

CONTROL LOGIC

NOTES

- Provide with temperature display and communications port.
- Provide communications interface to the control system exposing all network available physical points and set points for diagnostic and monitoring purposes.

BILL OF MATERIAL

DESIG	QTY	MODEL NO.	DESCRIPTION
M 1&2	2		Damper Actuator
TS 1	1		Temp Sensor, Zone
CS 1,2,3	3		Current Switch
LT 1&2	2		Level Transmitter
LS 1	1		Leak Detector

LOGIC VARIABLES

BINARY	ANALOG	DESCRIPTION	#
[EF]		ON WHEN EXHAUST FAN ENABLED	2
[RUN]		ON WHEN GENERATOR COMMANDED TO START	3
[P1]		ON WHEN PUMP 1 ENABLED	2
[P2]		ON WHEN PUMP 2 ENABLED	2
[P1FL]		ON WHEN PUMP 1 FAILS	2
[P2FL]		ON WHEN PUMP 2 FAILS	2
[P1RT]		VARIABLE VALUE OF PUMP 1 RUNTIME	2
[P2RT]		VARIABLE VALUE OF PUMP 2 RUNTIME	2

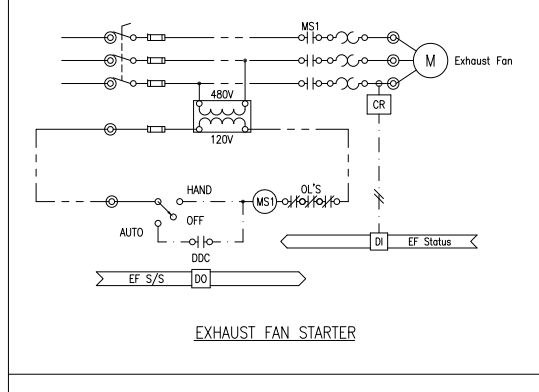
POINTS LIST

POINT NAME	POINT DESCRIPTOR	POINT TYPE				REMARKS
		DI	AI	DO	AO	
GENxx.ZN-T	Zone Temp		1			
GENxx.OA-D-C	OA Damper Command			1		
GENxx.EA-D-C	EA Damper Command			1		
GENxx.E-FN-STS	EF Status	1				
GENxx.E-FN-C	EF S/S			1		
GENxx.DAY-TNK-LVL	Day Tank Level		1			
GENxx.STRG-TNK-LVL	Storage Tank Level		1			
GENxx.STRG-TNK-LEAK	Storage Tank Leak	1				
GENxx.FOP-1-STS	FOP-1 Status	1				
GENxx.FOP-1-C	FOP-1 S/S			1		
GENxx.FOP-2-STS	FOP-2 Status	1				
GENxx.FOP-2-C	FOP-2 S/S			1		
TOTALS		4	3	5	0	

NETWORK INTERFACE POINT LIST

POINT	POINT DESCRIPTOR	POINT TYPE		UNITS
		READ	WRITE	
PMx.AMPS-APH	A Phase Current	Y		Amps
PMx.AMPS-BPH	B Phase Current	Y		Amps
PMx.AMPS-CPH	C Phase Current	Y		Amps
PMx.AMPS-NPH	Neutral Current	Y		Amps
PMx.VOLTS-AB	A-B Voltage	Y		Volts
PMx.VOLTS-BC	B-C Voltage	Y		Volts
PMx.VOLTS-CA	C-A Voltage	Y		Volts
PMx.VOLTS-AN	A-N Voltage	Y		Volts
PMx.VOLTS-BN	B-N Voltage	Y		Volts
PMx.VOLTS-CN	C-N Voltage	Y		Volts
PMx.REAL-PWR	Real Power	Y		kW
PMx.APP-PWR	Apparent Power	Y		kVA
PMx.PWR-FCTR	Power Factor	Y		N/A
PMx.FREQ	Frequency	Y		Hz
PMx.REAL-EN	Real Energy	Y		kWh
ATsx.NORM-VOLTS-AB	Normal A-B Voltage	Y		Volts
ATsx.NORM-VOLTS-BC	Normal B-C Voltage	Y		Volts
ATsx.NORM-VOLTS-CA	Normal C-A Voltage	Y		Volts
ATsx.NORM-FREQ	Normal Frequency	Y		Hz
ATsx.EMER-VOLTS-AB	Emergency A-B Voltage	Y		Volts
ATsx.EMER-VOLTS-BC	Emergency B-C Voltage	Y		Volts
ATsx.EMER-VOLTS-CA	Emergency C-A Voltage	Y		Volts
ATsx.EMER-FREQ	Emergency Frequency	Y		Hz
ATsx.NORM-STS	Normal Power Status	Y		ON/OFF
ATsx.EMER-STS	Emergency Power Status	Y		ON/OFF
ATsx.LOAD-TST	Load Test Status	Y		ON/OFF
ATsx.ENG-STRT	Engine Start Status	Y		ON/OFF
ATsx.NORM-BYP	Normal Bypass Status	Y		ON/OFF
ATsx.EMER-BYP	Emergency Bypass Status	Y		ON/OFF
ATsx.MODE	Mode Status	Y		ON/OFF
ATsx.CNTRL-AUTO	Controls Not In Auto	Y		ON/OFF
ATsx.COMM	Communications	Y		ON/OFF
GENx.ENG-SPD	Engine Speed	Y		rpm
GENx.CLNT-T	Coolant Temperature	Y		degF
GENx.OIL-P	Oil Pressure	Y		psi
GENx.ENG-RUNT	Engine Runtime	Y		hours
GENx.SYS-BATT-VOLT	System Battery Voltage	Y		Volts
GENx.ENG-FREQ	Engine Frequency	Y		Hz
GENx.ENG-COOL-DWN	Engine Cool Down Time	Y		seconds
GENx.GEN-VOLTS-LL	Generator L-L Voltage	Y		Volts
GENx.GEN-AMPS-LINE	Generator Line Current	Y		Amps
GENx.ENG-CNTRL-SW	Engine Control Switch	Y		ON/OFF
GENx.A-SO-RLY	Air Shutoff Relay	Y		ON/OFF
GENx.FUEL-CNTRL-RLY	Fuel Control Relay	Y		ON/OFF
GENx.CRANK-TERM-RLY	Crank Terminate Relay	Y		ON/OFF
GENx.STRT-MTR-RLY	Starter Motor Relay	Y		ON/OFF
GENx.GEN-SET-FLT-RLY	Generator Set Fault Relay	Y		ON/OFF
GENx.RUN-RLY	Run Relay	Y		ON/OFF
GENx.ELCT-GOV-RLY	Electronic Governor Relay	Y		ON/OFF
GENx.HI-CLNT-T	High Coolant Temperature	Y		ON/OFF
GENx.LO-CLNT-T	Low Coolant Temperature	Y		ON/OFF
GENx.LO-OIL-P	Low Oil Pressure	Y		ON/OFF
GENx.ENG-CNTRL-AUTO	Engine Control Not In Auto	Y		ON/OFF
GENx.HI-OIL-T	High Oil Temperature	Y		ON/OFF
GENx.ENG-CNTRL-STS	Engine Control Status	Y		ON/OFF
GENx.DIAG-CODE	Diagnostic Code Shutdown	Y		ON/OFF
GENx.CLNT	Coolant Loss Shutdown	Y		ON/OFF
GENx.ENG-STOP	Engine Stop Shutdown	Y		ON/OFF
GENx.HI-CLNT-T-SD	Hi Coolant Temp Shutdown	Y		ON/OFF
GENx.LO-OIL-P-SD	Low Oil Pressure Shutdown	Y		ON/OFF
GENx.OVER-CRANK	Overcrank Shutdown	Y		ON/OFF
GENx.OVER-SPEED	Overspeed Shutdown	Y		ON/OFF
GENx.COMM	Communications	Y		ON/OFF

ELECTRIC LADDER DIAGRAMS



SEQUENCE OF OPERATION

- Space Temperature Control:** BAS shall monitor the space temperature and control the exhaust fan as follows:
- The exhaust fan shall be energized whenever the space temperature rises above the space temperature setpoint of 78°F (deg.).
 - The exhaust fan shall not be allowed to operate whenever the generator is operating.
 - BAS shall prove fan operation and use the status indication to accumulate runtime.
- Outside Air Damper:** Bas shall control the outside air damper as follows:
- BAS shall open the outside air damper whenever the exhaust fan is operating.
 - BAS shall open the outside air damper whenever the generator is operating.
- Fuel Oil Pumps:** BAS shall control the pumps as follows:
- BAS shall energize the lead pump whenever the level of the day tank falls below setpoint or the generator is operating.
 - BAS shall prove pump operation and use the status indication to accumulate runtime. Upon a failure of the lead pump the BAS shall energize the standby pump.
 - The lead pump priority shall be rotated based on accumulated runtime or manually assigned by the operator.

Eng	DMC
Drawn	DMC
Chkd	HJN
Appd	---
Issued	8/4/11
Job No.	10080
Scale	N/A
Proj Code	

STANDARD

GENERATOR