

VORTEX

CONNECTOR SERIES

High Pressure, High Temperature Connector Solutions



FEATURES

- ▶ **Single-pin connector**
 - ▶ Inconel body and contact
 - ▶ Glass-to-metal sealing system
 - ▶ Fluorocarbon (FKM) O-ring and thermoplastic (PEEK) back-up ring
 - ▶ Gold/nickel plated contact
- ▶ **Single-pin boot kit**
 - ▶ PTFE sleeve for additional insulation and collapse protection
 - ▶ Fluorocarbon (FKM) or Perfluoroelastomer (FFKM) boot for multiple wire insulation diameters
 - ▶ Hypertac® hyperboloid #16 socket technology
- ▶ **Mated single-pin connector and boot kit**
 - ▶ Rated to temperatures up to 200°C, pressure to 35K PSI, shock to 500 G and vibration to 10 G while mated
 - ▶ 360° of continuous contact
 - ▶ Low, stable contact resistance across temperature spectrum
 - ▶ High strength copper alloy body, gold over nickel plated

BENEFITS

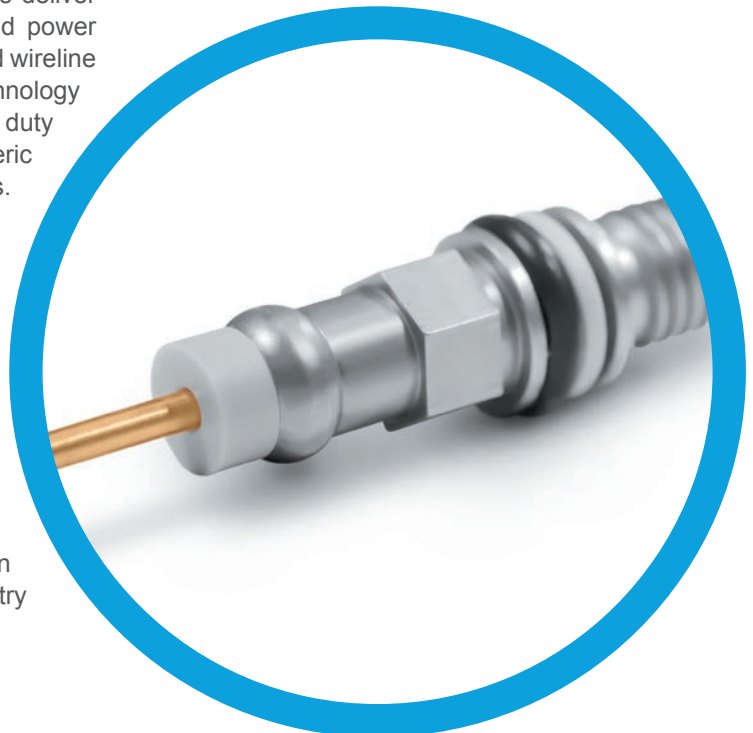
- ▶ **Superior protection of critical electronics in extreme downhole drilling and evaluation applications**
 - ▶ High quality materials enable superior pressure sealing, temperature rating and chemical resistance
 - ▶ Resistant to bending and extrusion
 - ▶ Hex/thread design for an increased retention mechanism
- ▶ **Longer battery life**
 - ▶ Reduced heat build-up
 - ▶ Increased system MTBF / MTBM
- ▶ **Impeccable signal integrity**
 - ▶ Continuous pin and socket contact offers superior signal clarity
 - ▶ Higher data resolution ensures more data output per hour
- ▶ **Deeper drilling depth**
 - ▶ Pressure-tight seal offers protection against corrosive elements
 - ▶ Immune to thermal stress relaxation
- ▶ **Higher drilling speed**
 - ▶ Constant wiping action mitigates effects of axial vibration minimizing fretting corrosion and gold wear
 - ▶ Improved efficiency and productivity

VORTEX SERIES

Smiths Connectors' Vortex Series single-pin connectors and boot kits deliver the high reliability required to transmit and receive critical data and power within the Oil & Gas industry. Specifically designed for MWD, LWD and wireline applications, the Vortex Series incorporates glass-to-metal technology with premium materials including high strength metal alloys, heavy duty polymers and sealing components fabricated from high end elastomeric materials, to construct hermetically-sealed, pressure-rated connectors.

Failure of the tool electronics package is the primary cause of rig downtime resulting in reduced productivity and increased costs. The Vortex Series provides a superior solution for protecting critical electronic assets from damage. The boot kit hyperboloid socket provides continuous contact with the single-pin connector ensuring stable, minimal contact resistance addressing industry demands for superior signal integrity, longer battery life, deeper drilling depths and higher drilling speeds.

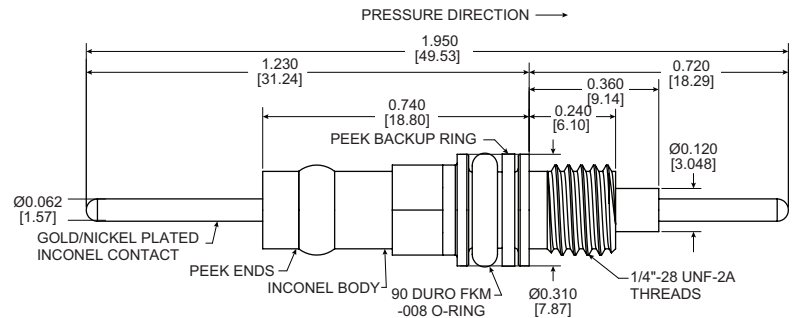
Delivering clear, uninterrupted and accurate data, the Vortex Series combats the extreme challenges customers face, enabling exploration of demanding geographies and geologies not accessible with industry standard products.



DIMENSIONS

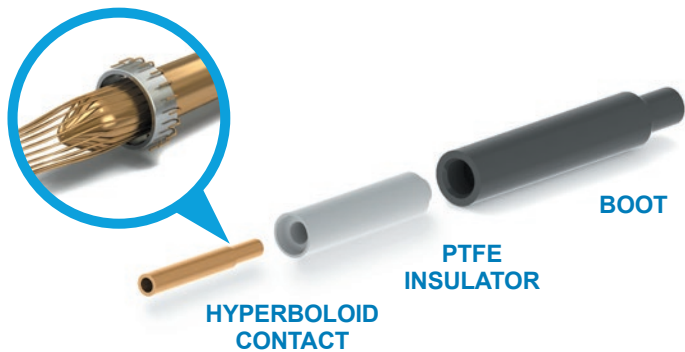
▶ SINGLE-PIN CONNECTOR

Glass-to-Metal | Part Number: 019931-2001



▶ BOOT KIT

Part Number: 079900-XXXX



1 ▶ BOOT KIT TYPE

	TYPE	TEMPERATURE RANGE
8	STANDARD	-30°C to 232°C
9	HIGH PRESSURE / TEMPERATURE	-15°C to 300°C

2 ▶ HYPERBOLOID CONTACT

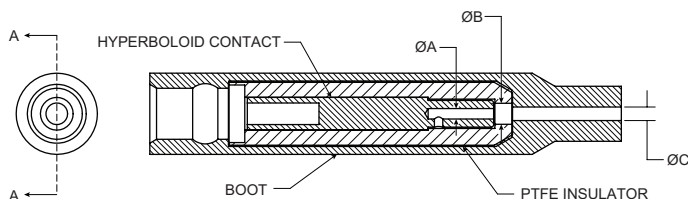
	COMPONENT P/N	WIRE SIZE	ØA
0	P-MTT-YSK0158-028-1	24 AWG	0.034 [0.86]
1	P-MTT-YSK0158-028-2	22 AWG	0.040 [1.02]
2	P-MTT-YSK0158-028-3	20 AWG	0.047 [1.19]
3	P-MTT-YSK0158-028-4	18 AWG	0.057 [1.45]

3 ▶ PTFE INSULATOR

	COMPONENT P/N	WIRE INSULATION Ø	ØB
0	101-5303-000	0.043-0.055 [1.09-1.40]	0.060 [1.52]
1	101-5303-001	0.054-0.066 [1.40-1.68]	0.071 [1.80]
2	101-5303-002	0.063-0.075 [1.60-1.90]	0.080 [2.03]
3	101-5303-003	0.072-0.084 [1.83-2.14]	0.089 [2.26]

4 ▶ BOOT

	STANDARD P/N	HPHT P/N	WIRE INSULATION Ø	ØC
0	130-0152-000	130-0148-000	0.043-0.053 [1.09-1.35]	0.033 [0.84]
1	130-0152-001	130-0148-001	0.053-0.068 [1.35-1.73]	0.041 [1.04]
2	130-0152-002	130-0148-002	0.068-0.083 [1.73-2.11]	0.052 [1.32]



Notes:
 1) Dimensions are in inches [mm]
 2) Consult factory for mounting dimensions
 3) All specifications are subject to change without notice

TECHNICAL CHARACTERISTICS

	Single-Pin Connector	Boot Kit	
Style	Glass-to-Metal	Standard	High Pressure, High Temperature
Part Number	019931-2001	079900-8XXX	079900-9XXX
Contact Size	#16 male pin	#16 female socket	#16 female socket
Termination	—	Crimp or solder	Crimp or solder

MECHANICAL & ENVIRONMENTAL

Pressure Rating	35K PSI	35K PSI	35K PSI
Temperature Range	0°C to 200°C	-30°C to 232°C	-15°C to 300°C
Hermeticity <i>(connectors only)</i>	Maximum helium leak rate of 1x10 ⁻⁸ cc/sec @ 1 atm	—	—

MATERIALS & PLATING

Body	Inconel	Fluoropolymer (PTFE) insulator	Fluoropolymer (PTFE) insulator
Contact	Inconel, gold over nickel plating	Copper alloy, gold over nickel plating	Copper alloy, gold over nickel plating
O-Ring	Fluorocarbon (FKM)	—	—
Backup Ring	Thermoplastic	—	—
Boot	—	Fluorocarbon (FKM)	Perfluoroelastomer (FFKM)
Wire Size	—	18 to 24 AWG	18 to 24 AWG
Wire Insulation	—	0.043 to 0.084 [1.09 to 2.14]	0.043 to 0.084 [1.09 to 2.14]

ELECTRICAL

Current Rating	5 Amps	5 Amps	5 Amps
Insulation Resistance	> 5,000 MΩ @ 500 VDC	> 5,000 MΩ @ 500 VDC	> 5,000 MΩ @ 500 VDC
Contact Resistance	< 30 mΩ end-to-end	< 30 mΩ end-to-end	< 30 mΩ end-to-end
Voltage Rating	500 VDC	500 VDC	500 VDC

Notes:

- 1) Dimensions are in inches [mm]
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