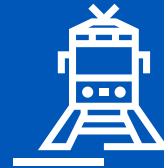


# Industry Applications.



**An overview of the most common design-ins  
& applications using our products**



**Bulgin is widely recognised as a leading manufacturer of environmentally sealed connectors & components.**

**With 100 years of experience in the industry, Bulgin continues to innovate & develop products & services to cater for its global customer base across a variety of markets.**

<b>Industrial</b>	<b>1</b>	<b>Automotive</b>	<b>31</b>
Automation	3	<b>Medical</b>	<b>35</b>
Tools & Machinery	5	<b>Renewable Energy</b>	<b>39</b>
Instrumentation & Measurement	7	<b>Data &amp; Telecoms</b>	<b>43</b>
<b>Oil &amp; Gas</b>	<b>9</b>	<b>Recreation &amp; Leisure</b>	<b>47</b>
Topside	11	Water Systems	49
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<b>Marine</b>	<b>15</b>	<b>Agriculture</b>	<b>53</b>
Above Water	17	<b>Consumer Electronics</b>	<b>57</b>
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<b>Transport &amp; Infrastructure</b>	<b>21</b>	Consumer Goods	61
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# Industrial.



Industrial environments are often exposed to many harsh elements such as water, vibration, chemicals & extreme temperatures, but with demand growing for automated processes, there is more pressure than ever before on production & motion control systems. To overcome these challenging conditions, our connectivity solutions with metal or plastic housings are used around the world to facilitate secure power, signal & data connections in the harshest of environments.

Our robust range of vandal proof push button switches are also a perfect solution for operating heavy duty tools, metal & wood processing equipment, food & beverage processing systems & packaging machinery.



# Automation.

With an increasing demand for automated machines & systems, secure & reliable connections are vital for industrial automation applications where efficiency & uptime is of the utmost importance. Our waterproof circular connectors are the perfect solution for automation systems such as factory automation, industrial networks & robotics.

From movement signals to manufacturing & material handling processes, our robust sealed connector range for power, signal & data perform excellently in harsh environments where moisture, extreme temperatures & vibration are present. With IP66, IP67, IP68 & IP69K ratings, they are particularly ideal for production lines that are prone to dust & liquid build up.

With IP66, IP67, IP68 & IP69K ratings, they are particularly ideal for production lines that are prone to dust & liquid build up.

## // Industry Applications:

- Industrial Robotics
- Pharmaceutical Manufacturing
- Automotive Manufacturing
- Food & Beverage Processing
- Material Handling Equipment
- Packaging Equipment
- Process Control Systems
- Machining & Metal Processing
- Semiconductor Manufacturing
- Factory Automation Machines



# Products Related To Industry:

## M5 / M8 / M12 / M16 / M23

Circular Automation Connectors



- A, B & D Coding Options
- IP67 protection
- Plastic & Metal Variants
- Overmolded cables PVC & PUR
- Ratings from 1A, 30V ac/dc up to 8A, 250V ac/dc

## Standard Series USB

Circular Data Connectors



- USB V2.0 performance
- IP66, IP67, IP68 & IP69K protection
- USB type 'A' or 'B' configurations
- Single & double ended cable / panel mount options

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## Standard Series

Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Photoelectric Sensor

Sensors



- Sealed to IP67
- Stainless Steel 316 shell
- Detection distance 1 - 40mm
- Light point diameter 5.0mm at 30mm
- Ambient humidity 35 - 85%

## Push-Pull Series

Circular Automation Connectors



- Multiple contacts from 2 to 30
- High packing density for space savings
- Temp: -50°C to +200°C
- Cycle: >4500
- Resistance of Vibration: 10-2000Hz, 15g

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals



# Tools & Machinery.

Industrial environments are exposed to many impeding elements such as water, vibration, chemicals & extreme temperatures. With demand growing for automated processes, there is more pressure than ever before on production & motion control systems.

To overcome these potentially detrimental conditions, our connectivity solutions with metal or plastic housings are used around the world to facilitate secure power, signal & data connections in the harshest of environments. Our robust range of vandal proof push button switches are also a perfect solution for operating heavy duty tools, metal & wood processing equipment, food & beverage processing systems & packaging machinery.

## // Industry Applications:

- Industrial Food Slicer
- Vacuum Packaging Machine
- Printed Electronics Machinery
- Heavy Industrial Food Processor
- Industrial Grade Printer
- Industrial Automated Saws
- Industrial Coating Machinery
- Industrial Sand Blaster



# Products Related To Industry:

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 900 Series



Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## Standard Ethernet



Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## 6000 Series



Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## Photoelectric Sensor



Sensors



- Sealed to IP67
- Stainless Steel 316 shell
- Detection distance 1 - 40mm
- Light point diameter 5.0mm at 30mm
- Ambient humidity 35 - 85%

## M16 Series



Circular Automation Connectors



- A-Coding
- Max Rating 7A, 250V ac/dc
- IP67 protection
- 3, 4, 5, 6, 8 & 12 contacts
- Metal shells with good shielding

## M23 Series



Circular Automation Connectors



- A-Coding
- Max Rating 8A, 200V ac/dc
- IP67 protection
- 12 & 19 contacts
- Straight & angled options

## Vandal Resistant



Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

# Instrumentation & Measurement.

Instrumentation & measurement systems are vital for ensuring productivity, reliability, safety & continuity in the industrial sector. Accurate & consistent measurements allow for process control & automated manufacturing systems to be optimised for maximum efficiency. Reliable electronic components are essential for achieving this.

That's where we come in. From control interfaces to power & data connections, Bulgin has a diverse choice of electronic solutions ideal for systems that measure a variety of parameters including pressure, moisture, flow, temperature & vibration.

## // Industry Applications:

- Handheld Moisture Detectors
- Wireless Data Logger
- Flow Meters & Industrial Scales
- Solar Water Pump Controller
- Terrain Monitoring
- Handheld Radiation Detection
- Pipe Inspection System
- Pressure Transmitter
- Wireless Load Sensors
- Moisture Meters



# Products Related To Industry:

## Standard Series

Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Photoelectric Sensor

Sensors



- Sealed to IP67
- Stainless Steel 316 shell
- Detection distance 1 - 40mm
- Light point diameter 5.0mm at 30mm
- Ambient humidity 35 - 85%

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## Push-Pull Series

Circular Automation Connectors



- Multiple contacts from 2 to 30
- High packing density for space savings
- Temp: -50°C to +200°C
- Cycle: >4500
- Resistance of Vibration: 10-2000Hz, 15g

## Vandal Resistant

Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## USB C-Type

Circular Data Connectors



- USB3.2 supported
- Data rates up to 20 Gbps
- IP66, IP68 & IP69K rated
- Plug & play capability
- Secure, proven locking system

## M12 Series

Circular Automation Connectors



- A, B & D Coding
- Max rating 4A, 250V ac/dc
- IP67 protection
- 3, 4, 5, 8 & 12 contacts
- PUR & PVC cable options

## 400 Series SMB

Circular Data Connectors



- 50Ω impedance SMB antenna
- Frequency range 0 - 4GHz
- IP66, IP67, IP68 & IP69K protection
- Rewireable & pre-wired options
- RG-174 cables

# Oil & Gas.



With demand for the world's natural resources increasing, so too are the challenges facing the Oil & Gas industry. Harsh conditions such as pressure, extreme temperatures, vibrations, & shock explosions are some of the most common factors impacting this sector. Bulgin has a variety of solutions to deal with such challenging environments.

For instance, our Atex Zone 2 & IP rated connectors are perfectly suited to withstand the challenges of explosive & hazardous environments which constantly affect topside systems. We also have the knowledge & in-house expertise to provide you with bespoke custom solutions for the most challenging of subsea applications – typified by our deep sea ROV tether connector.



# Topside.

With demand for the world's natural resources increasing, so too are the challenges facing the Oil & Gas industry. Harsh conditions such as pressure, extreme temperatures, vibrations & shock explosions are some of the common impediments impacting this sector.

In an industry with such high-stakes whereby downtime or accidents can have the most catastrophic of consequences, high performance & extremely reliable solutions are fundamental to prevent this from occurring in both topside & Subsea applications. Bulgin has a variety of solutions to deal with these challenging environments.

For instance our Atex Zone 2 & IP rated connectors are perfectly suited to withstand the challenges of explosive & hazardous environments which constantly affect topside systems. We also have the knowledge & in house expertise to provide you with bespoke custom solutions for the most challenging of subsea applications – typified by our deep sea ROV Tether Connector.

## // Industry Applications:

- Pump Motors
- Pipe Inspection System
- Industrial Sand Blasters
- Security Video Monitoring
- Oil Rig Surveillance Control



# Products Related To Industry:

## Piezo Switches



- Dust, dirt, chemicals & water resistant
- Sealed to IP68 & IP69K
- 16, 19 or 22mm diameter
- Millions of cycles/actuators
- Illuminated & non-illuminated options

## Vandal Resistant Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## EXPLORA Series



Circular Power Connectors



- Ratings up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP67 & IP68 protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 6000 Series



Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## 9000 Series



Circular Power Connectors



- Up to 225A, 1250V AC RMS
- 2 to 11 contacts
- IP68 when mated (for parts with backshell)
- Screw Turn Locking
- Bayonet 1/4 Turn Locking Mechanism

## 7000 Series



Circular Power Connectors



- Ratings up to 25A, 600V
- 2, 3, 6, 10 & 32 contacts
- IP66, IP67 IP68 & IP69K rated
- Plastic Shells
- cULus, UL & VDE approvals

## 900 Series



Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## 5000 Series



Circular Fiber Connectors



- Designed to MIL-DTL-83526D
- 2 & 4 Channels / OM1 or OM3 Fiber Types
- Cable range from 1 to 450m
- Rated to IP68
- Secure, proven locking system



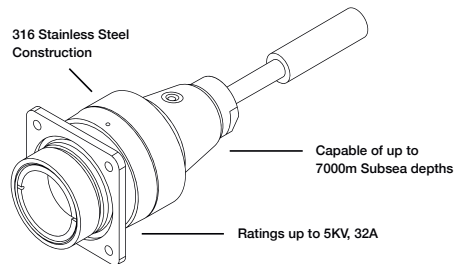
# Subsea // Case Study.

## 01 //

### The Challenge.

In environments where connectors & cables are exposed to high pressures & submerged in water for extended periods, secure & waterproof electrical connections are vital for ensuring that installations can be easily assembled, modified & maintained.

As pioneers in environmentally sealed connectors, Bulgin was approached by the largest manufacturer of subsea ROVs to develop a connector which combined quick & convenient connectivity with long-term corrosion-resistance.



## 02 //

### The Solution.

Drawing on Bulgin's extensive expertise in environmental sealing, the ROV Tether Connector is a custom solution that provides a quick yet secure coupling & locking mechanism.

This ensures that the connector can withstand demanding subsea conditions – such as high pressures & extreme temperatures – whilst providing the same uninterrupted power & data connectivity as the company's standard product ranges, as well as fiber optic signal feeds.

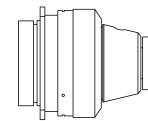
In addition to its 5kV, 32A rating, this Deep Sea Tether Connector also features dynamic pressure balancing via free flow of dielectric oil from the surface to the connector, enabling ROVs to operate at subsea depths of up to 7000m.

## 03 //

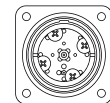
### The Result.

Engineered to prevent problems happening in the first instance, the ROV Tether Connector helps reduce cable termination time & potential downtime for subsea projects. Dynamic pressure balancing via free flow of dielectric oil from the surface to the connector enables ROVs to operate at subsea depths of up to 7000m.

Our client is the largest manufacturer of subsea ROVs, & is leading the way with this technology. The company's latest product, which features the ROV Tether Connector, was unveiled at the 2015 Offshore Technology Conference (OTC) in Texas, USA.



Data, Power & Fiber Optics



Pressure Balanced Oil Filled (PBOF)

# Products Related To Industry:

## ROV Tether Connector



Circular Power / Data Connectors



- 316 Stainless Steel Construction
- Pressure Balanced Oil Filled (PBOF)
- Data, Power & Fiber Optics
- Ratings up to 5KV, 32A
- Capable of up to 7000m subsea depths

## 9000 Series



Circular Power Connectors



- Up to 225A, 1250V AC RMS
- 2 to 11 contacts
- IP68 when mated (for parts with backshell)
- Screw Turn Locking
- Bayonet 1/4 Turn locking Mechanism

## 900 Series



Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## Capacitive Switches



Switches



- Momentary or latching functions
- Sealed to IP68 & IP69K
- Large or thin ring illumination options
- Long life operation – 50 million of cycles
- 16, 19, 22 or 25mm diameter options

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 4000 Series



Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 7000 Series



Circular Power Connectors



- Ratings up to 25A, 600V
- 2, 3, 6, 10 & 32 contacts
- IP66, IP67 IP68 & IP69K rated
- Plastic Shells
- cULus, UL, & VDE approvals

## 6000 Series



Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

# Marine.



Marine applications such as ship deck systems, marina facilities & boating equipment are constantly exposed to the harshest of conditions. With high corrosion & water ingress posing a constant threat to connectivity solutions, sealed & robust components are a must for applications in this market.

Originally designed for leisure yachts, our Buccaneer connector range is perfectly suited to meet the challenging requirements of marine applications both above & below water level.



# Above Water.

Surface marine applications such as ship deck systems, marina facilities & boating equipment are constantly exposed to the harshest of conditions. With high corrosion & water ingress posing a constant threat to connectivity solutions, sealed & robust components are a must for applications in this market. Originally designed for leisure yachts, our Buccaneer connector range is perfectly suited to meet the challenging requirements of marine applications both above & below water level.

With a wide portfolio of IP rated power, signal & data connectors, along with years of experience in designing & manufacturing sealed interconnect solutions, we are sure to have the right solution for your marine connectivity needs. If our existing product range doesn't meet your specifications then our experienced engineering teams have the knowledge & expertise needed to create a custom solution specific to your unique requirements.

## // Industry Applications:

- Boat & Yacht Lighting
- Water Quality Systems
- GPS Marine Equipment
- Container Ship Communication
- LED Marine Lanterns
- Unmanned Surface Vehicles (USV)
- Water Flow Data Loggers
- Marina Energy Distribution Units
- Sail Boats



# Products Related To Industry:

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## Standard Series USB

Circular Data Connectors



- USB V2.0 performance
- IP66, IP67, IP68 & IP69K protection
- USB type 'A' or 'B' configurations
- Single & double ended cable / panel mount options

## Rectangular

Rectangular Power Connectors



- 2, 3, 4, 6, 8 & 12 Contact Count
- IP68 (with Rear Protection)
- Rated to 13A
- Wedge-locks available for contact retention & alignment

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## Vandal Resistant

Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## Standard Series

Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 400 Series SMB

Circular Data Connectors



- 50Ω impedance SMB antenna
- Frequency range 0 - 4GHz
- IP66, IP67, IP68 & IP69K protection
- Rewireable & pre-wired options
- RG-174 cables

# Underwater.

Operating underwater requires the most rugged & reliable of connectivity components. Pressure, extreme temperatures & salt water all pose complex challenges for underwater marine applications. With more companies seeking to go deeper for longer in such hostile conditions due to production & exploratory reasons, increasing the life cycles of submersible connectors & simplifying product maintenance processes is more important than ever before.

With a high risk of corrosion affecting the integrity of power, signal & data connections, sealed connector solutions are a must for high performance underwater marine equipment. Bulgin's expertise in producing environmentally sealed connectors makes us one of the world's interconnect leaders for marine application solutions where immersion is required in low & high pressure underwater environments.

## // Industry Applications:

- Sealed Diving Cameras
- Diver Communications
- Depth Loggers
- Subsea ROV



# Products Related To Industry:

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## 400 Series

Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## USB C-Type

Circular Data Connectors



- USB3.2 supported
- Data rates up to 20 Gbps
- IP66, IP68 & IP69K rated
- Plug & play capability
- Secure, proven locking system

## Capacitive Switches

Switches



- Momentary or latching functions
- Sealed to IP68 & IP69K
- Large or thin ring illumination options
- Long life operation – 50 million of cycles
- 16, 19, 22 or 25mm diameter options

## 7000 Series

Circular Power Connectors



- Ratings up to 25A, 600V
- 2, 3, 6, 10 & 32 contacts
- IP66, IP67 IP68 & IP69K rated
- Plastic Shells
- cULus, UL & VDE approvals

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## 9000 Series

Circular Power Connectors

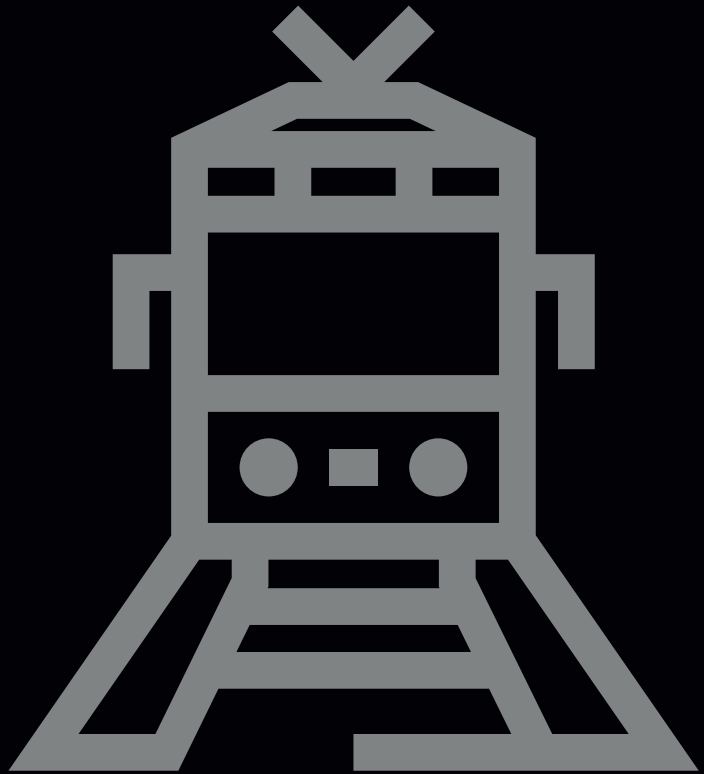


- Up to 225A, 1250V AC RMS
- 2 to 11 contacts
- IP68 when mated (for parts with backshell)
- Screw Turn Locking
- Bayonet 1/4 Turn locking Mechanism



# Transport & Infrastructure.

With ambient & environmental conditions such as water, moisture & extreme temperatures posing a constant threat to transport & infrastructure applications, reliable & robust solutions are vitally important in this sector. From outdoor lighting & industrial meters to HVAC systems & surveillance cameras, rest assured that our industry leading solutions are built for maximum reliability & performance to support the challenging needs of various indoor, outdoor & industrial applications.



# Lighting.

Bulgin is an industry leader in manufacturing reliable electronic solutions for lighting applications around the world. With ambient & environmental conditions such as water, moisture & extreme temperatures posing a constant threat to the performance of outdoor lighting equipment, secure & robust solutions are of paramount importance. For years we have supported the lighting needs of various infrastructure applications with our industry-leading solutions being used in various indoor, outdoor & industrial applications, from portable lighting for construction to airport flood lights.

Our IP rated circular connectors for power, signal & data are particularly suited to providing the high levels of performance needed for such demanding environments. Capable of being submerged in water & able to withstand high levels of UV exposure, they are specifically designed to reduce installation time & excel in challenging environmental conditions. If you require reliable waterproof connectors & cable assemblies suited to outdoor & architectural lighting applications, then Bulgin is the perfect choice to meet your unique lighting requirements.

## // Industry Applications:

- Roadside LED Lighting
- Commercial Lighting
- External Building LED Lighting
- Portable Maintenance LED Lighting
- Airport Flood Lighting
- Sport Venue LED Lighting



# Products Related To Industry:

## 400 Series



Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## Mini Series



Circular Power Connectors



- Water & dustproof to IP68 when mated
- 2, 3, 4 or 6 Contact screw terminal inserts
- 3 or 8 Contact solder or crimp inserts
- Cable range from 3.5mm - 9mm
- 5 body styles, Flex, Inline, Panel (2 styles), Panel Side Entry

## 4000 Series



Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 6000 Series



Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Fuse Holders



Fuse Holders



- In-line, panel, PCB & base mounting
- Screw or snap fit variants
- PC1, PC2 & PC3 shock protection
- IP66, IP67 & IP68 sealed versions
- Ideal for 5x20mm & 6.3x32mm fuse sizes

## Push Button



Switches



- Miniature, Round, Rectangular & Square Styles
- Screw or snap fit variants
- Front & Rear Panel Mount Types
- Illuminated & Non-Illuminated
- High Power Version 12(12)A @ 250VAC
- PC Mountable Options

## Rocker Switches



Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

# Security & Surveillance.

With applications such as surveillance cameras constantly operating in some of the world's most challenging outdoor environments, reliable data & power transmissions are vital for ensuring that they can operate 24/7 in harsh ambient conditions. To resolve this issue, we have created a wide variety of standardised rugged, lightweight & sealed connectivity solutions including field installable connectors & overmolded cable assemblies that can also be customised for your specific design & development needs.

Whether you require secure & reliable connectors for camera systems or robust anti vandal switches for door entry keypads, we are sure to have the right solution for your security application. We thrive on providing secure & reliable solutions that prevent downtime & minimise maintenance work for applications where security & surveillance are a priority to your operations.

## // Industry Applications:

- Traffic Cameras
- ANPR Cameras & Sensors
- Parking Control Camera
- Security Door Switch
- Door Entry Keypads
- Aerial Surveillance & Mapping
- Security Video Monitoring
- Portable Alarm Systems
- Unmanned Surface Vehicle
- CCTV Cameras



# Products Related To Industry:

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Push-Pull Series



Circular Automation Connectors



- Multiple contacts from 2 to 30
- High packing density for space savings
- Temp:-50°C to +200°C
- Cycle: >4500
- Resistance of Vibration: 10-2000Hz, 15g

## Fiber Range



Circular Fiber Connectors



- 4000, 5000 & 6000 series available
- Simplex & Duplex LC-Type Interface
- Expanded Beam series options
- Flex, Inline, Rear & Front Panel
- IP68 rating tested at 1,054kg/sq cm (15lb/sq in) 10m depth for 2 weeks

## 400 Series Mini USB



Circular Data Connectors



- Sealed Mini-USB cable connectors
- Data rates up to 480Mbps
- IP66, IP67, IP68 & IP69K protection
- USB V2.0 performance
- Front + rear & PCB panel mount options

## M5 / M8 / M12



Circular Automation Connectors



- A, B & D Coding Options
- IP67 protection
- Plastic & Metal Variants
- Overmolded cables PVC & PUR
- Ratings from 1A, 30V ac/dc up to 8A, 250V ac/dc

## 4000 Micro USB



Circular Data Connectors



- Data rates up to 480Mbps
- USB V2.0 performance
- IP66, IP67, IP68 & IP69K protection
- EN60068-2-52 Test Kb Salt Mist (Cyclic) Marine Severity Level 1

## Vandal Resistant



Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## 400 Series SMB



Circular Data Connectors



- 50Ω impedance SMB antenna
- Frequency range 0 - 4GHz
- IP66, IP67, IP68 & IP69K protection
- Rewireable & pre-wired options
- RG-174 cables

# Buildings & Construction.

Heavy duty machinery used for construction & building maintenance require components that are equally as rugged as the environments that they operate in. From outdoor lighting & industrial meters to indoor HVAC systems, rest assured that our wide range of switches, indicators & waterproof connectors are built for maximum reliability & performance.

## // Industry Applications:

- Air Compressor
- Cherry Pickers
- Wireless Load Sensors
- Terrain / Mud Monitoring Systems
- Smart Metering
- Security Door Switch Panels
- Moisture Meters
- Heating Systems
- Air Cleaning Systems
- Disabled Refuge Systems



# Products Related To Industry:

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Power Entry Modules



Power Entry Modules



- Vertical & horizontal arrangement
- Single or double pole variants
- Combinations of IEC inlets/outlets, filtered inlets, switches, fuse holders, voltage selectors & indicators available

## Indicators



Indicators



- LED, Neon & Filament options
- Panel sealed IP66 & IP67 versions
- Wide choice of bezel sizes & styles
- Multiple termination types
- Rugged stainless steel variants

## 400 Series Mini USB



Circular Data Connectors



- Sealed Mini-USB cable connectors
- Data rates up to 480Mbps
- IP66, IP67, IP68 & IP69K protection
- USB V2.0 performance
- Front + rear & PCB panel mount options

## Rocker Switches



Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## Enclosures



Enclosures



- IP67 rated - Dust & Waterproof
- ABS or Flame Retardant Polycarbonate
- Mounting posts & slots for PCB
- M20 thread cable glands & wall mounting brackets

## Toggle Switches



Switches



- Nylon / Metal & Lever options
- Ratings up to 20A, 250Vac - 277Vac
- IP67 panel seal versions
- Quick Connect, Solder, Screw & PCB termination options

## 7000 Series



Circular Power Connectors



- Ratings up to 25A, 600V
- 2, 3, 6, 10 & 32 contacts
- IP66, IP67 IP68 & IP69K rated
- Plastic Shells
- cULus, UL & VDE approvals



# Transportation.

The world is constantly changing & we help to keep it moving with our connectivity solutions. With more transport links & vehicles needed than ever before to meet the challenging needs of a growing population, we help to future proof your investment by providing cost effective & high performance solutions that last.

Experts in manufacturing sealed electrical connectors, we've provided connectivity solutions to transport & infrastructure applications for years. Particularly suited to provide power, signal & data connections in harsh environments, our reliable connector range makes sure that people & goods successfully get to their destination by land, sea or air.

## // Industry Applications:

- Lorry / Truck LED Lighting
- Road Management Maintenance
- Speed Check Signage
- Illuminated Taxi Sign
- Transport Refrigeration
- Noise Monitoring Terminal
- Container Cooling Units
- Surface Friction Test Equipment
- Noise Monitoring Terminal
- Traffic Lights



# Products Related To Industry:

## 900 Series

Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## 400 Series

Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## Toggle Switches

Switches



- Nylon / Metal & Lever options
- Ratings up to 20A, 250Vac - 277Vac
- IP67 panel seal versions
- Quick Connect, Solder, Screw & PCB termination options

## Fiber Range

Circular Fiber Connectors



- 4000, 5000 & 6000 series available
- Simplex & Duplex LC-Type Interface
- Expanded Beam series options
- Flex, Inline, Rear & Front Panel
- IP68 rating tested at 1.054kg/sq cm (15lb/sq in) 10m depth for 2 weeks

## Rectangular

Rectangular Power Connectors



- 2, 3, 4, 6, 8 & 12 Contact Count
- IP68 (with Rear Protection)
- Rated to 13A
- Wedge-locks available for contact retention & alignment

# Automotive.

An ever growing population calls for more vehicles to fulfil transportation needs. The rise of autonomous cars & increasingly connected vehicles also means that reliable & high performance components have never been more important in the automotive industry. Luckily we have a wide range of solutions perfectly suited to the demanding challenges of this industry.





# Automotive.

From automotive manufacturing & testing equipment to truck lighting & control panels for agricultural vehicles, our products are involved at every stage of a motor vehicles life cycle.

With a wide variety of products on offer including sealed connectors for power, signal & data, we can also produce bespoke custom solutions that combine switches, enclosures, PCB's & cable assemblies to meet the needs of demanding automotive applications.

## // Industry Applications:

- Power Diagnostics
- Wheel Diagnostic Equipment
- Military Vehicle Datacoms
- Off Road Vehicles
- Cherry Pickers
- Automotive Manufacturing
- Illuminated Taxi Sign
- Glove Compartment Light
- RV Heating / Cooling Systems
- Lorry / Truck LED Lighting



# Products Related To Industry:

## Switches

Switches



- Vandal Resistant, Rocker & Toggle
- IP66, IP67 & IP68 sealed versions
- Illuminated & Non-Illuminated options
- Front & rear panel mounted versions
- Large selection of sizes & styles

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## 900 Series

Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## 400 Series Mini USB

Circular Data Connectors



- Sealed Mini-USB cable connectors
- Data rates up to 480Mbps
- IP66, IP67, IP68 & IP69K protection
- USB V2.0 performance
- Front + rear & PCB panel mount options

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 6000 Series Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Quick 30° turn locking mechanism

## M5 / M8 / M12

Circular Automation Connectors



- A, B & D Coding Options
- IP67 protection
- Plastic & Metal Variants
- Overmolded cables PVC & PUR
- Ratings from 1A, 30V ac/dc up to 8A, 250V ac/dc

## Rectangular

Rectangular Power Connectors



- 2, 3, 4, 6, 8 & 12 Contact Count
- IP68 (with Rear Protection)
- Rated to 13A
- Wedge-locks available for contact retention & alignment

# Medical.

High performance & dependability are crucially important in medical technologies. This is why Bulgin's reliable & robust components are used in all areas of the medical industry from the production of pharmaceutical drugs to therapeutic, imaging, diagnostics & patient monitoring devices.







# Medical.

High performance & dependability are crucially important in medical technologies. This is why Bulgin's reliable & robust components are used in all areas of the medical industry from the production of pharmaceutical drugs to therapeutic, imaging, diagnostics & patient monitoring devices.

With a broad range of interconnect solutions for power or data & specialised antimicrobial switches perfectly suited for medical equipment, medical device OEMs can be confident in our ability to provide ideal solutions for the unique requirements of medical systems & environments.

## // Industry Applications:

- Medical Ventilation Device
- Pharmaceutical Machinery
- MRI Equipment
- Washdown Scales
- Dental X-Ray Equipment
- Lullaby Warmer
- Nebuliser
- Cryogen-free Refrigerators
- Dosing Pumps
- Ultrasonic Equipment



# Products Related To Industry:

## 6000 Series

Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## Standard Series USB

Circular Data Connectors



- USB V2.0 performance
- IP66, IP67, IP68 & IP69K protection
- USB type 'A' or 'B' configurations
- Single & double ended cable / panel mount options

## IEC Connectors

IEC Connectors



- IEC Connectors, Inlets & Outlets
- EC & EN 60320 Standards
- UL, CSA, VDE & CE approved
- C13, C14, C15, C16, C18, C19 & C20 as well as Sheet E, F, H, I & J types

## Rocker Switches

Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 400 Series Mini USB

Circular Data Connectors



- Sealed Mini-USB cable connectors
- Data rates up to 480Mbps
- IP66, IP67, IP68 & IP69K protection
- USB V2.0 performance
- Front + rear & PCB panel mount options

## Power Entry Modules

Power Entry Modules



- Vertical & horizontal arrangement
- Single or double pole variants
- Combinations of IEC inlets/outlets, filtered inlets, switches, fuse holders, voltage selectors & indicators available

## EMI Filters

EMI Mains Filters



- High performance IEC filtered inlets
- Current ratings from 1 to 10 amps
- Flange, snap to panel or base / bulkhead mounting options

# Renewable Energy.



Renewable energy technologies operate in some of the harshest environments on the planet. Extreme temperatures, UV exposure, vibrations & water all pose complex challenges in establishing & keeping renewable energy systems operational. With more moving parts than other renewable energy systems, wind turbines in particular require extremely robust connectors to cope with such extreme conditions.



# Renewable Energy.

Thoroughly tested & designed specifically to operate reliably in harsh conditions, Bulgin's rugged power & data connectors are the ideal solutions for green & renewable energy applications including wind & solar energy systems.

## // Industry Applications:

- Solar Power Inverters
- Wind Turbine Vibration Monitoring System
- Solar Lighting Panels
- Solar Water Pump Controller
- Solar Battery Enclosures
- Solar PV Combiner Boxes



# Products Related To Industry:

## Standard Series



Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Standard Ethernet



Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## 400 Series



Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## 4000 Series



Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## 900 Series



Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## 6000 Series



Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## 9000 Series



Circular Power Connectors



- Up to 225A, 1250V AC RMS
- 2 to 11 contacts
- IP68 when mated (for parts with backshell)
- Screw Turn Locking
- Bayonet 1/4 Turn locking Mechanism

## Rectangular



Rectangular Power Connectors



- 2, 3, 4, 6, 8 & 12 Contact Count
- IP68 (with Rear Protection)
- Rated to 13A
- Wedge-locks available for contact retention & alignment

# Data & Telecoms.



With the rise of big data, the Internet of Things (IoT), Industry 4.0 & the race for super fast broadband in recent years, the demand for electronic components is higher than ever before. Despite an increasing shift towards wireless technologies, the core equipment that enables these systems to operate are still heavily reliant on physical components such as electrical connectors, battery holders & switches.





# Data & Telecoms.

In an increasingly connected world, we have the necessary solutions to fulfil the ongoing needs of data centres & telecom networks across the globe. From power distribution to high speed data transmissions & user interface components, we have the solutions that you need to manage the stringent data demands of the future.

## // Industry Applications:

- Small Cell Backhaul Systems
- Uninterruptible Power Supply
- Network Encryption Equipment
- Telecom Towers
- Portable Satellite Equipment
- Data Centre Servers
- Satellite Communication Networks
- Mobile Network Transmitter
- Military Vehicle Datacoms
- Network Server Cabinets



# Products Related To Industry:

## M12 X-Code

Circular Automation Connectors



- Ethernet, Profinet Application
- 0.5A Rated Current
- IP67 degree of protection
- Plastic & metal options variants
- Maximum Data Signaling Rate to 10Gb/s

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## USB C-Type

Circular Data Connectors



- USB3.2 supported
- Data rates up to 20 Gbps
- IP66, IP68 & IP69K rated
- Plug & play capability
- Secure, proven locking system

## 6000 Series Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Quick 30° turn locking mechanism

## 400 Series SMB

Circular Data Connectors



- 50Ω impedance SMB antenna
- Frequency range 0 - 4GHz
- IP66, IP67, IP68 & IP69K protection
- Rewireable & pre-wired options
- RG-174 cables

## Toggle Switches

Switches



- Nylon / Metal & Lever options
- Ratings up to 20A, 250Vac - 277Vac
- IP67 panel seal versions
- Quick Connect, Solder, Screw & PCB termination options

## Fiber Range

Circular Fiber Connectors



- 4000, 5000 & 6000 series available
- Simplex & Duplex LC-Type Interface
- Expanded Beam series options
- Flex, Inline, Rear & Front Panel
- IP68 rating tested at 1.054kg/sq cm (15lb/sq in) 10m depth for 2 weeks

## 4000 Micro USB

Circular Data Connectors



- Data rates up to 480Mbps
- USB V2.0 performance
- IP66, IP67, IP68 & IP69K protection
- EN60068-2-52 Test Kb Salt Mist (Cyclic) Marine Severity Level 1

# Recreation & Leisure.



Our robust connectivity solutions power water features in some of the world's most renowned hotels & amusement parks. But that's not where our sealed capabilities end. We also have numerous sealed switches & fuse holders in operation worldwide to compliment systems utilising our watertight connectors & provide a truly comprehensive sealed solution.

Whether you require a waterproof power connector for outdoor events & productions or interface components for electrical appliances, we are sure to have the suitable solution for your design & development needs.



# Water Systems.

Whether indoor or outdoor, water systems such as swimming pools & water fountains require highly ruggedized & sealed solutions. Our robust connectivity solutions power water features in some of the world's most renowned hotels & amusement parks.

But that's not where our sealed capabilities end. We also have numerous sealed switches & fuse holders in operation worldwide to compliment systems utilising our watertight connectors & provide a truly comprehensive sealed solution.

## // Industry Applications:

- Water & Light Show Equipment
- Robot Pool Cleaning Equipment
- Motorised Swimming Pool Cover
- High End Jacuzzi
- Water Quality System
- Hotel Water Fountains
- Filtration Box
- Pool Heating Equipment



# Products Related To Industry:

## Rocker Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## 900 Series



### Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## Standard Ethernet



### Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## 6000 Series



### Circular Power Connectors



- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals

## Standard Series



### Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 9000 Series



### Circular Power Connectors



- Up to 225A, 1250V AC RMS
- 2 to 11 contacts
- IP68 when mated (for parts with backshell)
- Screw Turn Locking
- Bayonet 1/4 Turn locking Mechanism

## Vandal Resistant



### Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## Enclosures



### Enclosures



- IP67 rated - Dust & Waterproof
- ABS or Flame Retardant Polycarbonate
- Mounting posts & slots for PCB
- M20 thread cable glands & wall mounting brackets

# Entertainment & Hospitality.

Power connections & switches are fundamental for activating & controlling a variety of electronic equipment in entertainment & hospitality applications. Whether you require a waterproof power connector for outdoor events & productions or interface components for electrical appliances, we are sure to have the suitable solution for your design & development needs.

## // Industry Applications:

- Water Show Equipment & Motors
- Popcorn Machines
- Vending Machines
- Roulette Machines
- Event & Stage Lighting
- Pool Cleaning Robots
- Electronic Scoreboards
- Champagne Dispensers



# Products Related To Industry:

## Rocker Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## IEC Connectors



- IEC Connectors, Inlets & Outlets
- EC & EN 60320 Standards
- UL, CSA, VDE & CE approved
- C13, C14, C15, C16, C18, C19 & C20 as well as Sheet E, F, H, I & J types

## Vandal Resistant Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## Standard Series



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## 900 Series



Circular Power Connectors



- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals

## 400 Series



Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## 4000 Series



Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## M12 / M16



Circular Automation Connectors



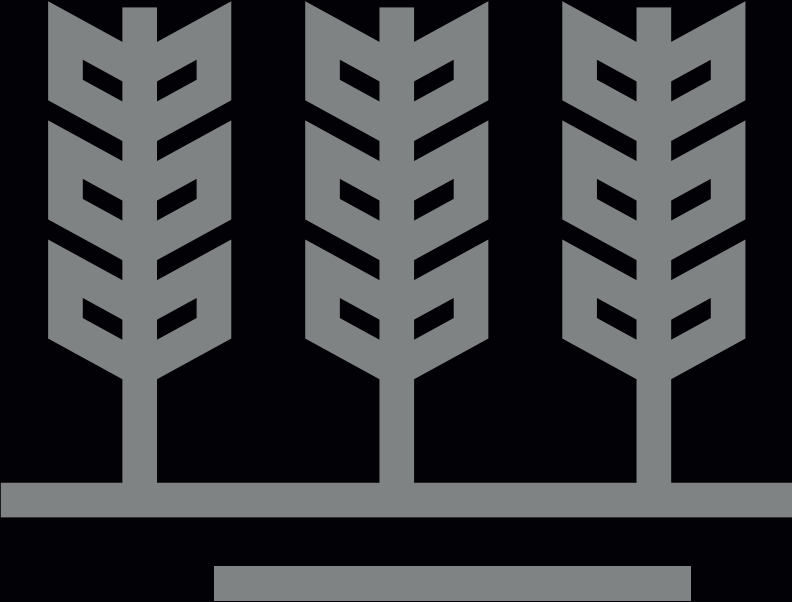
- A, B & D Coding Options
- IP67 protection
- Plastic & Metal Variants
- Overmolded cables PVC & PUR
- Ratings from 1A, 30V ac/dc up to 8A, 250V ac/dc



# Agriculture.

The background image shows a person in a cap and work clothes operating a large piece of agricultural machinery, possibly a combine harvester, in a field. The entire image is overlaid with a semi-transparent blue hexagonal grid pattern.

The agricultural market has many diverse applications requiring a whole host of electronic components. From marine fish farming systems to agricultural equipment, applications in this market are exposed to a wide variety of harsh conditions including water, dust, dirt, chemicals & extreme temperatures.



# Agriculture.

To meet the challenging needs of the agriculture industry, we have developed an extensive range of robust sealed connectors that ensure optimal protection against external influences in harsh environments. We also produce numerous types of switches & indicators that are used around the world on heavy duty farming vehicles & equipment.

## // Industry Applications:

- Agricultural Vehicles
- Cattle Feeding Machines
- Land Surveying Equipment
- Heating Systems
- Livestock Process Control Systems
- Fish Feeding Systems
- Vehicle Control Joysticks
- Bioacoustics Monitoring System
- Dairy Analyser
- Washdown Scales



# Products Related To Industry:

## 400 Series

Circular Power Connectors



- Ratings up to 8A, 250V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, screw thread locking
- CE, UL, CSA & VDE approvals

## 4000 Series

Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## Standard Series

Circular Power Connectors



- Rating up to 12A, 277V ac/dc
- 2, 3, 4, 6, 7, 9, 12 & 25 contacts
- IP66, IP67, IP68 & IP69K protection
- Plug & receptacle connectors
- CCC, UL, CSA & VDE approvals

## Standard Ethernet

Circular Data Connectors



- Cat5e RJ45 Ethernet Connectors
- Data rates up to 100MHz
- IP66, IP67, IP68 & IP69K protection
- Shielded system
- Noise immunity & EMI protection

## Push Button

Switches



- Miniature, Round, Rectangular & Square Styles
- Front & Rear Panel Mount Types
- Illuminated & Non-Illuminated
- High Power Version 12(12)A @ 250VAC
- PC Mountable Options

## Rocker Switches

Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## Toggle Switches

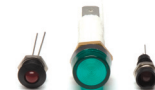
Switches



- Nylon / Metal & Lever options
- Ratings up to 20A, 250Vac - 277Vac
- IP67 panel seal versions
- Quick Connect, Solder, Screw & PCB termination options

## Indicators

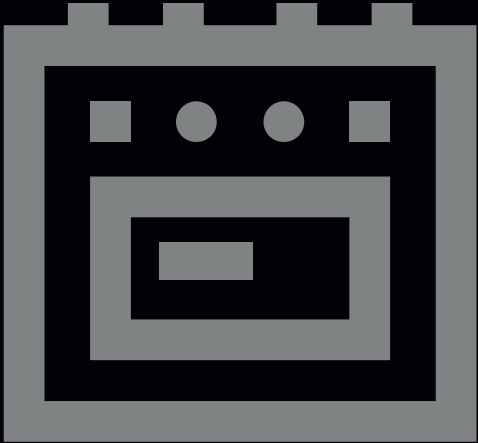
Indicators



- LED, Neon & Filament options
- Panel sealed IP66 & IP67 versions
- Wide choice of bezel sizes & styles
- Multiple termination types
- Rugged stainless steel variants

# Robust Consumer Electronics.

Operating in a more robust sector of the consumer electronics market, our products provide the user interfaces for power, switching & indicating for a broad array of applications. Our solutions reliably connect both commercial & domestic appliances ranging from commercial popcorn makers, industrial kitchen appliances, hot holds, commercial dishwashers, vacuum cleaner etc.



# Commercial Goods.

From hospitality applications to catering & retail equipment, we have a broad portfolio of connectivity solutions & user interface components to help engineers design new, innovative appliances & goods for commercial use.

## // Industry Applications:

- Rotisserie Ovens
- Vending Machines
- Kitchen Climate Control System
- Food & Drink Cleaning Machines
- Air Compressor
- Electric Insect Control Device
- Commercial Coffee Machines
- Champagne Dispensing Machines
- Commercial Freezers
- Commercial Kitchen Grills



# Products Related To Industry:

## Rocker Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## Vandal Resistant Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## Piezo Switches



- Dust, dirt, chemicals & water resistant
- Sealed to IP68 & IP69K
- 16, 19 or 22mm diameter
- Millions of cycles/actuations
- Illuminated & non-illuminated options

## IEC Connectors



- IEC Connectors, Inlets & Outlets
- EC & EN 60320 Standards
- UL, CSA, VDE & CE approved
- C13, C14, C15, C16, C18, C19 & C20 as well as Sheet E, F, H, I & J types

## 4000 Series



Circular Power Connectors



- Ratings up to 13A, 600V ac/dc
- 2, 3, 4, 6, 8, 10 & 12 Contacts
- IP66, IP67, IP68 & IP69K protection
- Pin or socket, bayonet locking
- UL, CSA & VDE approvals

## Battery Holders

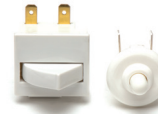


- AAA, AA, C, D & PP3 battery sizes
- Accommodating 1, 2, 3 or 4 cells
- IP67 sealed versions
- Suitable for PCB mounting
- Panel mounting versions

## Refrigerator Switches



Switches



- Momentary on & off switching
- Splash resistant variants
- Choice of actuators
- Switch rating from 0.2A, 250Vac up to 5A, 250Vac

## M5 / M8 / M12



Circular Automation Connectors



- A, B & D Coding Options
- IP67 protection
- Plastic & Metal Variants
- Overmolded cables PVC & PUR
- Ratings from 1A, 30V ac/dc up to 8A, 250V ac/dc



# Consumer Goods.

The modern day home is filled with many consumer electronics & devices that require reliable electronic components. With smart homes becoming increasingly connected along with the growth of the consumer electronics market, our range of power connection & switch solutions are perfect for meeting the needs of many small or large domestic appliances including brown & white goods as well as outdoor gardening equipment.

## // Industry Applications:

- Popcorn Machine
- Mini Drinks Cooler
- Professional Hair Dryer
- Cooker Oven
- Vacuum Cleaner
- High End Jacuzzi
- Portable Alarm Systems
- Coffee Machines
- Food Mixer
- Chest Freezer



# Products Related To Industry:

## Rocker Switches



- Ratings from 10A, 250Vac - 20A, 277Vac
- Push-on, solder & PCB terminals
- Splash resistant & antimicrobial options
- Illuminated & Non-Illuminated options
- Large selection of sizes & styles

## Vandal Resistant Switches



- Rugged & Attractive
- High Corrosion Resistance
- Dome, Low & Prominent Profiles
- IP66, IP67 & IP68 Sealing Versions
- Illuminated & Non-Illuminated

## IEC Connectors



- IEC Connectors, Inlets & Outlets
- EC & EN 60320 Standards
- UL, CSA, VDE & CE approved
- C13, C14, C15, C16, C18, C19 & C20 as well as Sheet E, F, H, I & J types

## Push Button Switches



- Miniature, Round, Rectangular & Square Styles
- Front & Rear Panel Mount Types
- Illuminated & Non-Illuminated
- High Power Version 12(1/2)A @ 250VAC
- PC Mountable Options

## Battery Holders



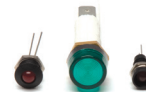
- AAA, AA, C, D & PP3 battery sizes
- Accommodating 1, 2, 3 or 4 cells
- IP67 sealed versions
- Suitable for PCB mounting
- Panel mounting versions

## Refrigerator Switches



- Momentary on & off switching
- Splash resistant variants
- Choice of actuators
- Switch rating from 0.2A, 250Vac up to 5A, 250Vac

## Indicators



- LED, Neon & Filament options
- Panel sealed IP66 & IP67 versions
- Wide choice of bezel sizes & styles
- Multiple termination types
- Rugged stainless steel variants

## Fuse Holders



- In-line, panel, PCB & base mounting
- Screw or snap fit variants
- PC1, PC2 & PC3 shock protection
- IP66, IP67 & IP68 sealed versions
- Ideal for 5x20mm & 6.3x32mm fuse sizes

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