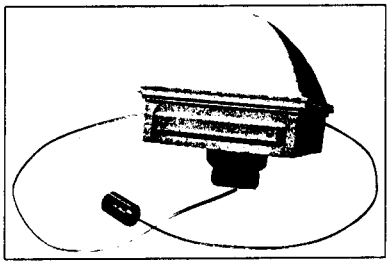
Barton®



TankScan™ W-Series
WL20 Level Monitor

Installation Manual

Version 99L16m
ID#11683
8/2000

The **TankScan Wireless Level System** has four main components: Monitor, Controller, Fill Indicator, and PC Host Software. The **Monitor** consists of an electronics housing and a "waveguide" probe for measuring tank fluid level. The **Controller** includes a Radio/Modem enclosure, an antenna, and an AC power adapter. The **Fill Indicator** assembly includes a local display (to view level during fill), an audible alarm, and the option of relay alarm outputs. The **Software** features, operation, and installation are covered in the software user manual.

System Installation Steps

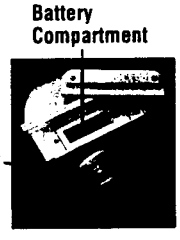
A. Install controller (distance & line-of-sight location predetermined).
B. Install monitor(s) on the tank(s)
C. Install fill indicator(s) at a accessible location near the fill point.
D. Install software on host PC
E. Power up and configure the controller
F. Power up the monitor(s) and overfill unit(s).

Monitor Installation

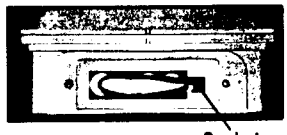
Precautions

A. Ensure the bottom of the probe (weight) does not rest on the bottom of the tank, because the waveguide wire may become slack — resulting in measurement errors.

B. Ensure the probe waveguide wire does not touch anything inside the tank (e.g., riser) — if it does, it could cause false readings.



1. Unpack Monitor assembly (carefully un-wind the probe's waveguide wire/weight), then carefully hand-straighten the wire — making sure not to kink or damage the wire.
2. Install Monitor — screw bottom of monitor into a 1-1/2 or 2 inch female NPT connection — **hand tighten only**.
3. After installing and configuring the TankScan Controller, install Monitor's Battery Pack (included). Remove the Monitor's compartment cover by unscrewing the (2) screws (w/small bladed screwdriver). Insert battery pack into compartment and plug keyed connector into the socket (on right). Finally, position the wires to prevent damage, then reattach the cover.



Specifications

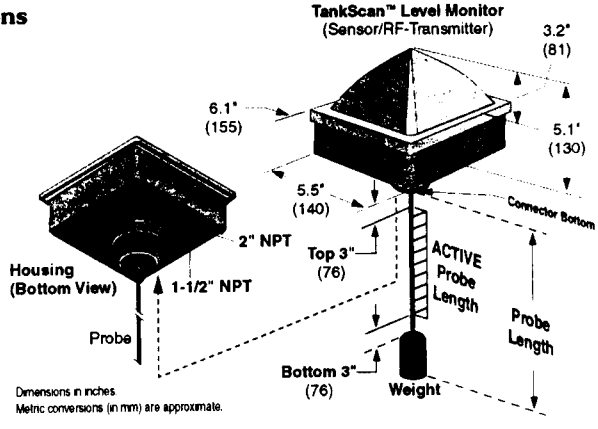
WL20 Level Monitor

Measurement Method	Micropower Impulse Radar (MIR)
Measured Value	Level
Accuracy	±0.25" or 0.5% of **active** probe length (whichever is greater) (1)
Output	Transmits ID, level data, and diagnostics
Radio Communications	Transmits and receives up to 500' (150 m), line-of-sight, in 902-928 MHz band (North America) or 869.7-870 MHz band (Europe)
Operating Temperature	-40°F/°C to +140°F (+60°C)
Power Requirements	Battery Pack [4-AA Alkaline]
Construction	Weatherproof, non-corrosive, NEMA-4/IP65 enclosure
Pressure Rating	15 PSI (1 bar) maximum
Construction Materials	Teflon/Brass or Teflon/SST, Plastic (20% glass filled *Polybutylene Terephthalate* polyester (PBT), and Epoxy
Approvals	Intrinsically Safe; CSA (Class I, Div. 1, Groups C & D); EEx ia IIB T4; UL Pending
Mounting	2 inch and 1-1/2 inch NPT (standard)
Shipping Weight (approx.)	Monitor and Probe — 2.4 lbs (1.1 kg)

Notes: (1) Measurement range (active probe length) does not include top 3" (75 mm) of the waveguide or bottom 3" (75 mm) above probe weight. See dimension drawing on page 3.

(2) Probe length should be selected so no portion will contact the tank bottom.

Dimensions



Replacement Parts List

Part Description	Part Number
Monitor	
Battery Pack	0130-1044T

COMPLIANCE STATEMENTS

FCC COMPLIANCE STATEMENTS FOR WL20

FCC PART 15 NOTICE

This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case, the user will be required to correct the interference at the user's expense.

The user is cautioned that changes and modifications made to this equipment without approval of the manufacturer could void the user's authority to operate this equipment.

WARRANTY AND REPAIR SERVICE IN THE USA:
Barton Instrument Systems
900 South Turnbull Canyon Road
City of Industry, CA 91745
1-800-291-3550, ext. 269 or (626) 961-2547

CANADIAN COMPLIANCE STATEMENTS FOR WL20

The Industry Canada (IC) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The department does not guarantee the equipment will operate to the user's satisfaction.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier.

CAUTION

Do not attempt to make electrical ground connections yourself, contact the appropriate electrical inspection authority or an electrician.

EMISSION REQUIREMENT

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

WARRANTY AND REPAIR SERVICE IN CANADA:
Barton Instrument Systems
3840 - 11A Street N.E.
Calgary, Alberta T2E 6M6
(403) 291-4814

CE COMPLIANCE STATEMENT FOR WL21 *Approvals Pending*

This product has been tested and confirmed to be in compliance with all EU EMC and LVD Directives (in effect at the time of testing) for light industry use. There may be a temporary degradation of performance at extreme levels of electro-magnetic interference. This instrument complies with the Low Voltage Directive 73/23/EEC. For further details, contact Barton Instrument Systems.

CE 168X

Order Code

TankScan W-Series WL2_LEVEL MONITOR CONFIGURATION	ORDER CODE									
	WL2	#	-	###	X	X	#	X	#	X
RADIO										
North America (902-928 MHz)		0								
Europe (869.7-870 MHz)		1								
PROBE LENGTH (024 to 250 Inches in 1-inch increments)				###						
FLUID DIELECTRIC RANGE										
Low (2 to 31)					L					
High (32 and higher)					H					
PROBE CONSTRUCTION										
FLUID DIELECTRIC (per Dielectric Range above)	**MATERIAL** (Probe/Weight)	**PROBE LENGTH** Inches (cm)								
LOW ("L" Range Selection Only)	SST/Brass	24-63 (61-160)				A				
	Copper/Brass	64-240 (162-610)				B				
	SST/SST	24-63 (61-160)				C				
	Copper/SST	64-240 (162-610)				D				
HIGH ("H" Range Selection Only)	SST/Brass	24-140 (61-358)				**A**				
	Copper/Brass	141-250 (360-635)				**B**				
	SST/SST	24-140 (61-358)				**C**				
	Copper/SST	141-250 (360-635)				**D**				
ANTENNA										
Standard							0			
External Antenna							1			
FIRMWARE										
Standard								A		
POWER OPTIONS										
Standard (4 AA Alkaline Battery Pack)									0	
APPROVAL RATING										
Non-hazardous (general purpose)										A
Hazardous/Intrinsically Safe* (Class I, Div. 1, Groups C & D; Zone EExiallB T4)										B
* **Note:** I.S. rated to European or North American Standards										

Barton Instrument Systems, LLC
900 S. Turnbull Canyon Rd.
City of Industry, CA 91745 USA
(626) 961-2547
On the Web at www.barton-instruments.com