

# Amphenol





## Agriculture

At Amphenol we understand Agriculture sensors and lighting have unique interconnect needs. Amphenol provides high performance connectors, wire and cable, custom assemblies, sensors and interconnection products for professional Agriculture applications. We know lighting and sensing has more product requirements than just illumination or detection. Cabling, lighting instruments, monitoring of temperature, humidity and CO<sub>2</sub>, as well as, controllers are all part of the ecosystem.

Agricultural facilities and greenhouses require proper environmental conditions for optimal plant growth and health. Most critical to productivity, quality, and energy conservation are the monitoring and control of carbon dioxide (CO<sub>2</sub>) concentration in combination with temperature, humidity, and ambient light (photosynthetically active radiation, or PAR).

Amphenol Industrial Products Group and Amphenol Advanced Sensors have partnered in support of smart greenhouse environments with monitoring, control, and interconnect resoluteness. Amphenol offers the widest selection of robust interconnect products that can complement all Agriculture needs.

## Amphenol

Since 1932 Amphenol has been the interconnect technology provider of choice to industry leading companies throughout the world. With a broad and diverse product portfolio, Amphenol is able to develop the right solutions for our customers across the diverse segments of the rapidly expanding electronics market.

Whether you need power connectors, signal connectors, complete cable assemblies or system attachments, we have the right solution for your Agriculture application.

We also know you need a partner with a global footprint of service and support. Amphenol has over 85 facilities in 30 countries and due to our culture of cost control and operating discipline we are able to prosper in all economic climates. Amphenol's background in producing high reliability connectors for the harshest environments on Earth and in Space gives us the unique experience needed to produce extremely reliable, cost effective, industry standard products for the lighting industry.

If you have the need for a customized solution our engineers will work with yours to produce the right customized interconnects for your application. Amphenol connectors are approved by UL/CSA, VDE and other international standards.



## Sensors for Agriculture

### Telaire T3000 Series | CO<sub>2</sub> Sensors for Harsh Environments

**TELAIRE**<sup>®</sup>



AAS

The Telaire T3000 Series CO<sub>2</sub> sensors are designed for CO<sub>2</sub> monitoring in harsh and demanding environments. Utilizing Telaire's nondispersive infrared (NDIR) sensor and electronic signal conditioning technology, the T3000 Series provides robust packaging in numerous configurations of measurement range, supply voltage, and output signals.

#### Features and Benefits

- High-accuracy carbon dioxide (CO<sub>2</sub>) transmitters for measurement and control applications in harsh environments
- Nondispersive infrared (NDIR) sensing technology
- Dual wavelength sensor design enables reliable operation in environments with prolonged periods of elevated CO<sub>2</sub> concentrations
- Extended temperature operating range
- Factory calibrations available up to 20% CO<sub>2</sub> concentration
- Analog or digital output options
- Available IP67 ingress protection
- Integrated diffusion filter and easy mounting via external tabs
- Custom designs available

### Telaire T9602 Series | Temperature and Humidity Sensors

**TELAIRE**<sup>®</sup>



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The Telaire T9602 Series Temperature and Humidity Sensors deliver accurate and reliable operation in a compact, fully-integrated, and ready-to-use package. Designed for harsh and demanding environments, the T9602 Series utilizes Telaire's advanced ChipCap2 sensing technology and is available in a variety of configurations to serve applications in HVAC, industrial, and healthcare markets.

#### Features and Benefits

- Fully calibrated and temperature compensated
- Waterproof - IP67 Certified
- I<sup>2</sup>C Digital Output or Pulse Density Modulated (PDM) Output (convertible to analog)
- Precise and accurate ( $\pm 2\%$  RH,  $\pm 0.5^\circ\text{C}$ , 14-bit resolution)
- Low current consumption; 3.3 or 5 VDC operation
- Robust over-molded package with integrated filter ensures reliable operation in harsh environments
- Available in multiple cable lengths
- Flexible mounting options

### Thermometrics JI/JIC Temperature Sensor Assemblies

 **THERMOMETRICS**



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The Thermometrics JI/JIC Temperature Sensor Assemblies incorporate NTC thermistors molded onto a flexible cable. Providing IP68 rated waterproof protection, the Type JIC model offers the option of a stainless-steel sensor housing.

#### Features and Benefits

- Waterproof - IP68 Certified
- Withstands freeze/thaw cycling
- Range of wire lengths from 300-5000mm (11.8 in-16.4 ft)
- Sensor tip and extension cable; integrated over molded construction
- RoHS compliant

## Industrial Connectors for Agriculture

### X-LOK | Blind Mating Quick Lock Solution



ALTW

Amphenol LTW's X-Lok series connectors are presented in various sizes for power, signal and hybrid applications for fast, simple and reliable connections. Featuring a push lock mechanism for blind mating with audible and tactile feedback. The X-Lok series provides less mating failure and quicker mating than traditional threaded solutions.

#### Features and Benefits

- Push lock mechanism, quick and easy installation
- IP68 waterproof rating
- Receptacle, overmolded and field installable in solder, crimp or screw-in termination
- Power, signal and hybrid applications up to 50A
- Operating temperature -40°C to +105°C
- UL2238, UL1977, UL50e, CSA and CE certified

### SSL | Low Profile Design



ALTW

The SSL series is a waterproof and non-waterproof connector series developed for LED lighting and non-lighting applications. Its low profile design aims at minimizing and eliminating the field wiring and reducing labor time as well as facilitating any maintenance job.

#### Features and Benefits

- Wire-to-wire, wire-to-board, board-to-board, jumper and receptacle options
- Available in field installable and overmolded with flat or round cables in black color (for outdoor) and white color (for indoor)
- IP68 waterproof rating
- Low Profile (Compact design for smaller footprints)
- Reliability (positive latching to ensure interconnection, polarization key to prevent mis-mating)
- Current Rating up to 5A in 2 ~ 6 pins
- Operating temperature -40°C to +105°C
- UL1977, UL2238, cUL, CSA certified

### Cable Joiner |

Simple, Quick and Reliable Cable Interconnections



ALTW

Amphenol LTW's Cable Joiner was designed and developed for simple, quick and reliable cable interconnections.

It is available in several options to meet various cable O.D. and wire sizes. Amphenol's cable joiner also meets the latest requirements for locking protection. Installation is quick and simple with standard crimping terminals or screw terminal blocks for different application needs.

#### Features and Benefits

- Operating voltage up to 600V
- IP68 waterproof rating
- Screw-in, crimp, push-in terminations
- Flammability UL 94V-0 & UV resistance
- Current rating up to 30A
- UL, TUV certified

### RBL |

Push Lock with Latch and Fool-proof Design



ALTW

Amphenol LTW RBL Connectors are IP68-rated waterproof circular connectors with current ratings of 5A, 10A, or 20A. This Amphenol LTW waterproof connector series offers an operating temperature range of up to -40°C to +105°C and durability of 250 cycles. RBL Connectors provide maximum contact resistance of 10mΩ and minimum insulation resistance of 100MΩ at 500VDC.

#### Features and Benefits

- IP68 waterproof rating
- Current rating 5A, 10A, 20A
- Operating temperature -40°C to +105°C
- 10mΩ maximum contact resistance
- 100MΩ minimum insulation resistance at 500VDC
- At least 250 mating cycles
- Salt spray 48h
- UL, CE certified

## Industrial Connectors for Agriculture

### M Series



ALTW

Amphenol LTW M Series Sensor Connectors feature waterproof ratings of IP65, IP67, IP68 and IP69K with current ratings of 1.5A to 28A. This connector series includes receptacles, connectors over-molded with cable, and field-installable connectors with at least 100 mating cycles. Amphenol LTW M Series connectors meet IEC standards. These connectors offer standard cable lengths ranging from 1M to 99M. These sensor connectors are also available in M8 SMT and M12 SMT models.

#### Features and Benefits

- Patented universal push pull quick mating design
- Double or single wire design provides flexible choice for customer application
- Pitch from 3.81mm to 10.0mm
- Rated Voltage / Current: 600V / 28A
- Flammability UL94V-0 & UV Resistance
- Wire Range: AWG 12 – 26 (4.00mm<sup>2</sup> ~ 0.14mm<sup>2</sup>)
- IEC, UL certified

### Power |

Robust, High-density Crown Spring Terminal Design



ALTW

Amphenol LTW Power Connectors offer up to 50A current rating and feature a robust, high-density crown spring terminal design. Amphenol LTW Power hybrid-type connectors offer 2A signal current in addition to up to 50A power and provide a three-points lock bayonet mating style. The Power series is UV resistant and UL 94V-0 rated. The series also provides IP67 ingress protection when mated and is ideal for use in electric bikes, lighting systems, industrial automation, and broadband wireless access.

#### Features and Benefits

- Robust, high-density terminal design (crown spring terminal)
- Screw / 2-point / 3-points lock bayonet mating style
- Hybrid type
- AC / DC applications
- Current rating up to 80A
- UL 94V-0 rated material & UV resistance
- UL, cUL, TUV certified

### Ceres



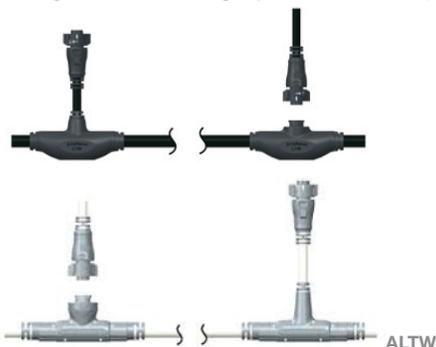
ALTW

Amphenol LTW Ceres waterproof connectors are available as a receptacle, receptacle connector with cable, and over-molded with cable. The field installable options are available in multiple sizes mini, standard, middle, and large. The Ceres waterproof connectors offer  $\leq 10\text{m}\Omega$  contact resistance,  $\leq 100\text{M}\Omega$  at DC500V insulation resistance, and at least 2000 mating cycles.

#### Features and Benefits

- Current rating 2A, 5A, 10A, 20A, 5A+2A, 10A+5A, 20A+2A, 20A+5A
- IP66-IP67 waterproof rating
- Operating temperature -40°C to +105°C
- 2000 mating cycles
- $\geq$  AC 1000V / 1 minute
- Salt spray 48h
- UL certified

### Intelligent Pre-Cabling System Solution (IPCS)



ALTW

Amphenol LTW Intelligent Pre-Cabling System (IPCS) is your right answer for the LED Lighting incorporation in indoor or outdoor applications. With the simplified design and wide flexibility, IPCS solves your needs for electrical wiring and cabling infrastructure as well as provides you large savings in your on-site installation time and cost. The concept of IPCS is suitable for ALTW's various connector series, ideal for large variety of customization.

#### Features and Benefits

- Various solution for indoor/ outdoor lighting
- Flexible for power, data and hybrid applications
- Suitable for different connectors, cable types, metal/plastic conduits and pipes, etc.
- Distribute safe, low voltage DC power to lighting fixtures, sensors and other electrical devices
- Offer the ability to repurpose and reconfigure without rewiring
- To meet the control strategies for different parts of the building
- Flexibility for customization to adopt to any kind of network connecting topology
- Plug and play modularity

## Business Units

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Note: AAS = Themometrics and Telaide