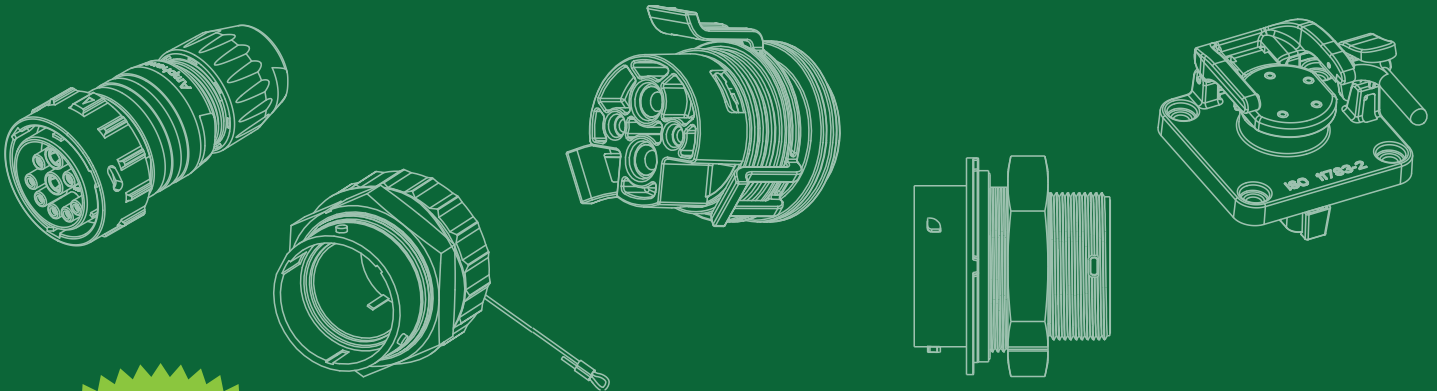




Powell Ag Solutions: White Paper

INTERCONNECT SOLUTIONS FOR PRECISION AGRICULTURE

IP69K Sealed connectors, industry accepted equivalent to all equal brands



Powell Agricultural Solutions

Powell Electronics • JRH Electronics • East Coast Microwave

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Agricultural Technology and Farming 4.0

The modern precision agricultural equipment is strongly driven by technical innovation through electrification and cross brand digitalization. Critical advancements in agricultural equipment have made it possible for farms to track crop production with great precision. Integrated equipment is used to optimize crop potential by ensuring that the correct amount of water, seed, pesticide, and fertilizer are applied to the crops electronically via GPS. This new way of farming is accomplished with the help of monitors, sensors, and cross brand computerized systems.



The future of agriculture is Smart Farming, also known as Farming 4.0: an emerging concept that refers to modern farms using technology to reduce costs, gain higher yields and minimize environmental impact.

As the implementation of Farming 4.0 spreads more widely, the utilization of IoT (Internet of Things) in agriculture will become the norm as sensors are automatically used to monitor critical parameters such as soil nutrition, temperature, moisture, and more. Key IoT systems involved include telematics, sensing technology, position monitoring, data analytics, communications, and various hardware and software aspects. And one of the keys to bringing these systems together to achieve smart, sustainable farming lies in rugged, reliable interconnect solutions



Powell Agricultural Solutions Connector Series

Powell Electronics has curated a connector solution for the market that provides the reliability, ruggedness, and performance needed for agricultural applications. Powell is a global leader in industrial interconnect products; and can design, manufacture, and supply high-performance interconnect systems for a broad range of industrial applications, including motion control and heavy equipment engineered for the agricultural space.

Initially designed for off-road vehicles, the Powell Electronics **PAS Connector Series** easily fulfills today's agricultural applications' requirements. They are available in a wide variety of hybrid insert arrangements and utilize both the standard and specialized contacts seen in other agriculture connector series.

This makes the Powell PAS Connector Series product line a cost-efficient option for a wide variety of machinery use cases.

Cavity #	Conductor Diameter	UL Spec Wires (Orange Wire Seal)		SAE Spec Wires (Blue Wire Seal)	
		Minimal Insulator Outer Diameter	Maximal Insulation Outer Diameter	Minimal Insulator Outer Diameter	Maximal Insulation Outer Diameter
1	#8	4.83 (0.190)	6.10 (0.240)	3.43 (0.135)	5.59 (0.220)
2	#12	3.40 (0.134)	4.23 (0.170)	2.46 (0.097)	4.01 (0.158)
3	#8	4.83 (0.190)	6.10 (0.240)	3.43 (0.135)	5.59 (0.220)
4	#12	3.40 (0.134)	4.23 (0.170)	3.43 (0.135)	5.59 (0.220)
5	#16	Need a terminal and sealing plug only		Need a terminal and sealing plug only	
6	#16	2.54 (0.100)	3.40 (0.134)	1.20 (0.047)	2.41 (0.095)
7	#16	2.54 (0.100)	3.40 (0.134)	1.20 (0.047)	2.41 (0.095)
8	#16	2.54 (0.100)	3.40 (0.134)	1.20 (0.047)	2.41 (0.095)
9	#16	2.54 (0.100)	3.40 (0.134)	1.20 (0.047)	2.41 (0.095)
Jacket Outer Diameter		14.0 (0.551)	18.0 (0.708)	14.0 (0.551)	18.0 (0.708)

PLASTIC SERIES

Powell Ag Solutions offers an OEM accepted, plastic connector series used in ISO 11783-2 and more, which is compatible with shell size 18 and 24 industry-standard designs, exhibits high strength and impact-resistance. These circular connectors are available in lightweight, easy to assemble and durable thermoplastic housings.



Powell Ag Solutions offers an OEM accepted, zinc-alloy metal connector series exhibiting high strength impact resistance and IP69k in mated condition. These can be used in ISO 11783-2 and more. The sizes are compatible with shell sizes 18 and 24 on industry standard designs.

METAL SERIES

Powell Ag Solutions circular connectors are:

- Environmentally sealed to IP67/IP69K protection in mated condition.
- Offers excellent protection from ingress of dust, water, fertilizer, pesticides, and mud.
- Operational in temperatures ranging from -55 °C to 125 °C, functioning well in exposed cold weather environments, and withstand the high temperatures seen in most agricultural equipment applications.
- Designed with a rapid and secure mating system that is also highly vibration resistant.

The Powell **PAS Connector Series** features high-temperature silicone to act as a barrier from hydraulic fluids, fossil fuels, and lubricating oils.

These products also have an easy grip coupling system that provides visual and tactile indicators and a three key-way bayonet design that ensures the proper mating of connectors. This design improves ease of coupling — especially in hard-to-reach locations or environments requiring protective operator equipment

For more information on how Powell Electronics is meeting the needs of the agricultural community, please contact:

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