 36.79 |
| 63S | 2" | 2-1/2" | M63 | 0.906 | 0.591 | 1.969 | 1.795 | 2.339 | 0 | 0.039 | 2.953 | 3.276 | 3.602 | 63SC2KX1RA736 | 63SC2KX1RA7 | PVC23 | 37.85 |
| 63 | 2-1/2" | 3" | M63 | 0.984 | 0.591 | 2.205 | 2.150 | 2.594 | 0 | 0.039 | 3.150 | 3.504 | 3.622 | 63C2KX1RA737 | 63C2KX1RA7 | PVC25 | 45.11 |
| 75S | 2-1/2" | 3" | M75 | 0.984 | 0.591 | 2.441 | 2.323 | 2.839 | 0 | 0.039 | 3.504 | 4.00 | 3.898 | 75SC2KX1RA737 | 75SC2KX1RA7 | PVC28 | 65.55 |
| 75 | 3" | 3-1/2" | M75 | 1.417 | 0.591 | 2.677 | 2.626 | 3.091 | 0 | 0.039 | 3.898 | 4.374 | 4.016 | 75C2KX1RA738 | 75C2KX1RA7 | PVC30 | 89.87 |
| 90 | 3-1/2" | 4" | M90 | 1.417 | 0.591 | 3.15 | 3.000 | 3.559 | 0 | 0.063 | 4.488 | 5.063 | 4.724 | 90C2KX1RA739 | 90C2KX1RA7 | PVC32 | 128.63 |

All dimensions in inches.

Substitutions:

Full nickel plated brass - replace **RA7** with **RA5**.

316L stainless steel - replace **RA7** with **RA4**.