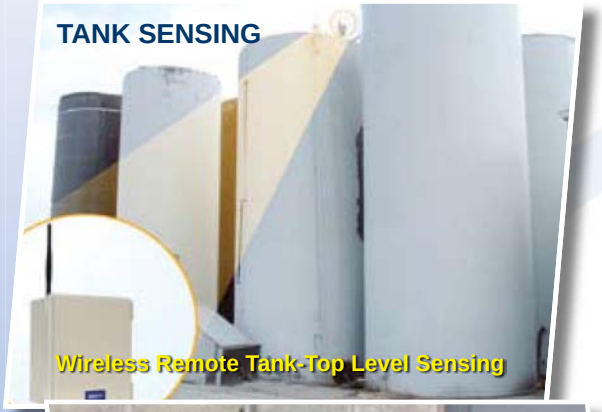
CONSOLIDATOR® WIRELESS SYSTEMS

Simplified information where and how you want it.

TANK SENSING



Wireless Remote Tank-Top Level Sensing

LOCAL DISPLAY

Wireless ConsoliDator Strategically Mounted

SERIAL COMMUNICATION

Wireless Radio Modem (top-left) in use with Free ConsoliDator Software

RETRANSMISSION

Remote Display via Retransmission Signal

ConsoliDator®

- **Remote Monitoring & Alarming**
- **Reduces Installation Costs**
- **Reduces Remote Reading Costs**
- **Monitor Up to Eight Signals**
- **Up to 1200 feet Indoors, 5 Miles Outdoors**
- **Monitor & Datalog in Remote Office**
- **Multi-Use of Data**
- **Pre-Wired Sub-Panel**
- **Preprogrammed Wireless Modules**

PRECISION DIGITAL CORPORATION

PRECISION DIGITAL

www.predig.com

WIRELESS ADVANTAGES

More Tools in Your Toolbox

Wireless technology provides a wider range of options for solving application problems. If you need to get a signal across a road or highway, or through a concrete wall, or atop a very tall building, wireless is a very practical solution.

Money Saving

If you've had to run a network of wires overhead, underground, through walls, or under floors you know how expensive this can be. Hard wiring can cost $10 to $80 per foot. Even higher in some cases. There are numerous other costs associated with hard wiring such as towers, trenching, paving, cabling, conduit, permits, and delays. So whether considering a new application, or retrofitting an old, a Wireless ConsoliDator solution can save you thousands of dollars.

Wider Use of Data

With the use of wireless technology, valuable but previously inaccessible process data can be distributed, presented, and shared wirelessly throughout the plant and/or office. With the ConsoliDator, its free software, or its PV retransmission capability, alarms and information can be disseminated to more locations, shortening reaction times. With the ConsoliDator's serial port wirelessly connected to a remote computer, the free PC software displays bargraphs, recent history graphs, logged data, and more. Thus providing more insight into the process before anything goes wrong.

Reduce Remote Data Reading Costs

Reduce data reading routes with a wireless ConsoliDator system. Data read from new or existing sensors can be brought to a logical & convenient monitoring point using wireless technology. Various displays on the ConsoliDator make the information easier to read. The free PC based software included with every Consolidator has numerous display screens & functions (i.e. data logger and recent history graph) that are great archiving and troubleshooting tools.

WHAT IS BEING MADE WIRELESS?

Our wireless systems are capable of making three different interfaces wireless. By using different installed modules, the following inputs and outputs can be made wireless.

- Analog inputs (PVs)
- Analog outputs (Retransmission)
- Modbus serial communication port

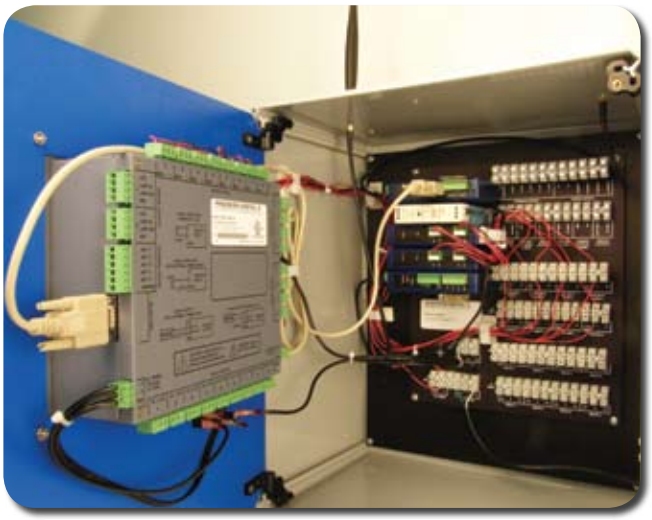
The analog signals are converted to digital in order to be communicated wirelessly via a reliable 900 MHz band radio transceiver. These signals are then converted back to an analog form (4-20 mA) at the other end.
The serial communication data to/from the ConsoliDator is sent/received via a Modbus compatible wireless serial modem. The other end of the communications link has another wireless serial modem which can connect to any Modbus master device (i.e. computer, PLC, DCS, etc.).

PRE-PACKAGED SOLUTIONS

The ConsoliDator PD941 (4 channel) or PD981 (8 channel) wireless packages can be ordered with just the wireless interfaces you need. Individual or a combined wireless interfaces are available, and include: wireless analog inputs, wireless analog outputs, and wireless Modbus serial communications, and free configuration, monitoring, and datalogging software.

Wired and Ready

You don't need to be a engineer to install a wireless ConsoliDator system. We did all the homework. We matched the best combination of sub-panel modules to fulfill the application. When you get your wireless Consolidator, the wireless modules are already mounted, and their wires are connected to the internal sub-panel. Everything is clearly marked, making it a simple matter to make the final connections. You can decide where to mount the antennas.



A look inside a wireless ConsoliDator

Other packages, such as the receiving end of the ConsoliDator's retransmitted 4-20 mA outputs, can be as simple as the package shown below. Precision Digital has made it easy for you to go wireless.

DIGITAL PV MODBUS INPUTS

Stay digital all the way. A ConsoliDator feature that is a good match for wireless is the ConsoliDator's ability as a Modbus slave to accept digital PV inputs in place of some, or all, of the analog PV inputs. This is a standard feature of the ConsoliDator and uses the built-in RS-232 port.

PRE-PROGRAMMED

Some wireless systems are networked, and require a gateway & programming. Our wireless devices are simpler and can be thought of as just wire replacements. Precision Digital worked out the particulars and presents it as a complete package. While there are parameters you can change depending on your needs, we have pre-programmed the devices so that in most cases you can go-wireless right out of the box. This makes wireless technology available without the technical complexity. If you do have questions, we are here to help.

RF SIGNAL RELIABILITY

Precision Digital's wireless package provides 50 to100 times the power used in most wireless networks which often emit less than 1 mW of power and operate in the 2.4 GHz band. In addition to the increased power, the 900 MHz band has greater penetrating ability, and uses more sensitive receivers for increased range. However, despite these advantages, when installing wireless systems - logic prevails. Some simple pre-planning will help make your installation be a success on the first try. Please refer to our installation white paper that you will find at www.predig.com.

RF signals are attenuated by signal interference from nearby RF sources, ambient conditions (i.e. rain and snow), and obstacles (temporary of permanent) that are in the path of the RF signal. With a clear line-of-sight (no interference), it is possible to communicate miles apart. On the other hand, if the signal needs to go through many walls and other interference in a building, it may have a range of less than 750 feet. We offer higher gain antennas and signal repeaters if conditions warrant.

At the users discretion, upon loss of the RF signal the system can be configured to sound an internal horn, or power an external alarm/annunciator (user supplied) via an internal alarm relay.

MODEL SELECTION

Use the table below to determine what wireless system is right for your application. To learn more about the ConsoliDator, please visit our web site at www.predig.com. There you can download data sheets for all of our products.

ORDERING INFORMATION

A

4-20 mA Out

B

4-20 mA In

C

Radio Modem

D

Serial Communications

E

4-20 mA

F

4-20 mA + Serial Communications

Model	Description	Contents					
		A	B	C	D	E	F
PDS941W	PD941 with (4) Wireless Analog Inputs		●			●	
PDS941WR	PD941 with (4) Wireless Analog Inputs & Radio Modem		●	●			●
PDS941R	PD941 with Wireless Radio Modem			●	●		
PDS941RET	PD941 with (4) Wireless 4-20 mA Retransmission Outputs	●				●	
PDS941RETR	Same as above, except with Radio Modem	●		●		●	
PDS981W	PD981 with (8) Wireless Analog Inputs		●			●	
PDS981WR	PD981 with (8) Wireless Analog Inputs & Radio Modem		●	●			●
PDS981R	PD981 with Wireless Radio Modem			●	●		

Accessories

PDA2905	6 db Yagi Antenna		PDA2907	Antenna Cable 20ft
PDA2906	9 db Yagi Antenna		PDA2908	Antenna Cable 50ft

CONSOLIDATOR® WIRELESS SYSTEMS

SYSTEM SPECIFICATIONS

The following specifications are for the PDS900 series systems and its component parts. These specification are just for reference; for more detailed features and specifications please refer to the individual system component data sheets and instruction manuals.

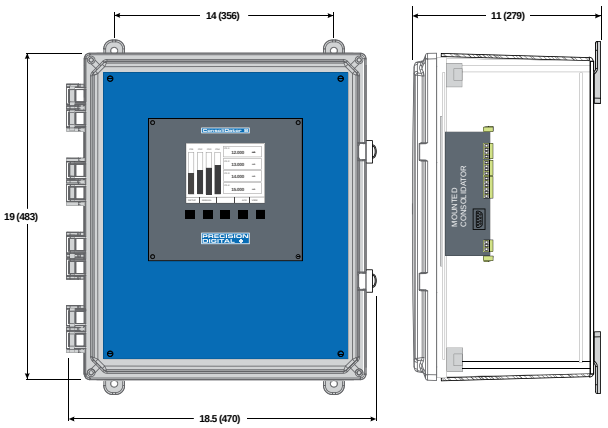
CONSOLIDATOR

Included Model Number: PDS941: PD941-8K9-15
PDS981: PD981-8K9-15

ENCLOSURES

ConsoliDator Enclosure w/PDP2904

Overall Dimensions: 18.5" x 19.0" x 11.0" (W x H x D) (470 mm x 483 mm x 279 mm)
Inside Dimensions: 16.0 x 18.0 x 9.8 (W x H x D) (406 mm x 457 mm x 249 mm)
Material: Enclosure and Cover: Polycarbonate; Front Panel: Painted aluminum; Cover Latches: Stainless Steel
Sub-Panel: Anodized aluminum
Color: Enclosure Light Gray; Cover: Transparent; Front Panel: Blue



Field Enclosure with Sub-Panel

Overall Dimensions: 10.83" x 12.80" x 7.09" (W x H x D) (275 mm x 325 mm x 180 mm)
Inside Dimensions: 10.0" x 12.0" x 5.5" (W x H x D) (255 mm x 305 mm x 140 mm)
Material: Enclosure and Cover: Polycarbonate/ Polyester blend
Sub-Panel: Plastic with mounting grid
Color: Enclosure: Light gray; Cover: Solid
Ratings: IP66, UL508 Type 4X

GENERAL SYSTEM SPECIFICATIONS

Power

ConsoliDator: 90-264 VAC, 47-63 Hz, 20 VAC or 8-30 VDC, 15 W
Wireless Module Power: 10-46 VDC or 24 VAC ±10%, 11.7 W max
24 VDC Power Supply Power In: 85-264 VAC, 120-370 VDC
24 VDC Power Supply Power Out: 24 VDC, 24 W max

Wireless Hardware & Communication

Frequency: 900 MHz ISM Band
RF Output Power: 100 mW (20 db)
Range: 1200 ft. Indoors / 5 miles Outdoors (LOS)
Note: Wireless ranges are difficult to predict without knowledge of antennas, cables, and the environment of the application. PDC recommends testing of wireless environments before installation as well as the following good wireless installation practices per industry standards. Ranges shown are best case scenario, specific application ranges may vary and require additional accessories.
Network ID Number: Selectable 16 to 256; default analog IO module, 16; default serial module, 255 (FF)
Channel Number: Selectable 0 to 6; default analog IO module, 0; default serial module 6.
Peer-to-Peer Address: 1 Master and Slave selectable address from 1 to 255; default 1
Standard Antenna: 3 db rubber duck antenna with rotation and angle joint
Note: Additional high-gain antennas are available. See accessories
Antenna Cable: Antenna cable & jack result in approximately 3 db loss
Total System Analog Input Accuracy: ±0.5% FS ± 1 count typical; ±1.16% FS ± 1 count max
Total System Analog Output Accuracy: ± 0.52% FS ± 0.01 mA typical; ±1.18% FS ±0.01 mA max
Wireless Module Digital Input Voltage Range: 0 to 48 VDC
Wireless Module Low Voltage Digital Input: 0 to 0.8 V max
Wireless Module High Voltage Digital Input: 4.0 V minimum
Wireless Module Digital Output: Sinking, 0 to 48 VDC
ConsoliDator Update Rate: Approximately 4 seconds
Software Update Rate: 5-20 seconds, 10 seconds typical
Operating Temperature: 0 to 50°C
Relative Humidity: 0 to 90% non-condensing

COMPONENT APPROVALS & CERTIFICATIONS

Wireless Device

Approvals: CE compliant, FCC Approved
Certifications: FCC: Part 15 Class A; CISPR (EN55022) Class A; EN61000-6-1, 2, 3, 4, 5, 6, 8, 11

ConsoliDator

Approvals: UL listed product
UL File Number: E160849; 508 Industrial Control Equipment

DC Power Supply

Approvals: UL & C-UL listed, CE compliant
Safety Standards: UL508, TUV EN60950-1 approved, NEC class 2/LPS compliant
EMI Conduction & Radiation: Compliance to EN55011, EN550022 (CISPR22) Class B
Harmonic Current: Compliance to EN61000-3-2, -3
EMS Immunity: Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, ENV55024, EN61000-6-1, EN61204-3 Light industry level, criteria A

ConsoliDator Enclosure

Approvals: Type 1, 2, 3, 3R, 4, 4X, 12 & 12K UL & C-UL listed enclosure
Fuse Holder: UL rating 250 V, 20 A; UL File Number: E14853; CSA rating 250 V, 16 A; CSA File: 47235
Fuse: UL Rating 5 A, 250 V; UL File Number E10480; CSA rating 5 A, 250 V; CSA File 29862
Switch: UL rating 10 A @ 125 VAC, 6 A @ 250 VAC; UL File Number: E121922

Field Enclosure

Approvals: UL rating type 4X; UL File Number E178096

Your Local Distributor is:

Disclaimer

LDSS900_A 06/09

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