START-UP VERIFICATION and CALIBRATION CHECKLIST

Fuel Level Gauge and Leak Detection System

Location		Model No.	TMS 4000
Test Date		Serial No.	
# of Probes/Sensors	1 Probe / 1 Sensor	Date Installed	
Pneumercator Inspector		Distributor	Core Engineered Solutions
Facility Representative			

PRE-START-UP INSPECTION	Yes/No	REFERENCES	ACTIONS
Equipment Verification:			
Locate and familiarize yourself w/ TMS 4000 Installation Manual (IM).			
Identify all equipment connected to TMS console and record information.		Ref. IM, pages 7.	
Record Probe Information to verify that the correct probe(s) has been installed in the correct tank(s) per factory pre-programming.		Ref. IM, page 19	
Stick tank for product and water levels and record. Note: Stick readings should be taken where the TMS probe is installed for greater accuracy.			
Site Prep Verification:			
Power source:			
Confirm TMS is on dedicated 120/230 VAC, 60/50 Hz, 1P circuit.		Ref. IM, page 14	If No, correct.
Is power wiring to TMS console in a dedicated conduit to TMS console?			
Intrinsically Safe (IS) Grounds: (For Hardwire Systems ONLY)			
Confirm there are 2 IS Grounds plus the normal ground for the system.		Ref. IM, page 14	If No, correct.
Entry Knockouts:			
Confirm only the knockouts on the bottom of the console been used?		Ref. IM, page 10	If No, correct.
Have any additional holes been drilled into the TMS console?			If Yes, return entire console to factory for replacement.
Internal Wiring:			
Are the Intrinsically Safe (IS) probe and sensors wires landed in the IS side of the console?		Ref. IM, page 15.	If No, correct.
Have the correct types of wire been used? (Belden 8441 for probes and Beldon 8443 or 8442 for leak sensors. See chart)		Ref. IM, page 32,34.	If No, correct.
Are the NON-Intrinsically Safe (IS) wires landed in the NON-IS side of the console?		Ref. IM, page 15.	If No, correct.
Are the NON-IS wires in their correct conduits?		Ref. IM, page 15.	If No, correct.

Field Wiring:			
Are the IS probe and sensor wires in their own dedicated conduit from the console to the probe or sensor? (Probe and sensor wiring can share the same conduit.)		Ref. IM, page 34.	If No, correct.
Have water tight electrical junction boxes been used for the field wiring connections?		Ref. IM, page 34	If No, correct.
Have the probe and sensor connector cable and field wiring been connected correctly?		Ref. IM, pages 15	If No, correct.
Probes:			
Have the correct probes been placed in the correct tanks?			If No, correct.
Have the probes been placed correctly in the under ground tanks?			If No, correct.
Have the probes been placed correctly in the above ground tanks?			If No, correct.
Do the probes fit correctly in the tanks?			If No, return probe to factory And order correct probe.
Have the float(s) and end caps been placed on the probes correctly?			
Have the probe connector cables been connected to the probes correctly?		.	If No, correct.
Sensors:			
Have the correct sensors been placed in the correct locations?		Ref. Site Specific Wiring Dia.	If No, correct.
Have the brine sensors been placed correctly in the under ground tanks?			If No, correct.
Have the leak sensors been placed correctly in the above ground tanks and piping sumps?		Ref. IM, pages 22.	If No, correct.

START-UP		
Power Up TMS:		
Observe and record any alarms or errors. (Power fail alarm is normal on start-up.		
Does Horn Sound when Test Button is Pressed?		
Do All LED's on Front panel Illuminate when Test Button is Pressed?		
Are Date and Time Correct?		
If Printer is present, is paper loaded correctly through ribbon and front slot?		
Does it print when buttons are pressed?		
Record Probe/sensor and relay map on page 42-43 of the IM		

Clear All Logs	Yes	

CALIBRATION						
PROBE NUMBER	**LOCATION**	**MODEL**	**STICK READING FUEL / WATER**	**TMS READING FUEL / WATER**	**FLOAT OFF SET FACTOR LEVEL / WATER**	**PASS/ FAIL**
1						
2						

SENSOR NUMBER	**LOCATION**	**MODEL**	**PASS/ FAIL**	**SENSOR NUMBER**	**LOCATION**	**MODEL**	**PASS/ FAIL**
1	Tank Interstitial	LS 600-LDBN		**5**			
2				**6**			
3				**7**			
4				**8**			

RELAY NUMBER			
1			
2			

TANK NUMBER	**HH**	**H**	**L**										
1	95%	90%	50%										
2													

COMMENTS:

SENSOR MODEL No.	**FUNCTIONAL TEST**
LS 600-LDBN, SS Series (Non-discriminating)	* Remove sensor and turn “up-side down”. The LEAK Alarm LED should illuminate on console, the horn should sound and the console display should indicate the sensor is in alarm. * Turn the sensor right side up and replace per Installation Manual. * All alarm conditions should clear.
PROBE MODEL No.:	**FUNCTIONAL TESTING**
MP 450SRigid Series	* Turn off power to TMS. Remove probe from tank. Make sure to disconnect (unscrew) probe “connector” cable from top of probe WITHOUT dropping probe into tank. Place probe gently on flat surface and reconnect probe cable and turn on power to TMS. * MAKE SURE NOT TO STEP ON OR BEND PROBE WHILE PERFORMING THIS TEST. * Move the product and water floats up and down to view changes in level on console display. * Move the product float above and below the three (3) product alarm set points (SP 1, SP2, and SP3). Default settings are: SP1-95%, SP2-90% and SP3-20%. * The corresponding Set Point Alarm LED should illuminate on console and the horn should sound. Moving the float below or above the set points will clear all alarms. * Move the water float above its alarm point, typically 2” from its lowest point on the probe. * The corresponding Water Alarm LED should illuminate on console and the horn should sound. Moving the float below the set point will clear the alarm. * Before replacing the probe back into the tank, measure the fuel level using a tape measure or calibrated tank stick. Record this measurement and compare to inch reading on TMS display. Make any adjustments, if required. Contact Pneumercator for reprogramming assistance. * Turn off power before disconnecting probe cable. Carefully replace probe in tank and reconnect probe cable to probe.