

ACS Automated Fuel Maintenance System

The ACS Fuel Maintenance System (part number FMS 4.4) is a fully automated, stand-alone, self-contained system, designed for tanks up to 8000 gallons. It cleans and reconditions stored fuels, eliminating the problems associated with the water, sludge and other contaminants that develop in fuel storage tanks over time. The system's automatic cleaning program will provide a constant clean fuel supply that will assure the reliable operation of your emergency power unit whenever it is needed.

The FMS 4.4, operated by LCD backlit display controller, will periodically circulate your stored fuel through a water removal and particulate filter that will remove 99.7% of free water and 99.5% of particulate contaminants down to 10 microns. It will keep your stored fuel in clean, like new condition, preventing clogged engine filters, injection system repairs and the need for periodic fuel replacement or tank cleaning due to fuel contamination and the resulting degradation.

The system is fully monitored and alarmed for safety. Alarms can be sounded at the unit or communicated off site via an optional MODBUS (RS 485) serial and Ethernet TCP/IP connection. Two (2) Dry Contacts for Pump running and common alarm are available for customer use. The system will alarm and can be shut down automatically for any or all of the following conditions:

1. Hi-vacuum at the water separator, indicating the separator needs service
2. Hi-water in the separator, indicating the need for it to be drained.
3. Equipped with an in-cabinet drip tray, a leak detector in the tray will sense and sound an alarm shutting the system down on detection of any liquid, which may indicate an internal system leak.

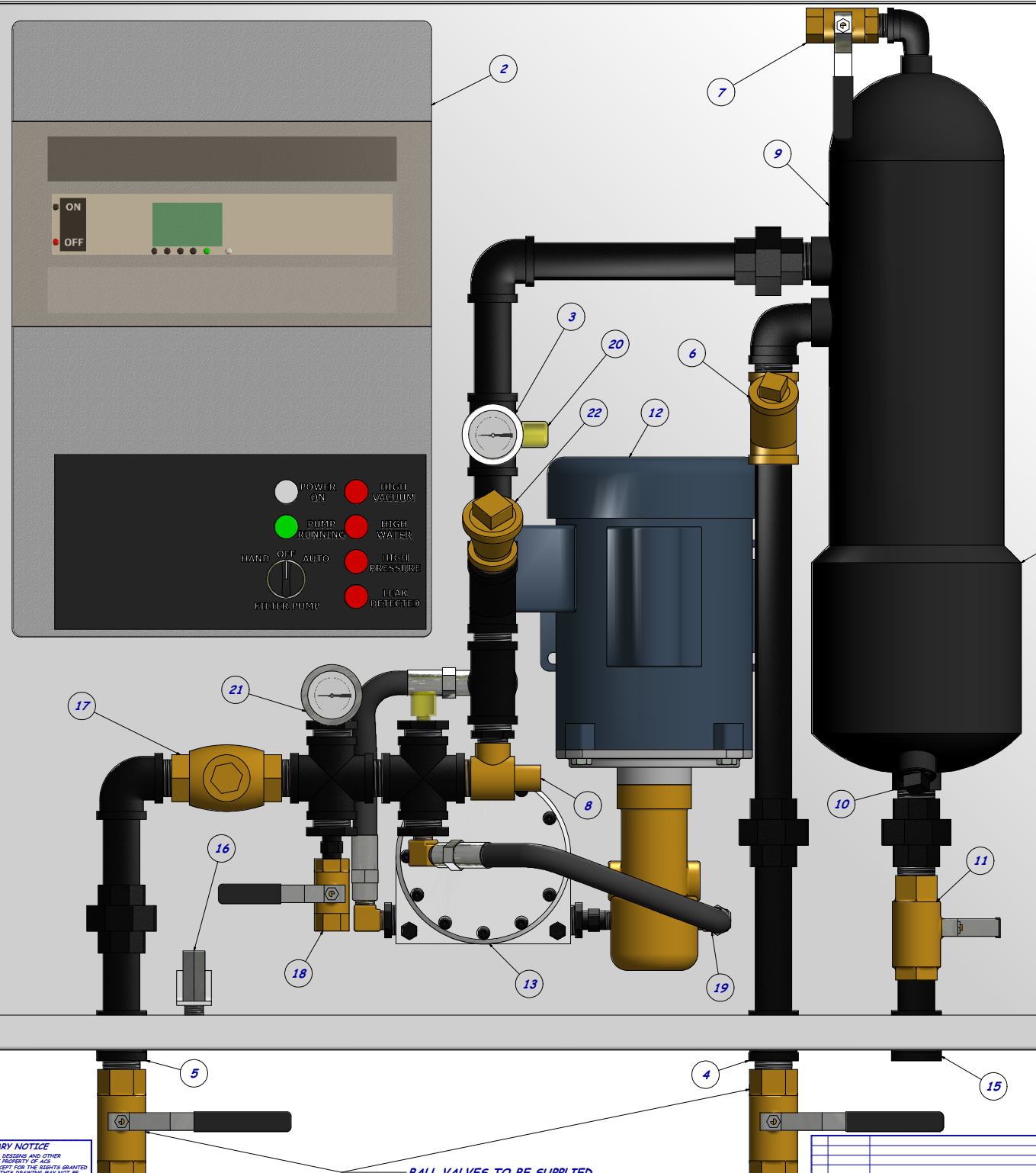
Incoming Power requirements: 120 VAC, single phase 20 amp Circuit

Additional features:

- UL 508A Labeled Control Panel
- Push Button Emergency Stop located on the outside of the Cabinet (Remote mount is optional)
- 3 position selector switch. Pump – Hand / Off / Auto
- Control logic short circuit protection 1A / 1-pole
- Automated program run cycle inhibit upon low fuel level
- Keyed and pad lockable cabinet

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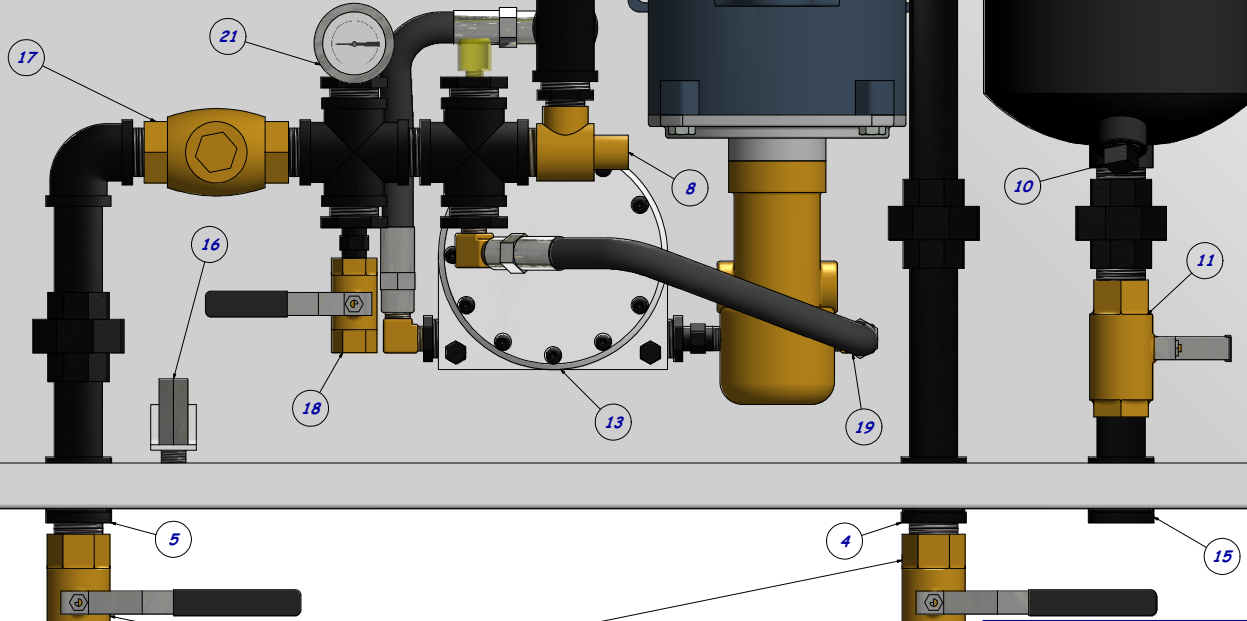
REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE	DATE: 01/31/10	DRAWING NUMBER: ACS-FMS 4.4	SHEET REVISION: 1 of 6
							DESIGNED BY: K.P. CHECKED BY: P.M. APPROVED BY: P.M. TITLE: ACS-FMS 4.4 SCALE: 1/4" = 1" DATE: 01/31/10 DRAWING NUMBER: ACS-FMS 4.4 SHEET REVISION: 1 of 6	



PARTS LIST	
ITEM	DESCRIPTION
1	FUEL MAINTENANCE CABINET - 36" X 36" X 12"
	NEMA 3R
2	FUEL MAINTENANCE CONTROLLER
3	VACUUM GAUGE
4	FUEL IN - 3/4" FNPT
5	FUEL OUT - 3/4" FNPT
6	STRAINER
7	PURGE VENT BALL VALVE
8	PRESSURE RELIEF VALVE
9	WATER & PARTICULATE SEPARATOR, COALESCING
10	HEATER PORT - (HEATER NOT INCLUDED)
11	WATER FILTER DRAIN BALL VALVE
12	1/3 H.P. MOTOR W/ 4 G.P.M. PUMP
13	MAGNETIC FUEL CONDITIONER
14	WATER SENSOR
15	WATER FILTER DRAIN - 3/4" FNPT
16	FUEL LEAK SENSOR
17	CHECK VALVE
18	FUEL TEST SAMPLE DISCHARGE
19	FLEX HOSE
20	VACUUM SWITCH
21	PRESSURE GAUGE
22	1" NPT PRIMING PORT

ON
OFF

POWER ON HIGH VACUUM
PUMP RUNNING HIGH WATER
HAND OFF AUTO HIGH PRESSURE
FILTER PUMP LEAK DETECTED



BALL VALVES TO BE SUPPLIED WHEN PACKAGED AT ACS

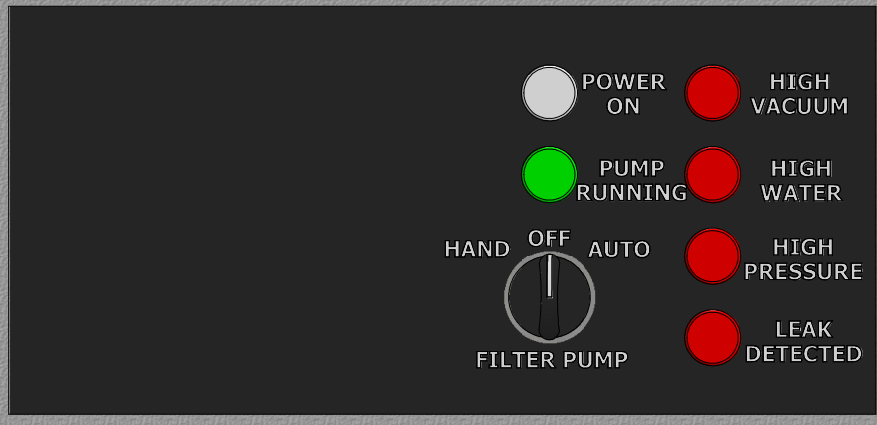
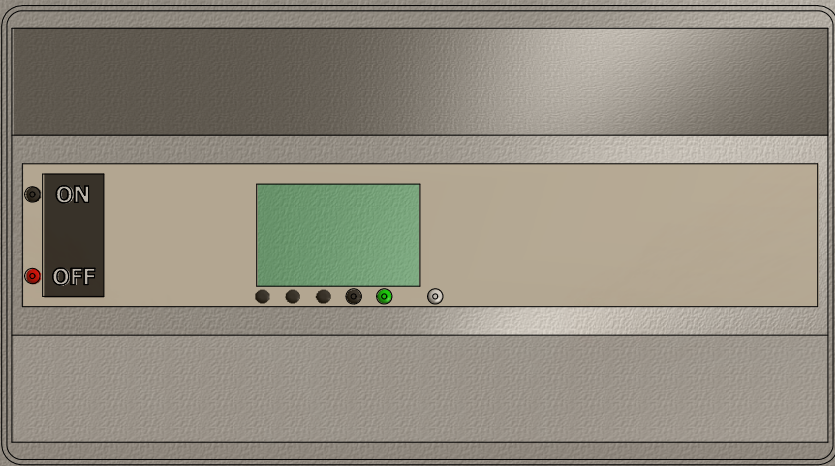
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ACS MANUFACTURING, INC.
1801 COMMERCIAL BLVD., DENISON, TEXAS 75020

DATE: 01/31/10
DRAWING NUMBER: ACS-FMS 4.4

REV ECO NUMBER DESCRIPTION BY APPD DATE

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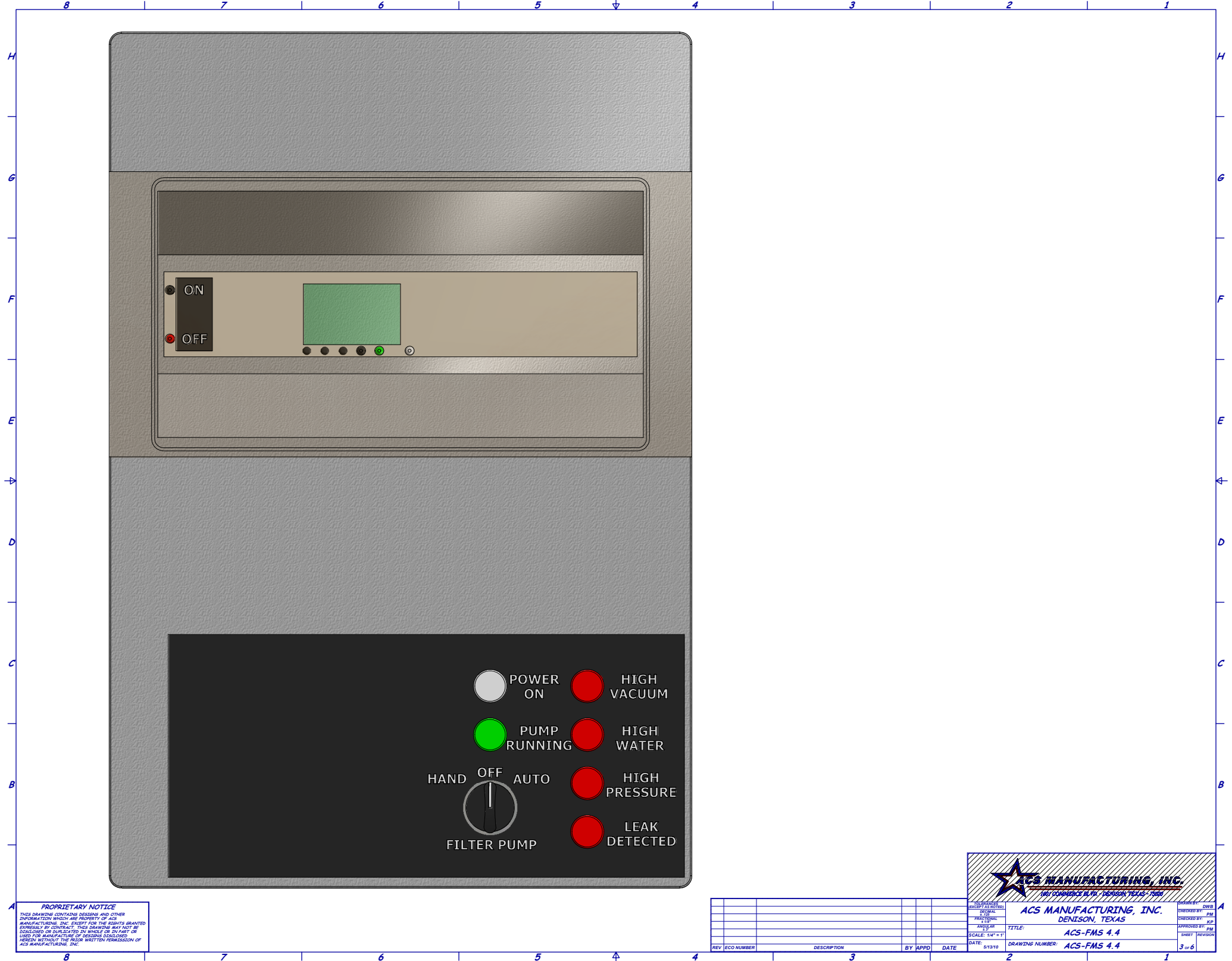


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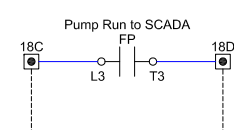
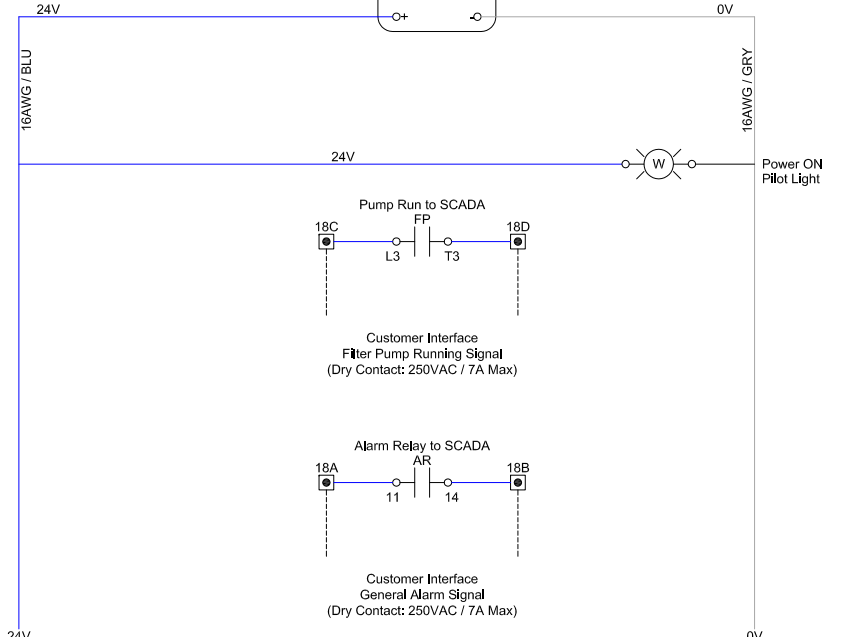
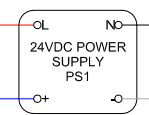
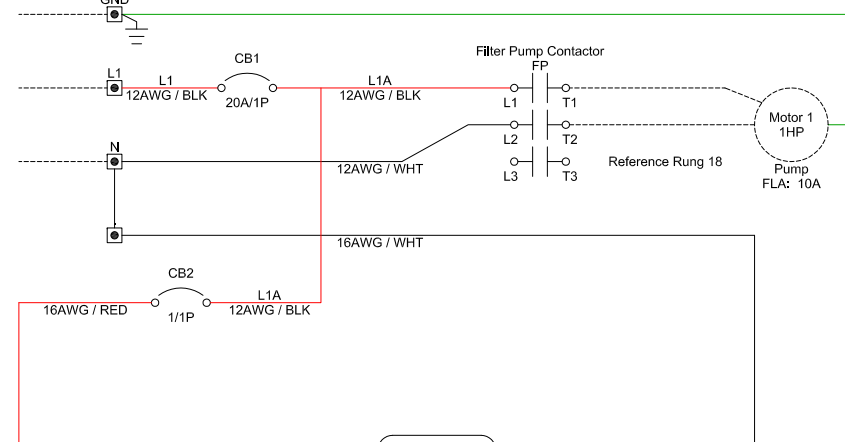
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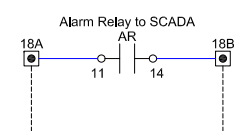
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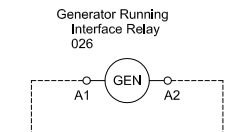
120VAC
1 Phase / 60Hz



Customer Interface
Filter Pump Running Signal
(Dry Contact: 250VAC / 7A Max)




Customer Interface
General Alarm Signal
(Dry Contact: 250VAC / 7A Max)



Customer Interface
Generator Running Signal
(24V AC or DC Required)

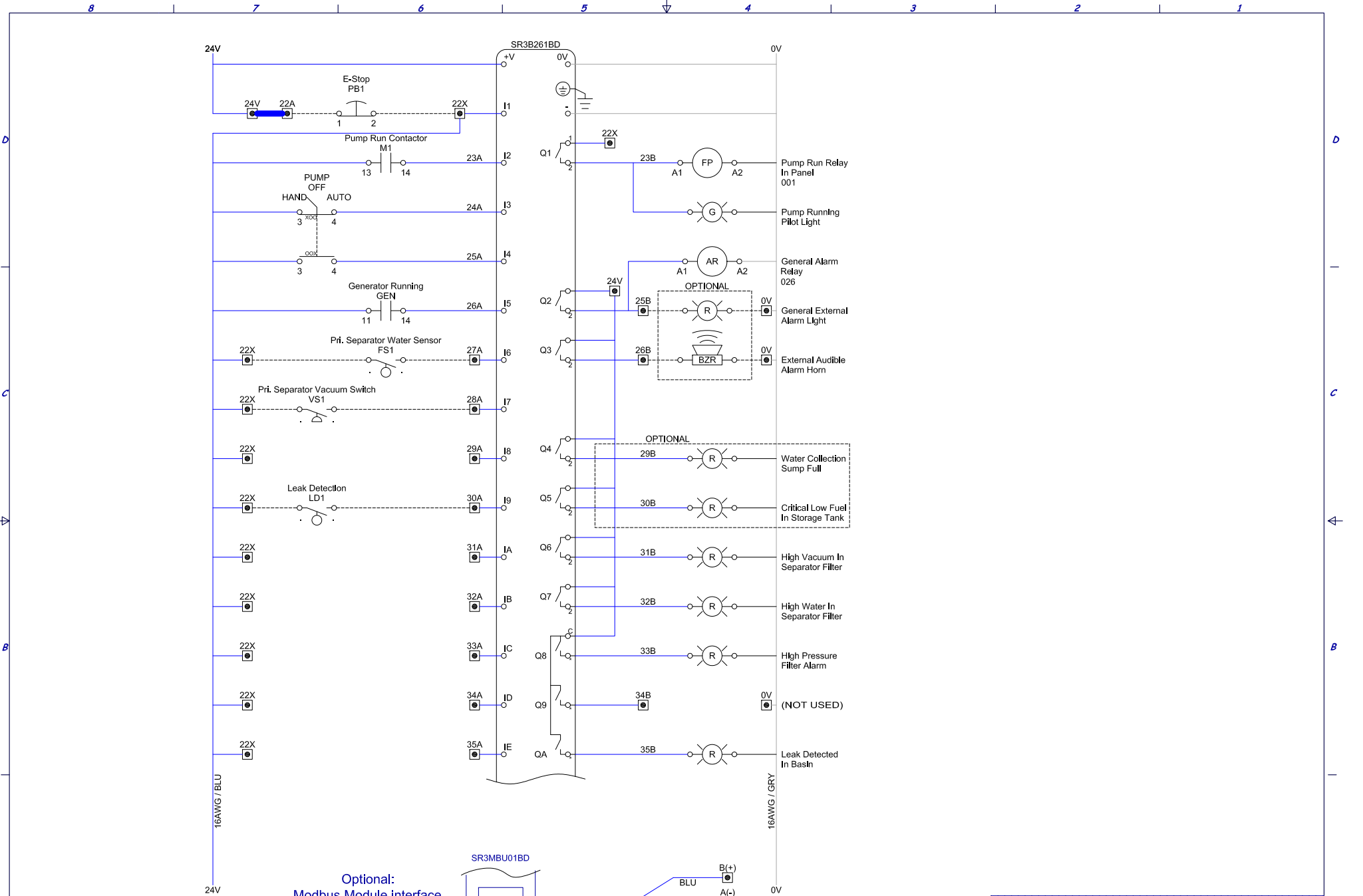
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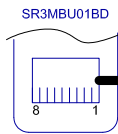


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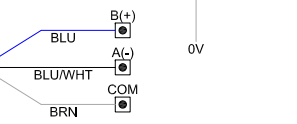
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CHECKED BY: PM	APPROVED BY: PM
TITLE: ACS-FMS 4.4 SCHEMATIC	
DATE: 9/7/10	DRAWING NUMBER: ACS-FMS 4.4
SCALE: 1/4" = 1'	SHEET REVISION: 4-6



Optional:
Modbus Module interface
RS 485 connection ASCII
"RTU"




PIN OUT
8 = GND
5 = A-
4 = B+



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TITLE: ACS-FMS 4.4 SCHEMATIC

DRAWING NUMBER: **ACS-FMS 4.4**

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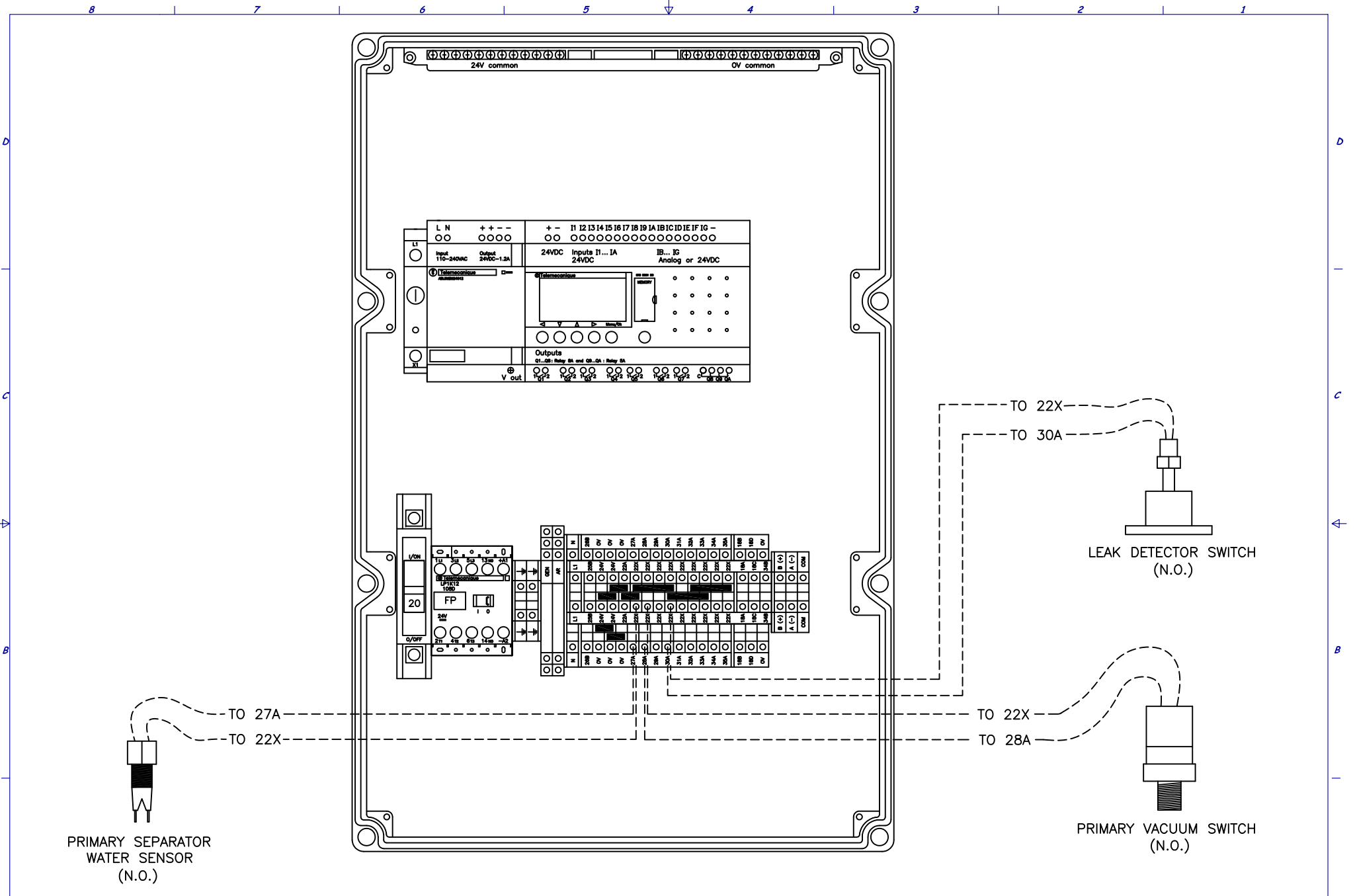
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REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE



ACS MANUFACTURING, INC.
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DATE: 8/7/10	TITLE: CONTROL WIRING DIAGRAM	DRAWN BY: DWE
SCALE: 1/4"=1"	DRAWING NUMBER: ACS-FMS 4.4	CHECKED BY: PM
		APPROVED BY: PM
		SHEET REVISED: 6-6