# Model 18/18+

Spec Sheet

#### **FEATURES**

#### Model 18

- 8 discrete inputs (senses on/off)
- 8 control outputs

#### Model 18+

- 16 discrete inputs (senses on/off)
- 16 control outputs
- 4 analog inputs (0-5 VDC, 4-20 mA)
- 4 analog outputs (0-5 VDC)

#### **APPLICATIONS**

- Water System Monitoring and Control
- Water Tanks Monitor and Control
- Control and Monitor Remote Lift Stations
- Irrigation Monitoring and Control



- Oil/Gas Refineries and Pipelines
- Food and Chemical Processing
- Industrial Wireless Process Control

#### **REMOTE CONTROL & MONITORING**

#### Say Goodbye to Leased Lines

Control Link is a wireless remote control and monitoring system consisting of two or more Model 18 or 18+ telemetry modules. When connected to conventional or trunking radios, Control Link can replace up to 20 dedicated or leased telephone lines for discrete on/off or analog monitoring and control.

Control Link provides a cost-effective wireless alternative for remote control and monitoring versus leased phone lines or dedicated wireline cable. Optional Models 1512 SentriDial and 1516 SentriVoice can provide voice alarms via phone or radio triggered from Control Link outputs.

Control Link can be configured as a point-to-point system or point-to-multi-point system. Each Control Link is bidirectional, capable of both sending and receiving data. All data transmissions are two-way and require a valid handshake response; if no handshake occurs, a communication failure alarm is generated.

## **OPERATION**

A minimum Control Link system consists of two Model 18s connected to radios and powered by 12 VDC. Control Link #1 monitors inputs for changes and, upon detecting a change, transmits a data packet containing the input change information over the radio. The data packet is received by another radio connected to Control Link #2. Control Link #2 then reproduces the change at the corresponding output. These input and output changes

can be discrete on/off or, in the case of the Control Link Model 18+, analog values that are varying voltages (0-5V) or current (4-20mA). Transmission of analog signals allows remote monitoring of transducers connected to physical parameters like temperature, pressure, power, etc.





## Fast, Accurate Transmissions

Each data transmission has built-in error detection that assures the data will be correct. All transmissions require a handshake or they will be resent.

## Multiple I/O Per Unit

The Model 18+ offers 20 bidirectional channels of discrete and analog I/O. The Model 18 has 8 discrete I/O channels.

## Closed Loop Control

Each Model 18/18+ has both monitoring and control capability and can signal confirmation that a control function was executed.

#### Expandable

Multiple units may be used on the same radio to expand the I/O capability.

### Shares Existing Radio Channels

The Model 18/18+ monitors the channel for other traffic and will send data between other transmissions.

#### Communication Failure Alarm

If a Model 18/18+ is unsuccessful in communicating with another Model 18/18+, it initiates a communication failure alarm

#### Report by Exception

The Model 18/18+ will instantly report a change in state.

## Point to Multi-point

The Model 18/18+ allows multiple remote sites to report to or be controlled by a single Model 18/18+.

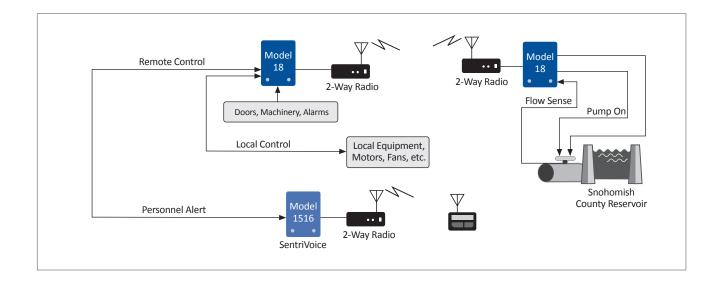
Input/Outputs	Model 18	Model 18+
Discrete Inputs (senses on/off)	8	16
Open Collector Outputs	8	16
Analog Inputs (4-20mA, 0-5VDC)		4
Analog Outputs (0-5VDC)		4

# **Programming**

The Control Link is configured by RS-232 port to allow the user to change parameters such as radio key delay.

#### **Input/Output Constraints**

- 1. Discrete I/O cannot link to analog I/O.
- 2. A single input can only control a single output and vice versa.
- 3. An input on one Control Link may not control an output on the same unit.



#### **SYSTEM CONFIGURATIONS**

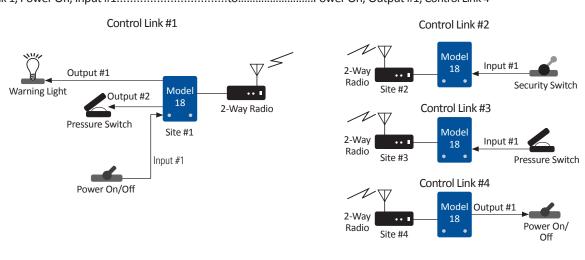
## **Point-to-Point Configuration**

The user programs the units by mapping the inputs to the appropriate outputs.

Control Link 1, Tank Low Level, Input #2......to..........to...............Pump On, Output #2, Control Link 2
Control Link 1, Pump Status Light, Output #1......to...........................Pump Flow Sense, Input #1, Control Link 2

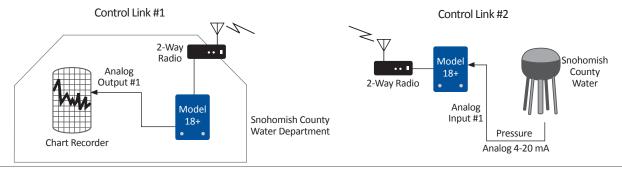
Control Link #1 Control Link #2 Output #1 Input #1 Model Output #2 18 Model Input #2 2-Way Radio 18 High Level Flow Sense 2-Way Radio Pump Off Pump On Output #1 Pump Off Input #1 Low Level Pump On Snohomish Pump County Water Status Snohomish County Reservoir

## Point-to-Multipoint Configuration



# **Analog Point-to-Point Configuration**

Control Link 1, Water Level Value, Output #1......to.............Water Level Value, Input #1, Control Link 2



### Optional Industrial Backplane

Easily integrate the 18/18+ into a metal or plastic NEMA enclosure via the Industrial Panel Kit. This option includes NEMA standard mounting plate, radio mounting hardware, battery with charger circuit or power supply, expanded I/O, and relay mounting area.

#### **SPECIFICATIONS**

**PHYSICAL** 

Power: 13.8VDC nominal, 10.5-16 VDC Current: 75mA typical, 150mA max. @ 16V

Temperature: 0 to +60 degrees C Size: 7.25"W x 10.5"D x 2.25"H

Weight: 2 lb

RADIO INTERFACE

Audio Output: 20mV to 2V P-P (mic level audio), 1K

ohm

Audio Input: 100mV to 4V p-p, 50K ohm.

Channel Busy Input

(COR): Low - 0-.7VDC, <100 ohms. to ground

High - 3.5 to 12 VDC, >10K ohms to

ground

PTT Output

(Push-to-Talk): Relay to ground, 300 mA max, normally

open or closed

**Radio Modem Specifications** 

Data Rate

Signaling: 1200 Baud

Minimum shift keying

**Signal Integrity** 

Required Signal

Strength: 95% success at 12dB SINAD

**RS-232 INTERFACE** 

Baud Rate: 4800
Parity: None
Bits: 8
Stop Bits: 1
I/O SPECIFICATIONS

External Inputs

Contact Closure

Inputs: Model 18: 8 inputs
Model 18+: 16 inputs

Lo<.8 volts
Hi>2 volts

Protected to + 48 VDC

Analog Inputs: Model 18+: 4 inputs

0 to 5 VDC analog sensor with 8-bit A/D input. 20mV/bit, 256 levels.

Protected to + 48VDC

**External Outputs** 

Open Collector

Outputs: Model 18: 8 outputs

Model 18+: 16 outputs, can switch up to

Vcc +1V @ 100mA

Analog Outputs: Model 18+: 4 outputs 0 to 5VDC,

8-bit D/A, 20mV/bit, 256 levels



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