



## Wireless Solutions

### Gateways, Transmitters and Receivers

Monitoring the difficult parts of your operation has never been simpler.

**COOPER** Crouse-Hinds



# Wireless Solutions – For no worries, with no wire

**Imagine. Relaying information without worrying about obstacles.**



## Application 1

You're operating MOV's (motor operated valves) in a tank farm in a remote area of your facility. You'd like confirmation in the control room that a given valve did indeed open or close so you can handle a failure before it creates a potentially dangerous situation.

### Old Way:

Send someone on a 20-minute trip to visually inspect or hard wire a sensor back to the control room (if you had unlimited manpower and budget).

### New Way:

Install one Cooper Crouse-Hinds transmitter and one gateway to receive confirmation wirelessly, without ever leaving the control room.

### Benefit:

Savings on the cost of wire, conduit, cable and gasoline; time savings for employees.  
Improved performance and safety.

**Suddenly, everything that makes wired monitoring or control solutions impractical – distance, hazards, barriers, moving parts and expense – no longer matters.**

**With wireless connectivity from Cooper Crouse-Hinds, imagination becomes reality.**

Any way you look at it, Cooper Crouse-Hinds Wireless Solutions are the smarter way to improve safety and reduce downtime in your challenging industrial situation. Greater control. More streamlined processes. Reduced costs versus wired systems. You'll see the benefits of Cooper Crouse-Hinds' new line of wireless products throughout your operation. Once installed, these wireless systems link you to assets and processes like never before, through reliable, encrypted wireless transmissions.

**Now you can monitor tank levels, heat tracing, pumps and scores of other equipment – linked wirelessly to your control room.**

Cooper Crouse-Hinds wireless modules connect directly to sensor monitoring/control devices, transmitting their signals (over 20 miles when using an antenna) to transceivers, receivers or gateways. For path redundancy and increased network range, they can also be programmed to re-transmit to multiple wireless devices or feed data into a Programmable Logic Controller (PLC), Supervisory Control and Data Acquisition System (SCADA) or a Distributed Control System (DCS).

The functionality of the entire Cooper Crouse-Hinds wireless line is designed for maximum flexibility and cost effectiveness:

- **Maximum Reliability.** Using frequency hopping spread spectrum technology, signals are sent at various frequencies to avoid interferences from occurring at any one frequency.



Wireless solutions for hazardous and industrial areas is now a reality. Thanks to Cooper Crouse-Hinds Wireless Solutions, virtually nothing can stop you from taking safety and productivity to new levels. In every corner of your operation. So go wireless with Cooper Crouse-Hinds, and get connected like never before.

- **Optimal Efficiency.** Radios can be configured for exception reporting (only transmitting when a signal value changes) and messages may be transmitted in blocks to compress signal information, thus minimizing bandwidth usage and preserving battery life.
- **Absolute Simplicity and Flexibility.** Easy to use, simple to install. A vast selection of digital, analog and pulse inputs per device allows you to use fewer radios per system, reducing overall costs.
- **Total Security.** High security data encryption and frequency encoding algorithms protect against industrial espionage or malicious hacking, and the system can be programmed so all modules require security keys to decode wireless messages.

Your I/O network can comprise up to hundreds of modules, linking any input to any output using the simple peer-to-peer communication program that comes with each module. Our application engineers will work with you to choose from standard modules to optimize the number and type of units you need and reduce the cost per access point. Best of all, Cooper Crouse-Hinds Wireless Solutions are designed to grow with you — up to 31 serial units can be added to any receiver to expand your wireless capabilities.

## One-Way Communication



## Application 2

As a rural water authority, you need to maintain water supply to a network of elevated tanks and towers in an area which is experiencing strong population growth.

### Old Way:

You rely on timer-based pump controls with daily site checks by maintenance personnel, but several problems arise: Oversupply of treated water, excess use of staffing and inability to allocate pump run times to the most cost-effective energy tariffs.

### New Way:

Install Cooper Crouse-Hinds wireless units and level transducers at existing tanks, towers, pump stations and control systems in the treatment plant. Operators can control and display status of tanks, pumps and valves, and access trending reports for valuable data analysis.

### Benefit:

Planning capabilities are greatly enhanced, while energy and labor costs are both reduced.

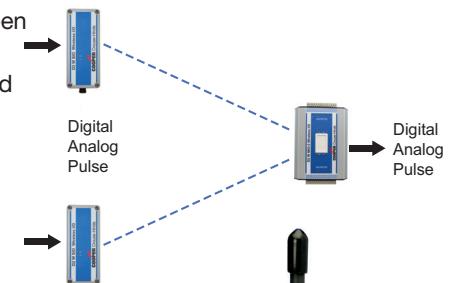
### Application Examples:

- General plant monitoring
- Wireless connection of flowmeters or energy meters
- Monitoring of storage tanks
- Wireless alarms for power faults
- Monitoring cathodic protection on pipelines

### Transmitters

These ultra-low power consumption units are economical solutions for monitoring remote process signals. They can transmit 2 digital inputs and 1 analog signal to other wireless devices, and thousands can be configured into a network. The rugged aluminum weatherproof enclosure (with IP66 rating) makes these transmitters ideally suited for harsh applications.

They revert to a 'sleep mode' between transmissions to conserve power, and an optional battery pack makes them particularly suitable where power is not available.



### Transmitters and Receivers

This transmitter/receiver pair is used to transmit up to 2 digital inputs, 1 thermocouple, and 1 analog signal. Flexible by design, you can easily incorporate these products into a wider transceiver or gateway network. Pre-configured for ease of installation, these transmitters and receivers are DIN rail mounted and mains powered, but each can also be purchased individually.



# Application 3

Imagine that you need to monitor pressure fluctuations at quarter-mile intervals along a few hundred miles of pipeline with the ability to shut down any segment of the line should a sudden spike or drop in pressure indicate a potentially hazardous situation.

## Old Way:

Devote several people to exclusively monitor segments of the line, or make the significant investment in sensors which must be hardwired for hundreds of miles.

## New Way:

Install Cooper Crouse-Hinds transmitters and gateways to monitor the entire line with just a single glance in the control room and without the expense of a hard-wired solution.

## Benefit:

Considerably reduce your infrastructure investment. Increase control while decreasing expenses.

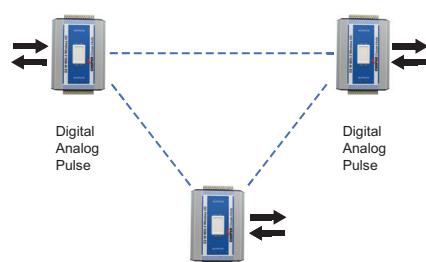


## Two-Way Communication

- Wirelessly connect a large number of signals of a process plant to control systems and/or monitoring stations
- Wirelessly connect sensors/instrumentation/process signals (in pump stations, sub-stations, pipeline regulator stations, etc.) to a simple remote terminal unit (RTU)

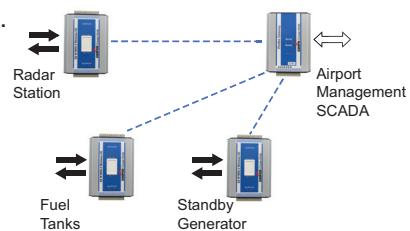
### Transceivers

Made up of a transmitter and receiver, transceivers can receive input and send output signals, for monitoring transducers and other sensors and for controlling industrial processes. Available with a varying number of inputs and outputs (analog, digital, pulse, thermocouple), depending upon your application's requirements.



### Gateways

These units interface between other Cooper Crouse-Hinds wireless devices and Modbus control systems (found in PLC's, DCS, and SCADA). In addition, they can act as an eight input/output transceiver and feed information into PLC terminal units when available.



# Accessories for Wireless Products

## I/O Expansion Products

### Serial Units

These units enable you to expand the I/O capability of your Cooper Crouse-Hinds transceivers and gateways by serial connection, using a cable. A virtually limitless number of I/O can be added by connecting up to 32 x serial units to a single radio.



## Enclosures

### Explosionproof Enclosures

Use these enclosures to house your wireless components in applications where hazardous gases and vapors are present – like process industries, missile bases or gas manufacturing plants.

Additionally, with NEMA 4, 7, 9 ratings, they are ideal where frequent/heavy rain, spray and humidity are common – like offshore drilling facilities, cooling towers, handling facilities or waste water treatment plants.



### Non-metallic Enclosures

Use these enclosures for NEMA 3, 4, 4X, and 12 applications – typically harsh, wet, dusty and industrial environments requiring a robust design.

## Antennas

Dipole, collinear, Yagi and whip antennas amplify your wireless signal strength and are available in various lengths and ratings to meet all power, range and direction variables.



## Other Accessories

A wide variety of other accessories are also available, including cables, brackets, power supplies, and surge diverters.

For more information, please refer to the Cooper Crouse-Hinds Wireless Catalog or call 1 (866) 764-5454.



# Ordering Guide



Cooper Crouse-Hinds Radios and Accessories	Catalog Number
<b>One-Way Communications</b>	
Wireless Transmitter (900MHz, with weatherproof housing)	D2 W SIO 900
Wireless Transmitter (900MHz)	D2 W LT 900
Wireless Receiver (900MHz)	D2 W LR 900
Wireless Transmitter/Receiver Pair with DG900 1 Antenna	D2 WL P1 900
Wireless Transmitter/Receiver Pair with CFD890EL Antenna	D2 WL P2 900
<b>Two-Way Communications</b>	
Wireless Multiple Input/Output Transceiver (900MHz)	D2 W MIO Series*
Wireless Multiple Input/Output Gateway (900MHz, Modbus)	D2 W GMD 900
<b>Accessories</b>	
Input/Output Serial Expansion	D2 NW SER Series*
Battery Pack	D2 NW BAT 2
PC Serial Cable – DB9 & DB9	CBLSER DB9
PC Serial Cable – DB9 & RJ45	CBLSER RJ45
Division 1 Explosionproof Junction Boxes	EJB or GUB Series*
NEMA 4X GRP Enclosures	FJDS and FXDJ Series*
<b>RG58 Coaxial Cable (24 inches, 33 feet, 66 feet)</b>	
RG58 Coaxial Lead – 24 inches (0.8 m) long	CC900TAIL
Coaxial Extender Kit – 33 feet (10 m) long	CC10 SMA
Coaxial Extender Kit – 66 feet (20 m) long	CC20 SMA
Beldon 7806R Cable – 23.6 inches (0.6 m) long	A 53649A
<b>12, 20, 24 V Power Supplies (Std. or DIN rail mounted)</b>	
12 VDC Power Supply	PS DR3012
20 VDC Power Supply	PS 110 20
24 VDC Power Supply	PS DR3024
<b>Lightning/Power Surge Protectors</b>	
120V / 140V Power Surge Protector	MA15 D 1 SI
240V / 280V Power Surge Protector	MA15 D 2 SI
Lightning Surge Diverter	CSD 900
I/O Signal Surge Diverter	IOP Series*
<b>Antennas</b>	
Division 1 Explosionproof Antenna (2 dB Gain)	D1 NW ANT 1 900
Division 2 Dipole Antenna (2.15 dB Gain)	CFD890EL
Division 2 Collinear Antenna (8 dB Gain)	SG900 6
Division 2 Collinear Antenna (5 dB Gain)	SG900EL
Division 2 Yagi Antenna – 6 Element (11 dB Gain)	YU6 900
Division 2 Yagi Antenna – 16 Element (16 dB Gain)	YU16 900
Division 2 1/4 Wave Whip Antenna (-6 to -2 dB Gain)	WH900 SMA
Division 2 Whip Antenna (-3 dB Gain)	DG900 1
<b>Antenna Brackets</b>	
Collinear U-Bolt Bracket	ANT BR COL KIT
Yagi U-Bolt Bracket	ANT BR YAG KIT

\* For complete ordering information, please call 1 (866) 764-5454 or visit our website at [crouse-hinds.com/WirelessIO/](http://crouse-hinds.com/WirelessIO/).

**For more information:**

If further assistance is required, please contact an authorized Cooper Crouse-Hinds Distributor, Sales Office, or Customer Service Department.

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