Communication between a Gateway and up to 55 Nodes

K-TEK now offers a low cost way to connect process instrumentation to your control room. Our wireless system consists of a "node" (wireless transmitter) and a gateway (wireless receiver). Each node will accept (2) analog and (2) discrete switch inputs. Each gateway will accept up to 55 nodes, providing an economical answer to many industrial applications. The output from the gateway can be connected to a DCS or SCADA system or can be tied directly to the K-Tek HMI (color display) for a stand alone wireless system.

WT8000
Gateway

WT8000
Node

FEATURES

- **Eliminate** High Cost of Wiring
- Works with All 4 to 20 mA Transmitters
  - Level
  - Pressure
  - Temperature
  - Flow
  - And more...
- Works with Dry Contact Switch Inputs Too
- Line of Sight Ranges Up to 3 Miles with Included Antenna

SPECIFICATIONS

General	
Power	+10 to 30V dc (For European applications: +10 to 24V dc, ± 10%)
Power Consumption	Less than 1.4 W (60 mA) at 24V dc
Mounting	#10 or M5 (M5 hardware included)
M5 fasteners - Max. Tightening Torque	0.56 N•m (5 in•lbf)
Case Material	Polycarbonate
Weight	0.26 kg (0.57 lb.)
Indicators	Two LED, bi-color
Switches	Two Push Buttons
Display	Six Character LCD
External Cable Glands	Four PG-7 type, One 1/2 NPT type
Cable Glands, Max Tightening Torque	0.56 N•m (5 in•lbf)

⚠️ **WARNING . . .** Not To Be Used for Personnel Protection
Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death. These devices do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A device failure or malfunction can cause either an energized or de-energized output condition. Consult your catalog for safety products that meet OSHA, ANSI, and IEC standards for personnel protection.

SPECIFICATIONS (continued)

| Radio	
Range, with standard 2 dB antenna	Up to 4.8 kilometers (3 miles)
Frequency	902 to 928 MHz ISM band or 2.4 GHz
Transmit Power	21 dBm Conducted
Spread Spectrum Technology	FHSS (Frequency Hopping Spread Spectrum)
Antenna Connector	Ext. Reverse Polarity SMA - 50 Ohms
Antenna - Max Tightening Torque	0.45 N•m (4 in•lbf)
Link Timeout	Configurable, up to 2 minutes
Node Inputs	
Discrete Inputs	Two Sourcing
Discrete Inputs Rating	3 mA max current at 30V dc
Discrete Input Sample Rate	62.5 milliseconds
Discrete Input Report Rate	On Change of State
Discrete Input ON Condition	Greater than 8V
Discrete Input OFF Condition	Less than 5V
Analog Inputs	Two, 0 to 20 mA
Analog Input Sample Rate	62.5 milliseconds
Analog Report Rate	1 second or on Change of State (1% change in value)
Accuracy	0.1% of full scale +0.01% per °C
Gateway Outputs	
Discrete Outputs	Two Sourcing
Discrete Output Rating	100 mA max current at 30V dc, ON-State Saturation: Less than 2V at 100 mA, OFF-state Leakage: Less than 10 µA
Discrete Output ON Condition	Supply minus 2V
Discrete Output OFF Condition	Less than 2V
Discrete Output State Following Timeout	De-energized (OFF)
Analog Outputs	Two, 0 to 20 mA
Discrete, Analog Update Rate	62.5 milliseconds
Output State Following Timeout	De-energized (OFF)
Serial Output/Modbus	RTU Out
Environmental	
Environmental Rating	IEC IP67; NEMA 6
Operating Temperature	-40 to +85°C (Electronics); -20 to +80°C (LCD) -40 to +185ºF (Electronics); -4 to +176ºC (LCD)
Operating Humidity	95% max. relative (non-condensing)
Radiated Immunity	10 V/m, 80-2700 MHz (EN61000-6-2)
Shock and Vibration	IEC 68-2-6 and IEC 68-2-7 **Shock:** 30g, 11 millisecond half sine wave, 18 shocks **Vibration:** 0.5 mm p-p, 10-60 Hz
Compliance	
900 MHz Models	FCC ID TGUDX80: This device complies with FCC Part 15, Subpart C, 15.247 IC: 7044A-DX8009 Licensed for use in the United States, Canada, Mexico, Panama, Bahamas and Columbia. CE
2.4 GHz Models	FCC ID UE300DX80-2400: This device complies with FCC Part 15, Subpart C, 15.247 ETSI/EN: In accordance with EN 300 328: V1.7.1 (2006-05) IC: 7044A-DX8024 Open frequency operation in all other countries but the United States and Canada. CE

DESCRIPTION
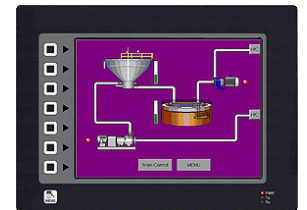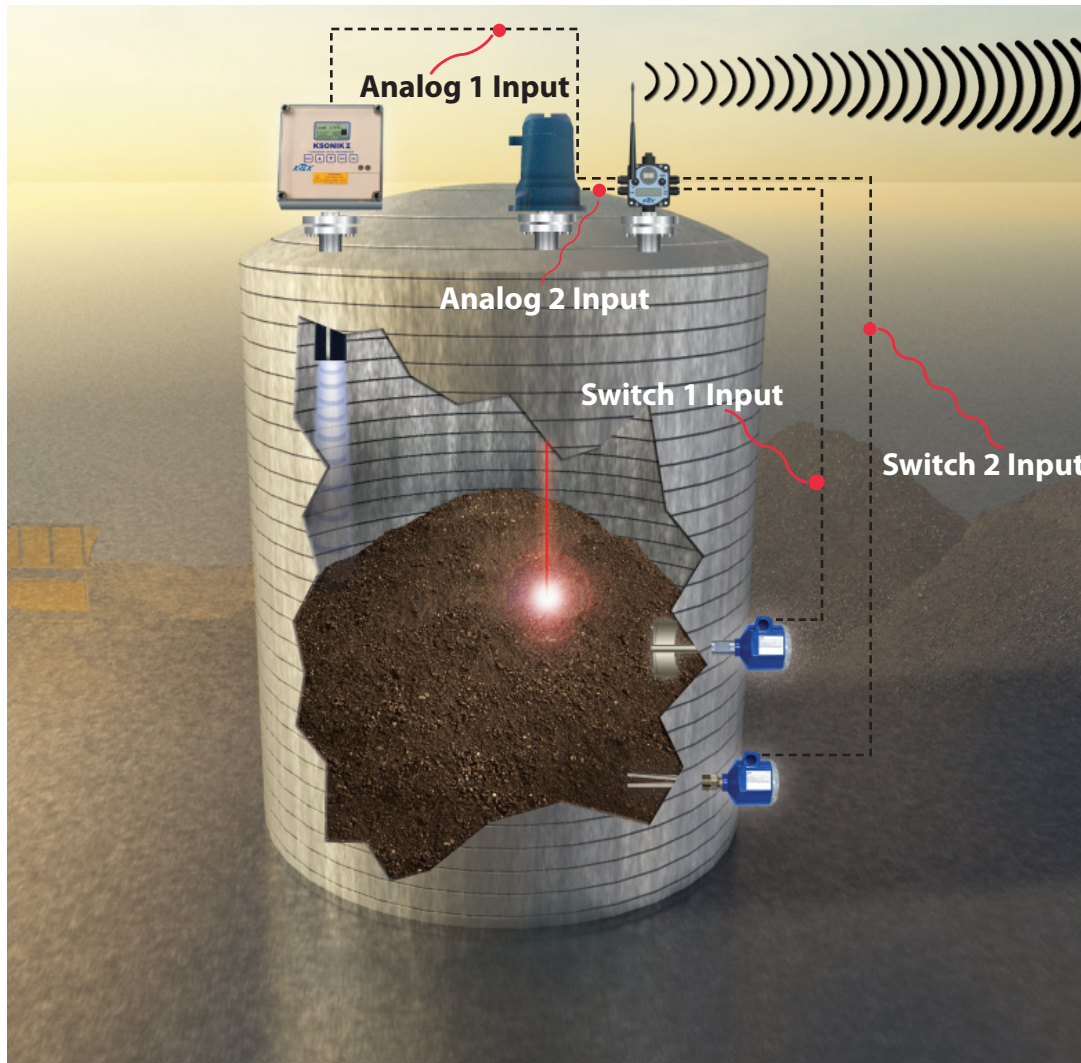
ORDERING INFORMATION

WT8000/a/b/c/:		
/a	Transmitter and Receiver	
	A	Node Transmitter
	G	Gateway Receiver
/b	Frequency	
	900	900 MHz
	2.4	2.4 GHz
/c	Output	
	M	Modbus RTU Output
	A	Analog Hardwire Output

FAQS FOR THE K-TEK WT8000 WIRELESS SYSTEM

1. How far will it trasmit/communicate?
   - In terms of radio power, you can position the 900 MHz product as having 150 mW, which allows us to call out a 3 mile line of sight range. You can position the 2.4 GHz prouct as having 100 mW, which allows us to call out a 2 mile line of sight range.

2. How many Nodes can I have on one Gateway?
   - You can deploy up to 55 Nodes on a single Gateway.

3. How many sensors can I plug into one Node?
   - The Node is capable of accepting two 4-20ma signals and 2 digital input signals.

4. What protocol does the wireless use to communicate?
   - Our units use a proprietary protocol developed in house to communicate. This enables us to have a high resistance to noise interference.

5. Do I have to put the Node and Gateway in a box (panel)?
   - You don't "have to" put the Node and Gateway in a box, but it is recommended for mechanical protection. The units have an IP67 rating when installed properly.

6. Can the wireless products run off of AC power?
   - No, it is designed to run off 10-30VDC.

7. How fast can it scan the network?
   - This is based on the number of Nodes in the network. The fastest it can scan the network is every 64ms, using 7 Nodes.

8. What happens if I lose communications?
   - You can set up the Node and Gateway to either retain the last value received or you can program them to go to a set value. This is our "Safe Harbor" mode.

9. Can it tell me when I lose communications?
   - Yes, you can program the Gateway to turn an output on when communications are lost.

10. Is there any kind of hazardous rating on the units?
    - Currently there is no hazardous rating on the wireless products. Please let your K-TEK contacts know if it is needed for an application.

11. Can the Nodes function as a repeater?
    - No, the Nodes are designed to strictly communicate their values to the Gateway.

12. Which frequency do I choose?
    - 900 MHz (United States, Canada, Mexico, Panama, Bahamas and Columbia)
    - 2.4 GHz (Rest of the World)