New & Improved Features on PDW Wireless Products

Presenter

Joe Ryan
VP of Sales & Marketing

Joe brings more than 15 years of process industry experience in the design, support, manufacturing, marketing, and sales of process measurement and control devices. Joe has extensive field and support experience with process displays and controls, and a strong technical background including a bachelor's degree in Electromechanical Engineering and a master's degree in Computer & Electrical Engineering.

Agenda and Takeaways

01 Introduce the New Features and Redesign of the PDW Wireless Products

02 Overview of PDW30 Point-to-Point Wireless Bridge and PDW90 Point to Multi-Point Wireless System
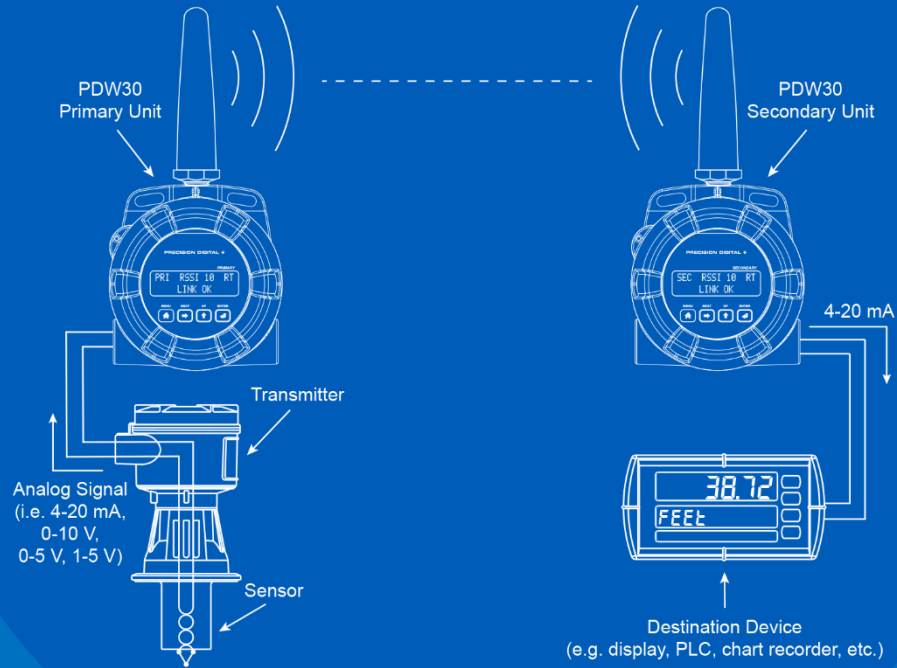
03 See Examples of How the PDW Wireless Products Work in a Variety of Applications

04 Find Out What Products are Needed for Specific PDW Wireless Systems

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PDW30 Point-to-Point Wireless Bridge

PDW30
Primary Unit

PDW30
Secondary Unit

PRI RSSI 10 RT
LINK OK

SEC RSSI 10 RT
LINK OK

4-20 mA

Transmitter

Analog Signal
(i.e. 4-20 mA,
0-10 V,
0-5 V, 1-5 V)

Sensor

38.72

FEEt

Destination Device
(e.g. display, PLC, chart recorder, etc.)

PDW30 Point-to-Point Wireless Bridge

PRECISION DIGITAL WIRELESS

1 MILE OUTDOOR LINE-OF-SIGHT
500 FT INDOOR RANGE

PRI RSSI 10 RT
LINK OK
PRIMARY

SEC RSSI 10 RT
LINK OK
SECONDARY

Features

- Virtually Plug and Play Right out of Box
- Range: 1 Mile Line-of-Sight Outdoor, 500 Feet Indoor
- Wireless Transmission Between Primary and Secondary Unit of
  - 4-20 mA (Separate Signals Going Both Ways)
  - Discrete (4 Digital I/O Signals Going Both Ways)
  - RS-485 Modbus
- Inputs: 4-20 mA or 0-10 V (1), Discrete/Digital (up to 4), Modbus
- Outputs: 4-20 mA (1), Discrete/Digital (up to 4), Relays (2), Modbus
- Isolated RS-485 Modbus Communications
- PDA10 Signal Strength Survey Tool to "Try Before You Buy"
- Configure Using PDW Manager Software and On-Board USB
- Backlit Display Provides Helpful Input & Output Information
- 9-30 VDC Power

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PDW30 Point-to-Point Wireless Bridge

New Features

- Loss of Signal (LoS) Digital Output

- Field Installable Relay Module with Two Form A (SPST) 5A Relays (Available For Both Units)

- CapTouch Through-glass Button Programming

- Larger IP68, NEMA 4X Aluminum & Stainless Steel Enclosures (Plenty of Room for Wiring)

- Operating Temperature Range: -55 To 75°C (-67 To 167°F)

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PDW30 New Features

1 MILE OUTDOOR LINE-OF-SIGHT
500 FT INDOOR RANGE

Built-In Loop for Stainless Steel Tag

Hole for Tamper-Proof Wire & Seal

Locking Screw

32-Character Dual-Line Alphanumeric Dot Matrix LCD with Backlight

Four CapTouch Through-Glass Buttons

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PRIMARY

PRI RSSI 10 RT
LINK OK

MENU   NEXT   UP   ENTER

Primary Unit

Factory Installed Attached Antenna with 3/4" NPT Conduit Connection (Not fully pictured)

Flange for Wall or Pipe Mounting

IP68, NEMA 4X Die-Cast Aluminum & Stainless Steel Enclosures (Both units must be the same metal)

Label to Identify Primary or Secondary Unit

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SECONDARY

SEC RSSI 10 RT
LINK OK

MENU   NEXT   UP   ENTER

Secondary Unit

Two 3/4" NPT Conduit Openings for Wiring

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PDW30 New Features

Old PDW Units…
Smaller Enclosure
and Electronics Module
with Exposed PCB Boards

New PDW Units…
Larger Enclosure
and Fully Enclosed
Electronics Module

- No Exposed Electronics or PCBs
- Antenna Securely Mounted

PDW30 New Features

Easy-to-Install Display Module

- Completely Enclosed Display Module
- No Exposed PCBs
- Easy to Remove for Convenient Wiring

Relays Option Module

- Includes Two Form A (SPST) Relays
- Easily Installs in the Base of the Enclosure with Four Provided Screws
- Removable Connector Plugs for Easy Wiring

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PDW30 New Features

Aluminum or Stainless Steel

- IP68, NEMA 4X Aluminum or SS Enclosure
- Built-In Flange for Pipe Mounting and More
- -55 To 75°C (-67 To 167°F) Operating Temperature

CapTouch Through-Glass Buttons

- Operate without Removing Cover
- For Programming Non-Advanced Features
- Works Under Any Lighting Condition

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PDW30 Wireless Applications

PDW30 Primary Unit

PDW30 Secondary Unit

PRI RSSI 10 RT
LINK OK

SEC RSSI 10 RT
LINK OK

4-20 mA

Transmitter

Analog Signal
(i.e. 4-20 mA,
0-10 V,
0-5 V, 1-5 V)

Sensor

38.72
FEEE

Destination Device
(e.g. display, PLC, chart recorder, etc.)
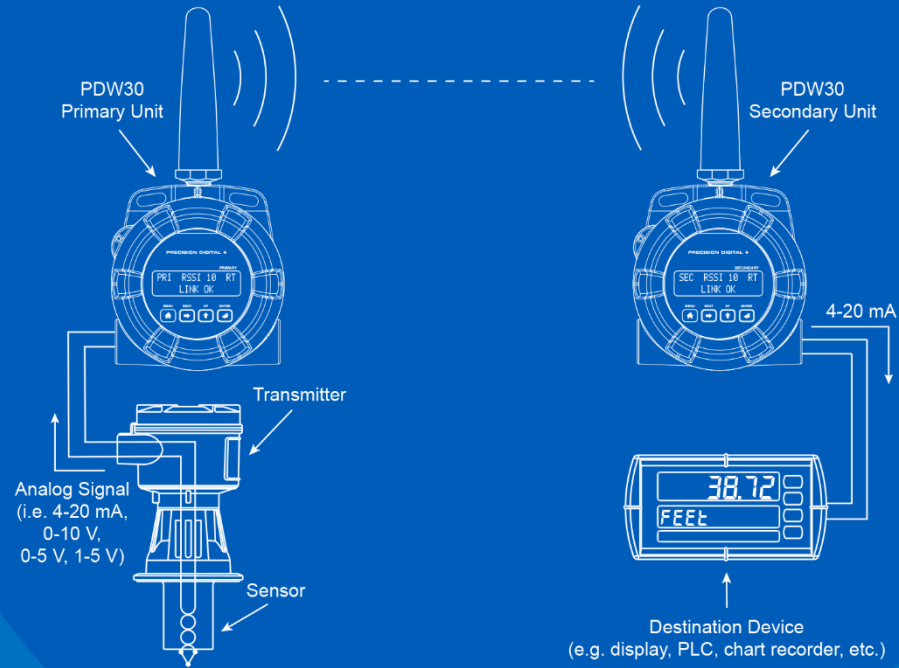
PDW30 Wireless Applications
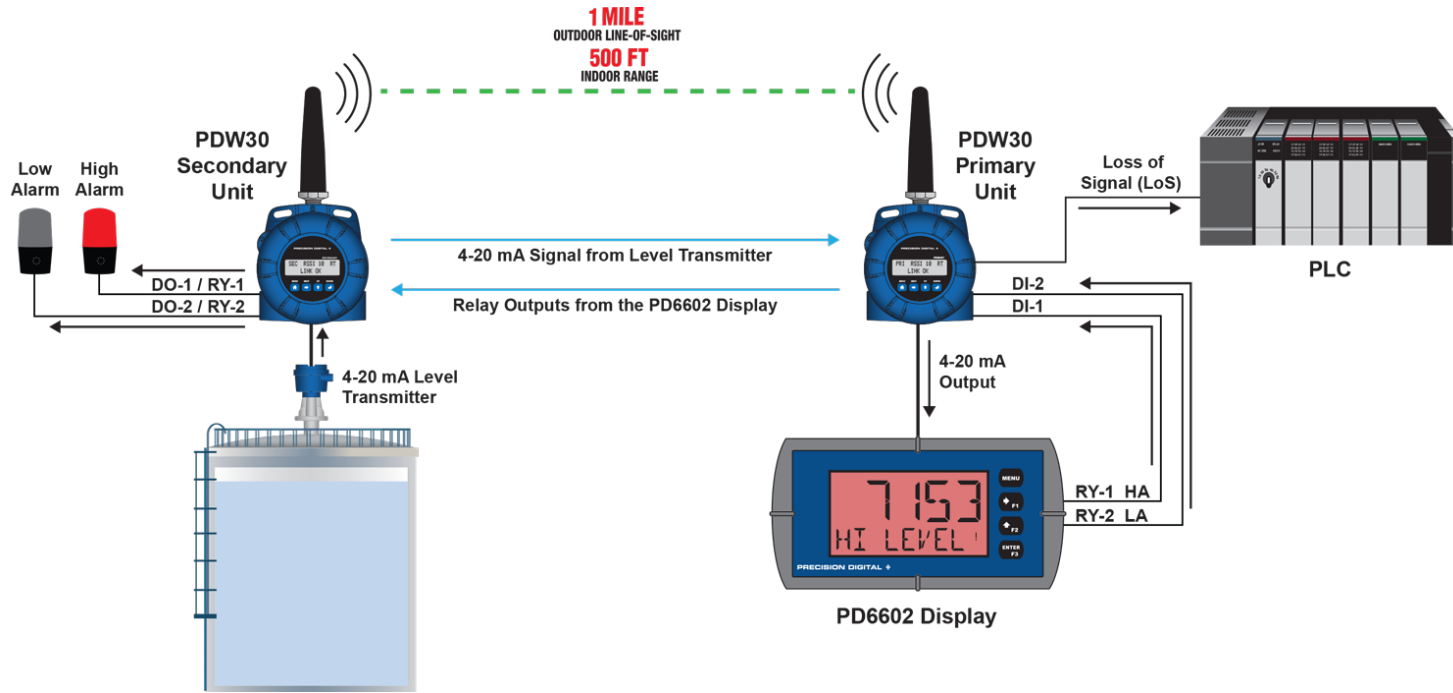
Wireless Tank Level Monitoring

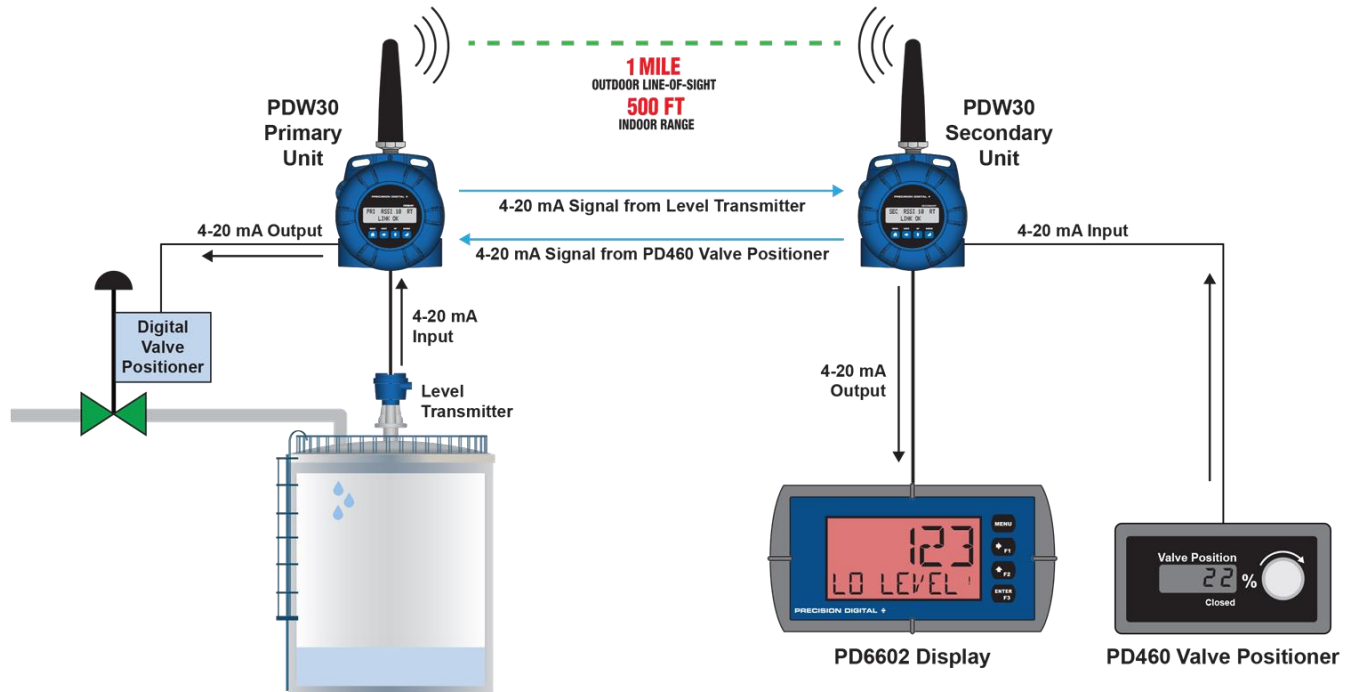# PDW30 Wireless Applications

Parts Needed for This System

PDW30

Model Number	Qty	Description
PDW30-GP-AL-PAIR	1	PDW30 Point-to-Point Wireless Bridge (Primary and Secondary Units), Aluminum Enclosure
PDWM-2RY	1	Relays Option Module, Two Form A (SPST)

Other Products

Model Number	Qty	Description
PDA-LHR	2	Red Light / Horn
PD6602-L2N	1	1/8 DIN Loop-Powered Digital Panel Meter with Two Relays

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Wireless Remote Valve Control

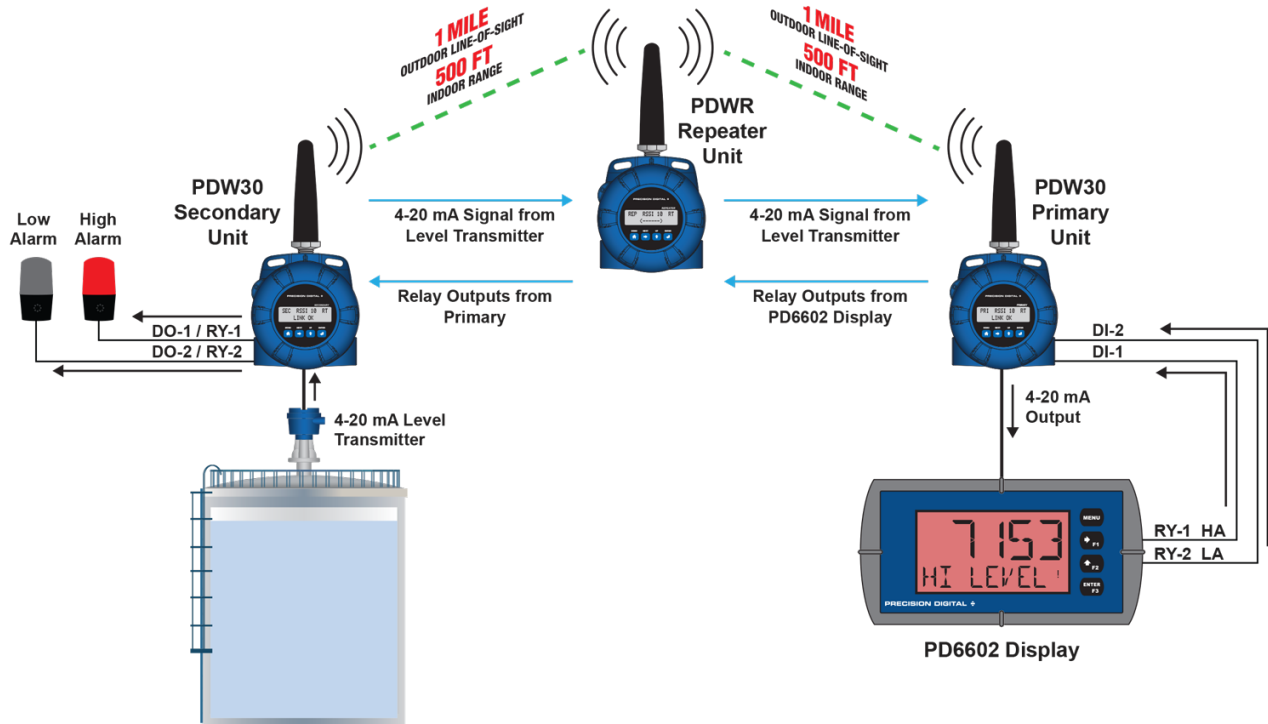# PDW30 Wireless Applications

Parts Needed for This System

PDW30

Model Number	Qty	Description
PDW30-GP-AL-PAIR	1	PDW30 Point-to-Point Wireless Bridge (Primary and Secondary Units), Aluminum Enclosure

Other Products

Model Number	Qty	Description
PDA-LHR	2	Red Light / Horn
PD6602-L2N	1	1/8 DIN Loop-Powered Digital Panel Meter with Two Relays
PD460	1	Panel Mount 4-20 mA Valve Positioner

PDW30 Wireless Applications

Extending Signal Range with PDWR Repeaters

# PDW30 Wireless Applications

Parts Needed for This System

PDW30

Model Number	Qty	Description
PDW30-GP-AL-PAIR	1	PDW30 Point-to-Point Wireless Bridge (Primary and Secondary Units), Aluminum Enclosure
PDWR-GP-AL-REP	1	PDWR Repeater to Extend Wireless Distance, Aluminum Enclosure
PDWM-2RY	1	Relays Option Module, Two Form A (SPST)

Other Products

Model Number	Qty	Description
PDA-LHR	2	Red Light / Horn
PD6602-L2N	1	1/8 DIN Loop-Powered Digital Panel Meter with Two Relays

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PDW90 Point to Multi-Point Wireless System
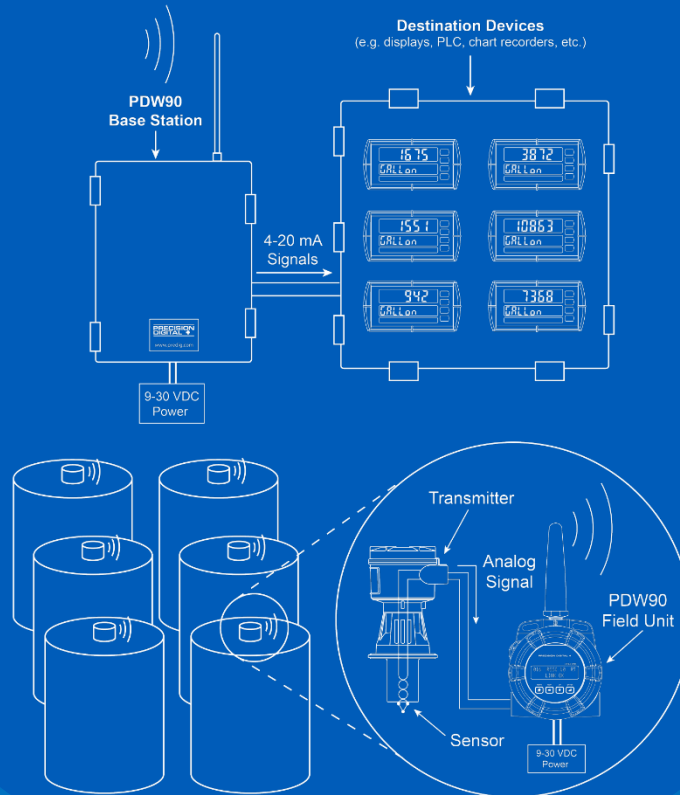
PDW90 Point to Multi-Point Wireless System

Features

- System Consisting of Wireless Base Station & Field Units
- Range: 1 Mile Line-of-Sight Outdoor, 500 Feet Indoor
- Wireless Transmission Between Base Station and Field Unit of
    - 4-20 mA (Separate Signals Going Both Ways)
    - Discrete (4 Digital I/O Signals Going Both Ways)
    - RS-485 Modbus
- Inputs: 4-20 mA or 0-10 V (1), Discrete/Digital (up to 4), Modbus
- Outputs: 4-20 mA (1), Discrete/Digital (up to 4), Relays (2), Modbus
- Base Station I/O Modules for 4-20 mA Inputs, 4-20 mA Outputs, Relay Outputs, Digital I/O
- PDA10 Signal Strength Survey Tool to "Try Before You Buy"
- PDW Manager Software and On-Board USB
- PCBs are Conformal Coated for Dust & Humidity Protection
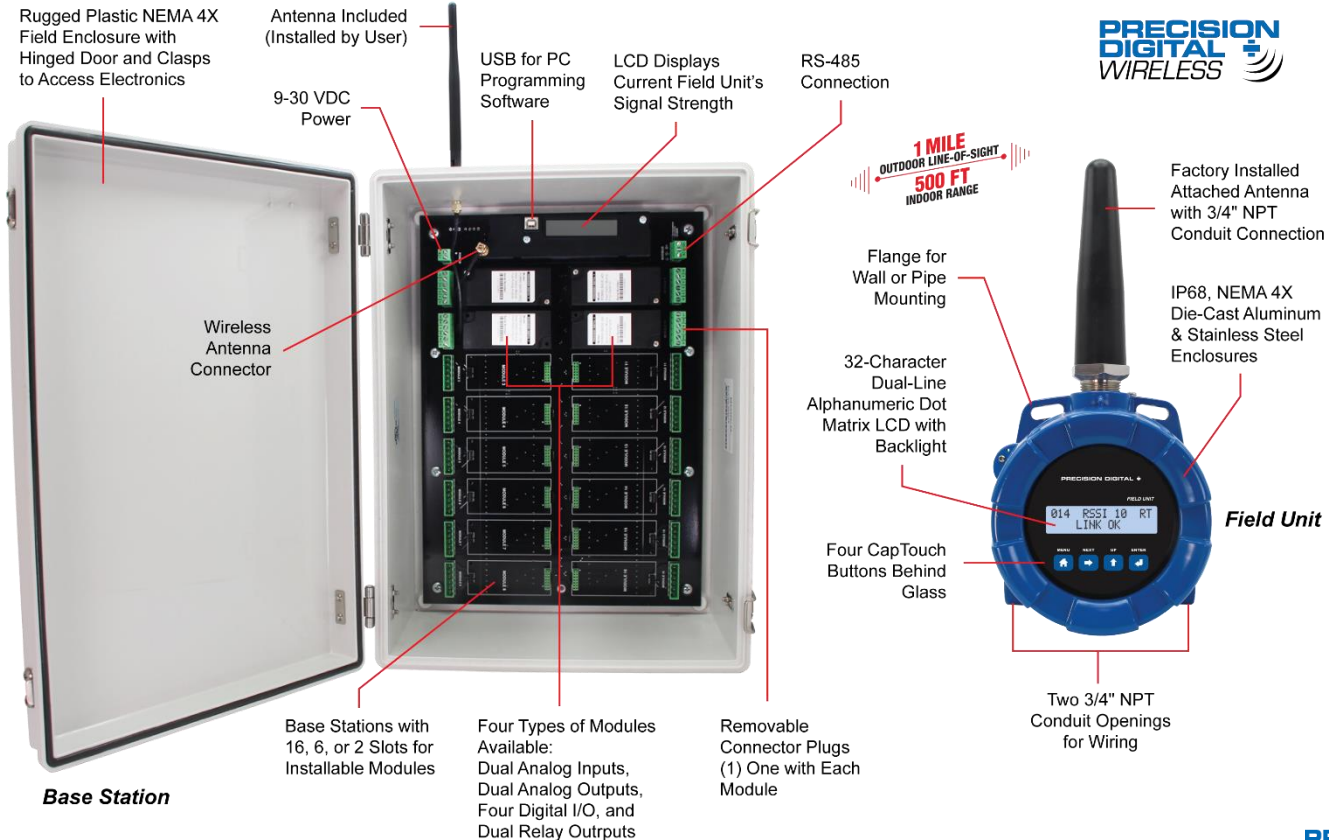- Power 9-30 VDC, Base Station and Field Units

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PDW90 Point to Multi-Point Wireless System

1 MILE OUTDOOR LINE-OF-SIGHT
500 FT INDOOR RANGE

New Features

- Signal Wire Replacement for Up to 32 4-20 mA Signals

- Base Stations For 2, 6, or 16 Field Installable I/O Modules & Modbus

- Loss of Signal (LoS) Digital Output

- Field Units Available In NEMA 4X Aluminum & Stainless Steel

- Field Unit Operating Temperature Range: -55 To 75°C (-67 To 167°F)

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PDW90 New Features

Rugged Plastic NEMA 4X Field Enclosure with Hinged Door and Clasps to Access Electronics

Antenna Included (Installed by User)

USB for PC Programming Software

LCD Displays Current Field Unit's Signal Strength

RS-485 Connection

PRECISION DIGITAL WIRELESS

9-30 VDC Power

Wireless Antenna Connector

1 MILE OUTDOOR LINE-OF-SIGHT
500 FT INDOOR RANGE

Factory Installed Attached Antenna with 3/4" NPT Conduit Connection

Flange for Wall or Pipe Mounting

IP68, NEMA 4X Die-Cast Aluminum & Stainless Steel Enclosures

32-Character Dual-Line Alphanumeric Dot Matrix LCD with Backlight

Four CapTouch Buttons Behind Glass

Field Unit

Base Stations with 16, 6, or 2 Slots for Installable Modules

Four Types of Modules Available:
Dual Analog Inputs,
Dual Analog Outputs,
Four Digital I/O, and
Dual Relay Outrputs

Removable Connector Plugs (1) One with Each Module

Two 3/4" NPT Conduit Openings for Wiring

Base Station

PRECISION DIGITAL

PDW90 New Features

Plastic NEMA 4X Base Stations Available in Three Sizes

- Three Sizes of NEMA 4X Plastic Enclosures
- Hinged Door or Cover Provides Easy Access for Wiring
- Holds up to 2, 6, or 16 I/O Modules

Field Units Available in Aluminum or Stainless Steel

- IP68, NEMA 4X Aluminum or SS Enclosure
- Built-In Flange for Pipe Mounting and More
- -55 To 75°C (-67 To 167°F) Operating Temperature

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PDW90 New Features

PDW Manager Programming Software Connected to Base Station

- PDW Manager Software is Required to Program the Base Station
- PC Connects to the Base Station Via USB

Field Unit CapTouch Through-Glass Buttons

- Operate Without Removing Cover
- For Programming Non-Advanced Features
- Works Under Any Lighting Condition

# PDW90 New Features

Easy-To-Install Base Station I/O Modules

- Adds Functionality to the Wireless System
- Easy-To-Install Modules are Completely Enclosed for Protection
- Dual Analog Inputs, Dual Analog Outputs, Four Digital I/O, And Dual Relay Outputs

Field Unit Relays Option Module
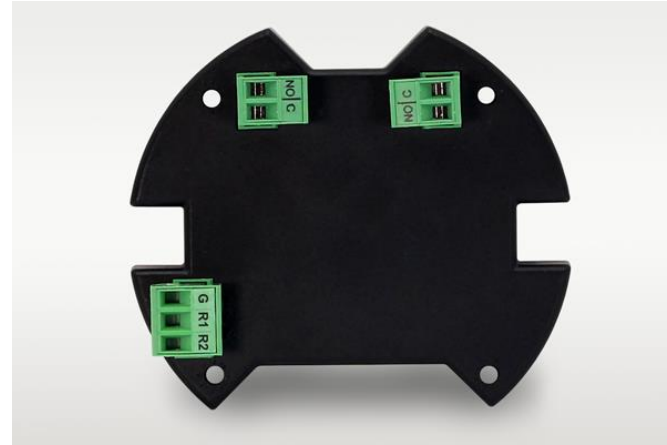
- Includes Two Form A (SPST) Relays
- Easily Installs in the Base of the Enclosure with Four Provided Screws
- Removable Connector Plugs for Easy Wiring

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PDW90 Wireless Applications
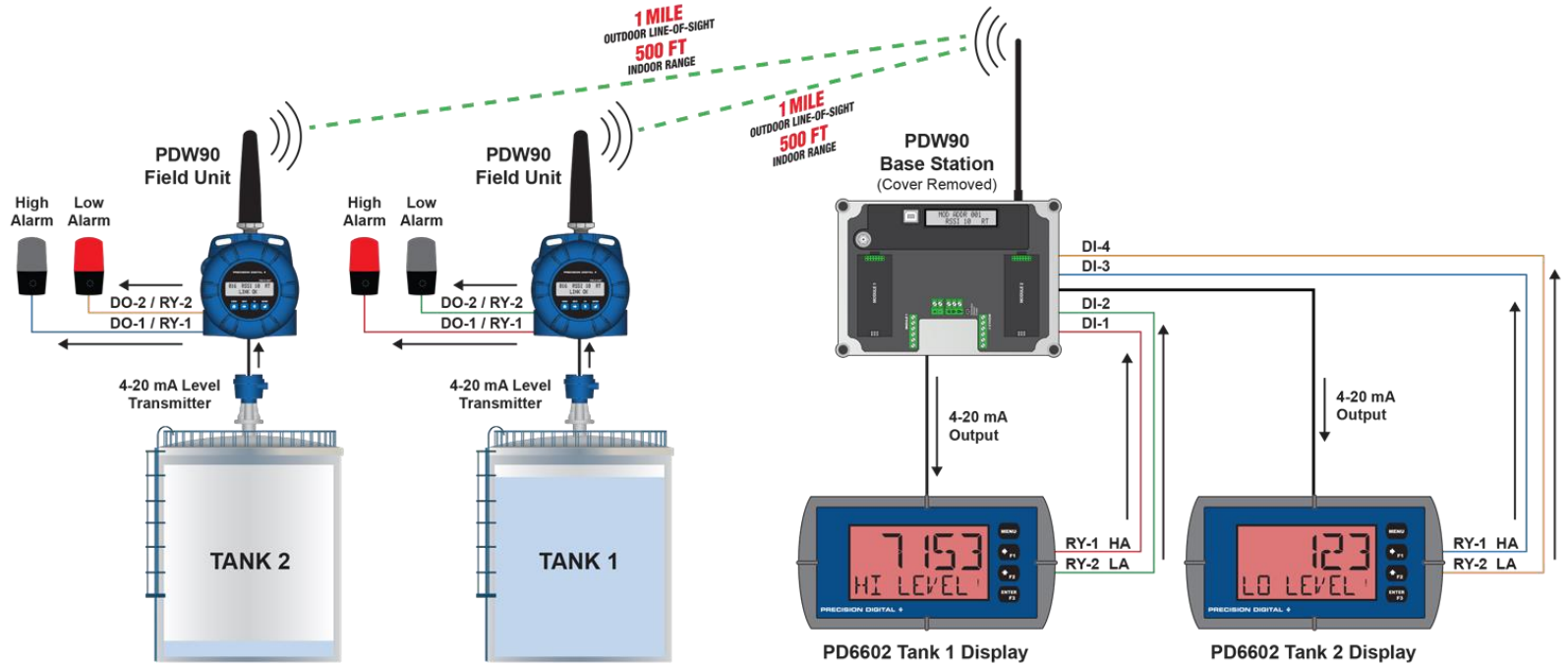
Wireless Tank Level Monitoring of Two Tanks with Field Alarms

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PDW90 Wireless Applications

Parts Needed for This System:

PDW90

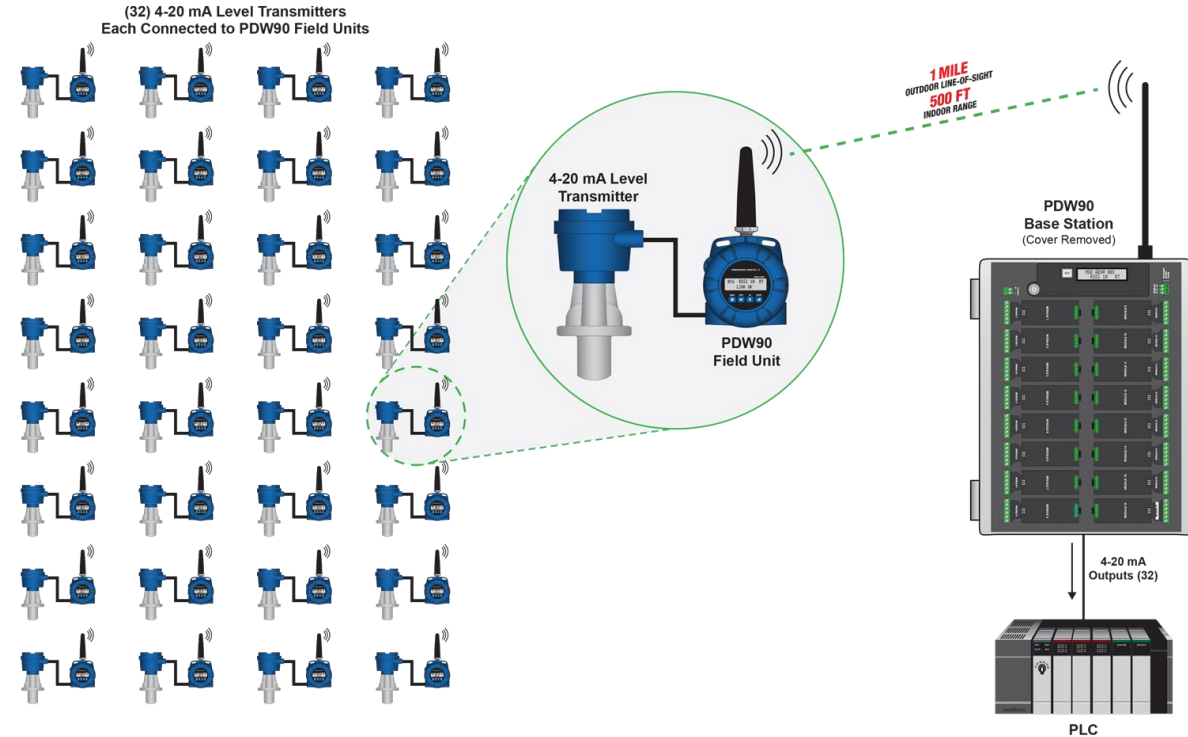| Model Number	Qty	Description
PDW90-GP-PL-BASE-02	1	PDW90 Wireless Process Signal Base Station, (2) I/O Slots
PDWM90-BASE-2AO	1	PDW90 Dual Analog Output Base Station Module
PDWM90-BASE-4DI	1	PDW90 Four Digital I/O Base Station Module

Field Units

Model Number	Qty	Description
PDW90-GP-AL-FIELD	2	PDW90 Wireless Process Signal Field Unit
PDWM-2RY	2	Relays Option Module, Two Form A (SPST)

Other Products

Model Number	Qty	Description
PDA-LHR	4	Red Light / Horn
PD6602-L2N	2	1/8 DIN Loop-Powered Digital Panel Meter with Two Relays

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PDW90 Wireless Applications

**(32) 4-20 mA Level Transmitters
Each Connected to PDW90 Field Units**

4-20 mA Level
Transmitter

PDW90
Field Unit

1 MILE
OUTDOOR LINE-OF-SIGHT
500 FT
INDOOR RANGE

PDW90
Base Station
(Cover Removed)

4-20 mA
Outputs (32)

PLC

Wireless Tank Level Monitoring of 32 4-20 mA Transmitters

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PDW90 Wireless Applications

Parts Needed for This System

PDW90

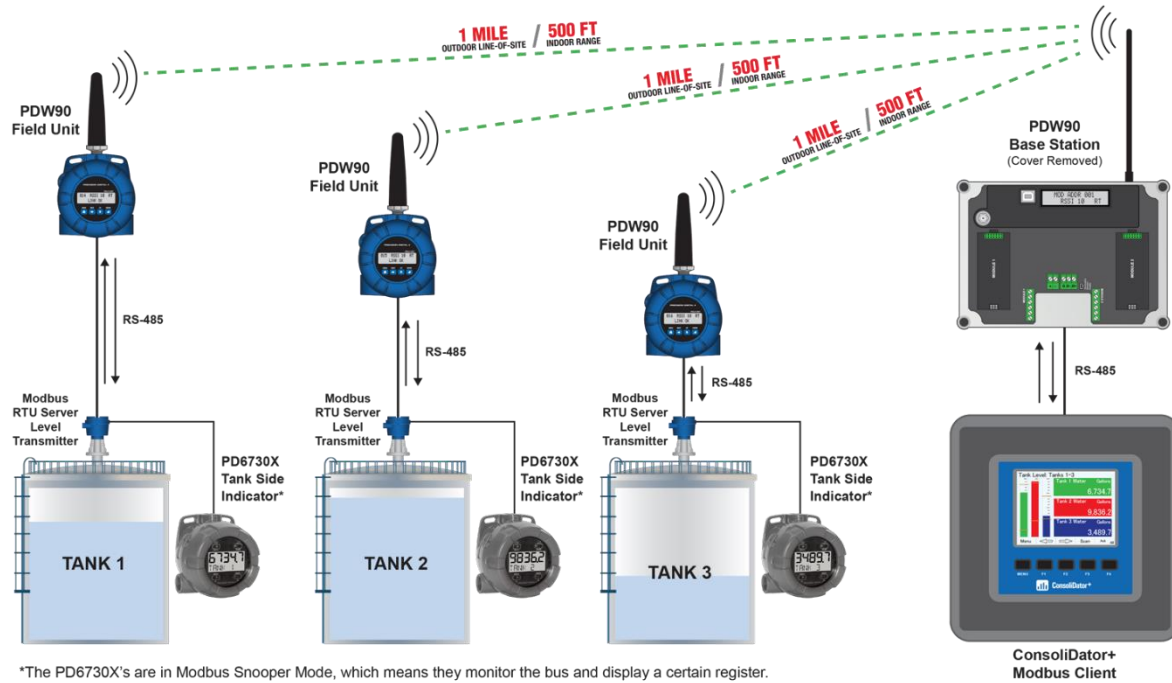| Model Number	Qty	Description
PDW90-GP-PL-BASE-16	1	PDW90 Wireless Process Signal Base Station, (16) I/O Slots
PDWM90-BASE-2AO	16	PDW90 Dual Analog Output Base Station Module

Field Units

Model Number	Qty	Description
PDW90-GP-AL-FIELD	32	PDW90 Wireless Process Signal Field Unit

PDW90 Wireless Modbus Applications
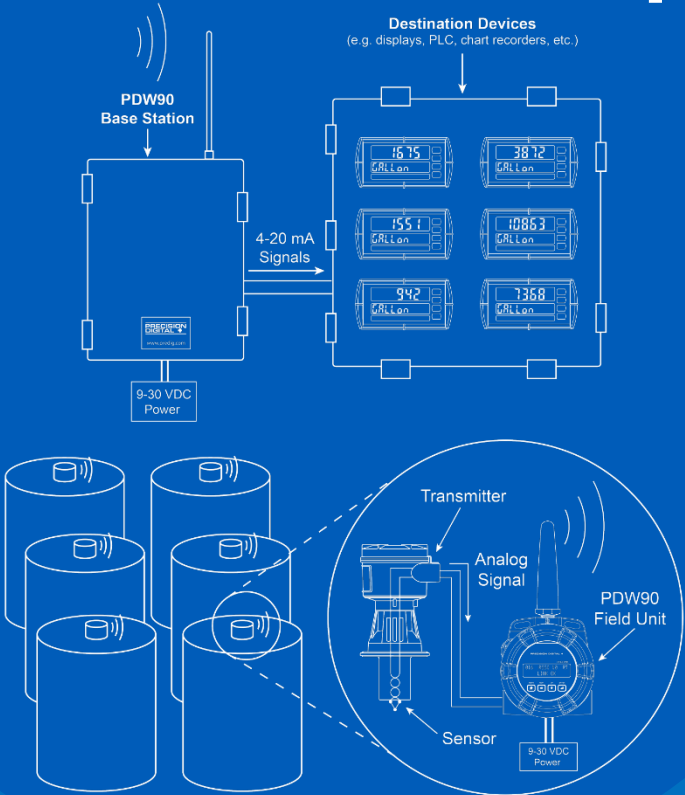
PDW90 Wireless Modbus Applications

Wireless Transmission of Modbus and Outputs

PDW90 Wireless Modbus Applications

Parts Needed for This System:

PDW90

Model Number	Qty	Description
PDW90-GP-PL-BASE-02	1	PDW90 Wireless Process Signal Base Station, (2) I/O Slots

Field Units

Model Number	Qty	Description
PDW90-GP-AL-FIELD	3	PDW90 Wireless Process Signal Field Unit

Other Products

Model Number	Qty	Description
PD9000-GP	1	ConsoliDator+ Multivariable Controller
PD9000-M1	1	Add-On Feature: ConsoliDator+ Modbus Client/Snooper/Spoofer
PD6730-AX0-I-2	3	General Purpose Modbus Scanner for Tank Side Level Indication

PDW90 Wireless Modbus Applications

(32) Modbus RTU Server Level Transmitters
Each Connected to PDW90 Field Units

1 MILE OUTDOOR LINE-OF-SIGHT
500 FT INDOOR RANGE

Modbus RTU Server
Level Transmitter

PDW90
Field Unit

PDW90
Base Station
(Cover Removed)

RS-485

ConsoliDator+
Modbus Client
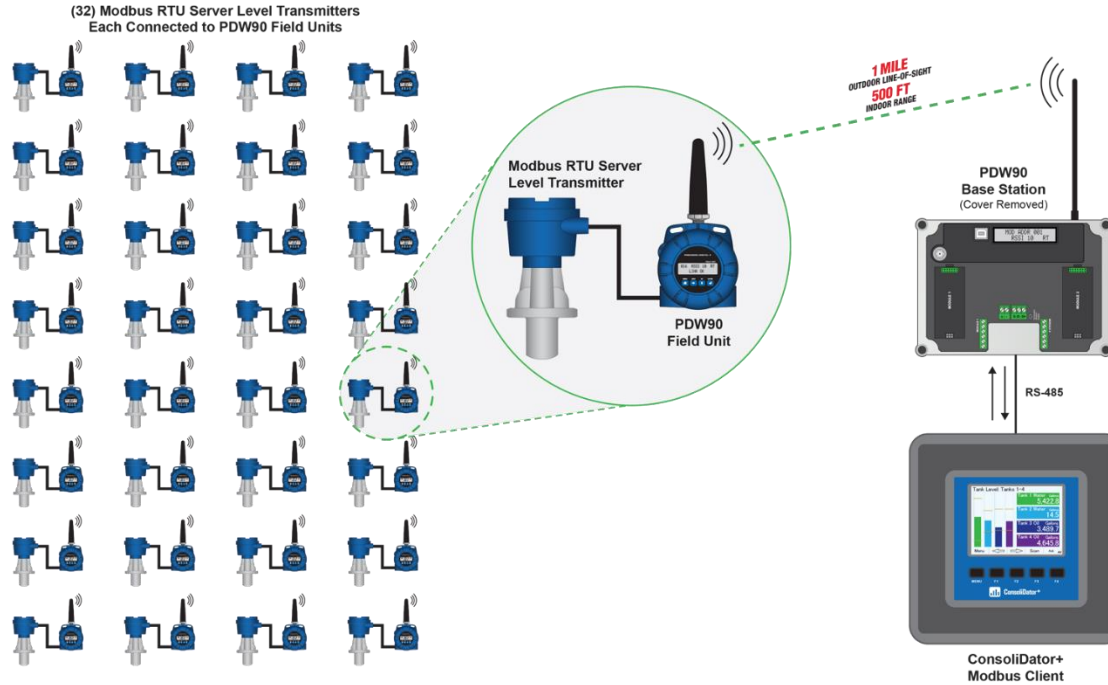
Wireless Tank Level Monitoring of Modbus RTU Server Transmitters

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PDW90 Wireless Modbus Applications

Parts Needed for This System:

PDW90

Model Number	Qty	Description
PDW90-GP-PL-BASE-02	1	PDW90 Wireless Process Signal Base Station, (2) I/O Slots (None being used in this application)

Field Units

Model Number	Qty	Description
PDW90-GP-AL-FIELD	32	PDW90 Wireless Process Signal Field Unit

Other Products

Model Number	Qty	Description
PD9000-GP	1	ConsoliDator+ Multivariable Controller
PD9000-M1	1	Add-On Feature: ConsoliDator+ Modbus Client/Snooper/Spoofer

Municipal Wastewater Plant PDW 90 System Example

- 8 desired 4-20 mA signals to bring back to the central building.

- Two different directions from central building.

- 4-20 mA transmitters at sedimentation tanks, digesters, and chemical storage buildings.

- Want 4-20 mA at the central building to go into the SCADA system equipment.

- Other wireless systems installed on site, but never got setup properly!

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Real Life Modbus Application using PDW Wireless Products

Installation at Storage Sheds

Installation by Sedimentation Tanks

- Rugged field units mount directly at the transmitter site.

- Each independently ranged to the base station, so can be anywhere related to the base station, within range.

- Antennas mounted high, with LOS to the base station antenna.

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Real Life Modbus Application using PDW Wireless Products

Small and Easy to Mount Anywhere

24VDC Power Located Everywhere

- 24 VDC easily sources at the plant
- Convenient field enclosure for easy mounting.
- Standard antennas supplied mounted to the field units.
- Now available in stainless steel for salt water or harsh chemical environments.

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Real Life Modbus Application using PDW Wireless Products

PDW Base Station with Remote,
External-to-Building Antenna

4-20 mA Signals Come Out of the Base Station,
Ideal for Existing SCADA Systems

- Installation so successful, going to be expanded to include digesters!

- Entire installation roughly $1,000 per point.

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PDW Wireless Product Accessories

PDWR Wireless Signal Repeater

Key Features

- Improves Signal Strength and Range for PDW Wireless Systems

- Use in PDW30 Point to Point and PDW90 Point to Multi-Point Wireless Systems

- Increase Range an Additional 1 Mile Line-of-Sight, 500 Feet Indoor

- Increases Range of the Analog, Digital I/O and Modbus Signals

- Use CapTouch Through-Glass Buttons to Change Network ID

- Available in Aluminum or Stainless Steel

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PDW Wireless Product Accessories

PDWA6963-SS Wireless Pipe Mounting Kit

Key Features

- Mounts PDW Wireless Field Units to 1.5" or 2" Pipes

- Suitable for Horizontal or Vertical Pipes (Two kits needed for horizontal mounting)

- All Necessary Hardware Provided

- 316 Stainless Steel

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PDWM-2RY Relays Option Module

Key Features

- Available for PDW30 Primary/Secondary Units, PDW30 Field Units, and PDWR Repeater Units
- Includes Two Form A (SPST) Relays
- Easily Installs in the Base of the Enclosure with the Four Provided Screws

**PRECISION DIGITAL**

PDW Wireless Product Accessories

PDA10 Wireless Surveying Tool Kit

Key Features

- Great for Testing Signal Strength at Desired Location Before Installing

- 1 Mile Outdoor Line-of-sight, 500 Feet Indoors Range

- Convenient, Portable Handheld Unit and Target Unit

- 32-Character Dual-Line Alphanumeric Dot Matrix LCD with Backlight

- Buttons for Cycling Through Network IDs, Repeaters, and Field Units

PDW Wireless Product Accessories
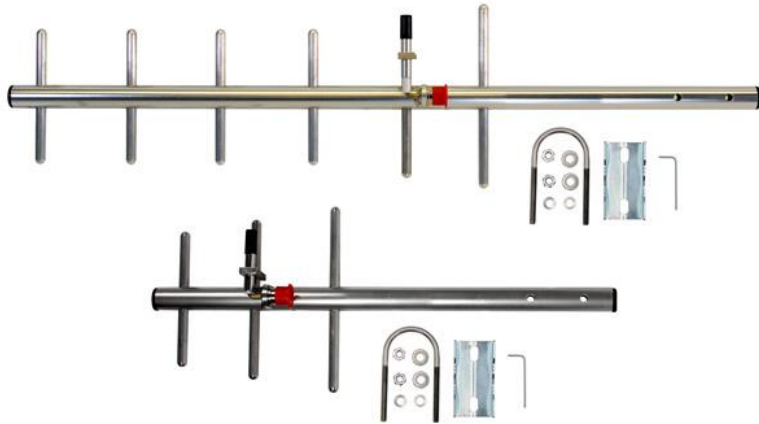
PDWA3900 Yagi High-Gain Directional Antenna

Key Features

- Antennas are Fully Assembled
- All radial elements are secured to the boom with stainless steel hardware to prevent corrosion
- Tuned on a network analyzer for best power match and lowest VSWR
- All antennas ship complete with a mounting kit that includes stainless steel hardware

PDW Wireless Product Accessories
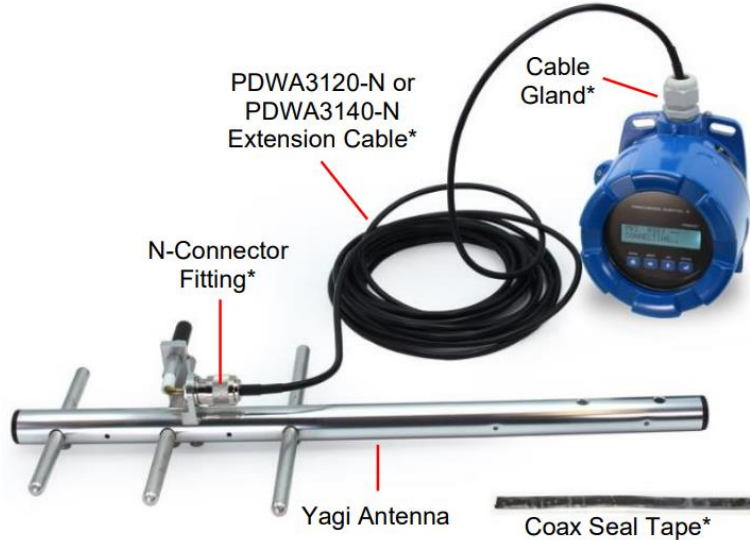
PDWA3100 Antenna Extension Cables
(Yagi antenna and PDW unit sold separately)

Key Features

- Extend distance between PDW30 or PDW90 wireless unit and Yagi antenna

- Available in 20-foot or 40-foot lengths

- Includes antenna coupler, extension cable, coax seal tape, and 3/4" NPT cable gland

PDW Wireless Product Accessories

PDWM Base Station Modules

Key Features

- Completely enclosed modules are easy to Install

- Adds functionality to the PDW90 wireless system

- Can utilize up to 16 modules in PDW90 base station

- Dual analog inputs module

- Dual analog outputs module

- Four digital I/O module

- Dual relays module

Questions?

If you have any questions, then reach out to us.

Joe Ryan
VP of Sales & Marketing

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