



Wireless Field Instruments versus Wired Field Instruments Calculator

Inputs	Editable
Insert the number of wireless instruments.	
Insert the distance between transmitter and existing junction box (meters)	
Insert the distance between the wireless gateway (FDAP or Cisco 1552S AP connected to LAN) and the control room (meters).	

Value	Wired (USD)	Wireless (USD)
Instruments and infrastructure		
Instruments materials		
Installation cost (labor)		
Engineering, Design and Commissioning		
Terminations		N/A
Battery replacement (labor + cost)	N/A	
Total		
% difference of cost		

Assumption:

- The Junction box to control room connection exists already.
- Conduits for wires are available.

Labor Cost	Not Editable
Installation and Commissioning (USD/hr)	\$100
Design & System Configuration (USD/hr)	\$150
Procurement (USD/hr)	\$75
Quality Check (USD/hr)	\$75
Material	
Wired Components (List Price)	USD
Multi pair cable (USD/m)	\$25
Two muti pair cable glands (USD)	\$10
Instrument cable (USD/m)	\$10
Two instrument cable glands (USD)	\$10
Cable tray and accessories (USD/m)	\$75
Junction box and accessories (USD)	\$1,000
Average Wired Transmitter Price (USD)	\$594
Intrinsic barrier (USD)	\$160
Analog input/HART card (USD)	\$141
Installation hours per device (hr/device)	11
Engineering/Design hours per device (hr/device)	6
Termination hours per device (hr/device)	1
Wireless Components (List Price)	USD
Ethernet cable to connect FDAP to Gateway (USD)	\$20
Two Ethernet cable glands (USD)	\$5
Power cable for BBR (USD/m)	\$20
Two power cable glands (USD)	\$5
Average Wireless transmitter Price (USD)	\$2,200
Installation hours per wireless device (hr/device)	1
Engineering/Design (hr/device)	3
FDAP (USD)	\$3,300
Cisco® Aironet® 1552S Access Point (USD)	\$8,700
Honeywell OneWireless Wireless Device Manager (USD)	\$4,000
Power Module (USD)	\$600
Batteries	\$30
Battery Life at 5 sec (years)	5
Life time of a wireless transmitter (years)	30
Battery replacement (hr/device)	0.2