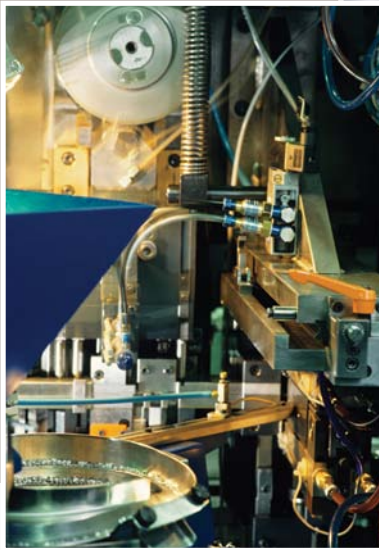


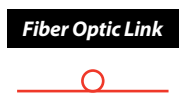
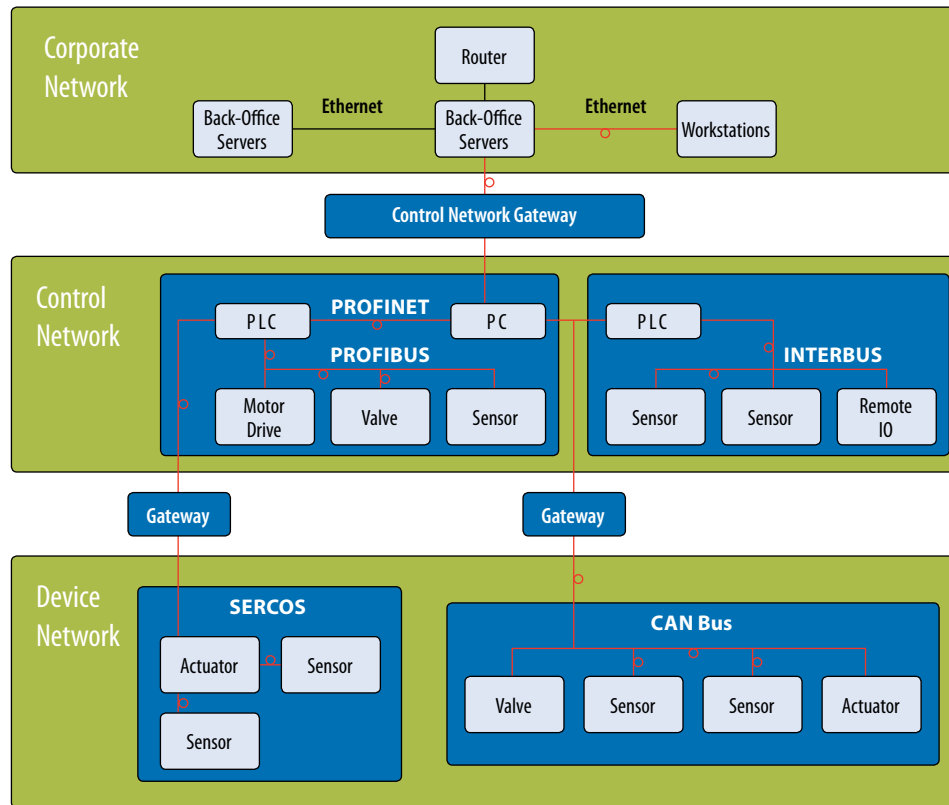
# SOLUTIONS .

for **INDUSTRIAL**  
**AUTOMATION**



# Optimized Industrial Automation and Networking Solutions

Firecomms fiber optic solutions deliver on the harsh demands of industrial automation and networking applications, ensuring the integrity of transmitted data is not compromised by high voltage environments or electromagnetic interference. Firecomms has developed our light sources and communications ICs with the deep understanding of the stresses and strains placed on industrial networking applications. Our light sources use Resonant Cavity LED (RCLED) technology to ensure the strongest optical output at the lowest currents while preserving stability after decades of operation. Our robust receiver topologies guarantee error-free reception in high EMI fields.



# Sense, Control, Communicate

In industrial automation and networking applications the factory environment can be viewed in three layers: the device network, the control network and the corporate network. Each layer operates in an environment where significant challenges must be overcome to ensure a reliable communication system. In the face of unwanted interference from ground loops and electromagnetic interference (EMI), equipment designers frequently take advantage of fiber optic connectivity to preserve and protect the equipment and communication links.

Across the device network layer of the factory floor is an array of sensors, actuators and valves that need to be controlled, switched or diagnosed. Due to the very high coupling efficiency into Plastic Optical Fiber (POF), Firecomms' 650nm analog RCLD light sources are ideal for use in sensors which use analog optical sources as light barriers or distance sensors.

Many of the device network components are connected over industry standard field buses such as SERCOS, INTERBUS or PROFIBUS. Fiber optic links over POF are used to mitigate the high EMI generated by motors or high voltage circuits at this level. Firecomms DC-5 MBd or DC-10 MBd fiber optic transmitters and receivers are perfect solutions for these field bus applications. In the case of variable-speed drives, which are common in today's factory environment,

Firecomms DC-50 MBd transmitters and receivers are used in the power stage control link to generate control signals for high voltage IGBT/IGCT semiconductors used in these applications.

In the control network layer a mixture of field bus topologies are used increasingly with Industrial Ethernet standards, such as PROFINET, which are becoming widely adopted. Similarly in usage cases where equipment designers need the benefits of galvanic isolation, elimination of ground loops, and protection against EMI, factory planners will take advantage of fiber optic links to protect network integrity. Firecomms' range of 10/100 Mbps fiber optic transceivers are specifically designed for use within the industrial environment over POF or Plastic/Polymer Clad Silica (PCS) fibers for distances to 100m. Enabled for LV-PECL or LVDS interfaces, our transceivers are packaged in robust OptoLock® or LC-compatible packages and are rated to 85°C for the harshest of environments.

Finally, for communication applications within the corporate network, designers rely on industrial communication standards such as Fast or Gigabit Ethernet. For these high speed networking applications, Firecomms offers transceivers in an array of form factors, ranging in speeds from 10 Mbps to Gbps for use on POF or large core glass fiber cables for extended distances.

## Flexible Solutions from Firecomms

To ensure compatibility and versatility, Firecomms offers the widest choice of fiber optic solutions with our range of transmitter, receiver and transceiver products in three different connector configurations: OptoLock®, LC and RedLink (compatible with the Versatile Link product range from Avago Technologies):

- Industrial Ethernet Transceivers (100 Mbps-1 Gbps)
- Analog Transmitters & Receivers
- Industrial RedLink Transmitters & Receivers (DC-1/5/10/50 MBd)



OptoLock®



LC Connector



RedLink Connector



## Fiber Optic Communications for Industrial Automation Applications

Firecomms products with Plastic Optical or Plastic Clad Fiber (POF/PCS) links offer many advantages in industrial networking applications:

**EMI/RFI immunity** ideal for industrial, harsh, noisy environments

**Galvanic isolation** between transmitter and receiver, ideal for harsh, noisy industrial environments

**Visible spectrum** operation enables eye-safe, fast troubleshooting

**Low power** consumption, transmitters capable of operation at 3-4mA

**Durable**, flexible and lightweight

**Resilient** to bending and vibrations

**High reliability** for extended machine uptime

**Industrial temperature** in range of -40 to +85°C

**Reduced maintenance cycle time** provides up to a 20-year lifecycle on transceivers and cables

**Simplified field installation** for easy termination of large core optical fibers in custom distances

# GLOBAL TECHNOLOGY.

**Firecomms** is a global leader in the provision of fiber optic solutions and optical transceivers, skillfully combining state-of-the-art compound and silicon semiconductor technology with inventive small-scale integration. A global multinational company, Firecomms is jointly headquartered in Cork, Ireland and Tongxiang, China with additional facilities in the USA, Japan and Southeast Asia. Together with a far reaching network of representatives and distribution channels, Firecomms serves its global clients across a range of power and energy, industrial, transportation, medical and consumer markets.

Firecomms leverages its deep knowledge across our multi-disciplinary teams in developing the broadest range of fiber optic transmitters and receivers specifically suited to our target markets. With an emphasis on world class performance in reliability, Firecomms utilizes internally developed market leading Resonant

Cavity LED (RCLED) photonics with ultra low power CMOS drivers in our transmitters. Together with robust receiver IC architectures, Firecomms products enable ultra low power fiber optic links, from DC up to Gigabit data rates, to ensure extended lifetimes in the harshest of environments.

Ease of connectivity and installation in the field while maintaining robust, reliable interconnects across the industrial temperature range is at the forefront of Firecomms connectivity solutions. Our most popular product families are the patented OptoLock® for the quickest of terminations with bare Plastic Optical Fiber, the well recognized LC connector ratified by the IEC for use with POF and PCS cable assemblies, and our RedLink range of products, which are compatible with the universally known Versatile Link products from Avago Technologies.

Firecomms maximizes design freedom and production flexibility for customers through our Ireland based R&D Center of Excellence, with assembly at our world class production facility in Tongxiang, China. By maximizing the internal sources of ICs and photonics, coupled with internal production facilities, Firecomms maintains a highly competitive yet flexible supply chain to meet our customers' demanding needs.

With our long history in the fiber optic industry, Firecomms continues to meet and exceed the needs of our customers through our worldwide team of field application engineers who consistently provide local service and novel, innovative and price-conscious fiber optic solutions.

For details on Firecomms and our products, please visit our website at [www.firecomms.com](http://www.firecomms.com) or contact us through any of our worldwide locations.



[info@firecomms.com](mailto:info@firecomms.com)  
[www.firecomms.com](http://www.firecomms.com)



**Europe**  
Cork, Ireland  
+353 (21) 454 7100  
[saleseu@firecomms.com](mailto:saleseu@firecomms.com)

**China**  
Tongxiang, Zhejiang  
+86 573 88989916  
[salescn@firecomms.com](mailto:salescn@firecomms.com)

**Americas**  
Austin, TX  
+1 (512) 328-0300  
[salesam@firecomms.com](mailto:salesam@firecomms.com)

**Japan/Korea**  
Yokohama, Japan  
+81 45 514 9139  
[salesjpr@firecomms.com](mailto:salesjpr@firecomms.com)

**RoW**  
Cork, Ireland  
+353 (21) 454 7100  
[saleseu@firecomms.com](mailto:saleseu@firecomms.com)