All electrical installations and components in blender area are Class 1, Div 1, Group D

POM-40 NatGas/Air Blender 1

NatGas unregulated 60-150 psi

Compr.Air unregulated 60-150 psi

Safety Inlet Valves with spring-return.

DP

Blending Valve

50 psi

Turn-Down 30:1 or better

POM-40 NatGas/Air Blender 2

NatGas unregulated 60-150 psi

Compr.Air unregulated 60-150 psi

Safety Inlet Valves with spring-return.

DP

Blending Valve

50 psi

Turn-Down 30:1 or better

Available Option:
Gas Density Monitor, skid-mounted; measures NatGas/Air MixGas properties and displays Calorific Value, Wobbe Index, and Specific Gravity of MixGas at Operator Interface in Master Control Panel.

LandFillGas 30 psi supplied through a 9-mile long pipeline.

Gas Density Sensor (optional)

Tie-In Regulator 1

50 psi 28 psi

Tie-In Regulator 2

50 psi 26 psi

to Process (Paint Shop)

P Pressure Transmitter
(P) Pressure Gauge
T Temperature Transmitter
(T) Temperature Gauge

Blender Location will be defined as Classified Area (Indoor or Outdoor)

Boiler Room or other non-classified area

Operator Interface with Touch Screen

Master Control Panel

Operation:

The POM blender is supplied with NatGas and with Air. The POM is pre-set to a blending ratio that results in highly "diluted" NatGas/Air mixture with a CV that resembles the properties of LFG. A GraviBlend™-3E gravitometer at the outlet of the POM measures the properties of the NatGas/Air mixture. If the gravitometer detects a deviation of the gas properties from the desired values, the AccuBlend™ controller automatically adjusts the position of the piston in the POM, thereby changing the blending ratio, and re-establishing the desired properties.

The system is "always-ON". Two Fisher 1098EGR regulators monitor the pressure in the LFG supply line. If the pressure drops below an adjustable setpoint, the first regulator starts opening and begins injecting NatGas/Air into the fuel gas line to the paint shop. If the first blender is unavailable (i.e. for turned off for maintenance), the second regulator, which has a slightly lower setpoint, takes over.

The transition from LFG to NatGas/Air, and from Blender 1 to Blender 2, is fully automatic and un-noticeable at the paint shop.

NOTE:
Remote access for monitoring and control via Ethernet is standard.
UL 508a stamp for panel available.

NOTE:
Blender can be operated through push buttons at local Start/Stop Station, or through the touch screen in the Master Control Panel.

Skid-Mounted Control Panel
1 - Control Power ON/OFF
2 - ESD Mushroom Button
3 - Inlet Valves Open/Close
4 - Blender Start/Stop
5 - Alarm Silence
6 - Alarm Reset

#	DATE	REVISION DESCRIPTION	DRAWN / APPRV'D

Alternate Energy Systems, Inc.

DATE: 05-July-10	SCALE: NTS	DRAWN BY: WHD	APPROVED BY: n/a

TITLE: LandFillGas Replacement Blender - Automatic Changeover

REVISION NUMBER: Revision # 2	DRAWING FILE: LFG Blender Block Diagram 22Aug08.vsd