

HMI (Human Machine Interface) touchscreen.

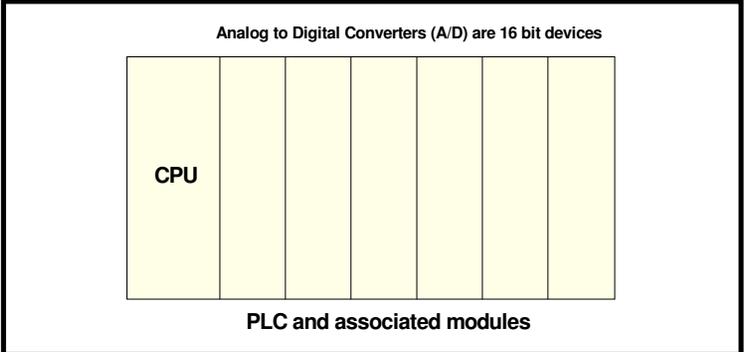
Ethernet Switch



HMI (Human Machine Interface) touchscreen.

**Sensor Types and Specs**

Our preferred method of obtaining tank levels is using pressure sensors. The pressure applied to a sensor is directly proportional to the weight of the media which is proportional to the height of the media. Our sensors are configured as 4 to 20 ma. sensors. That is, with no pressure, the output is 4 ma. At full pressure range (1.5 PSI), the output would be 20 ma. or a 16 ma. span. This electrical configuration is an industry standard and was conceived to prevent noise from entering the system. Distance between the sensor and the PLC is not a factor in accuracy utilizing 4 to 20 ma. devices. For tanks mounted under the deck plates (only tops of the tanks are accessible) we use submersible sensors. For tanks that have accessible ports on the side we use standard external sensors. Sensor accuracy ratings vary from type to type but any inaccuracies are eliminated when the tank undergoes final dynamic calibration.

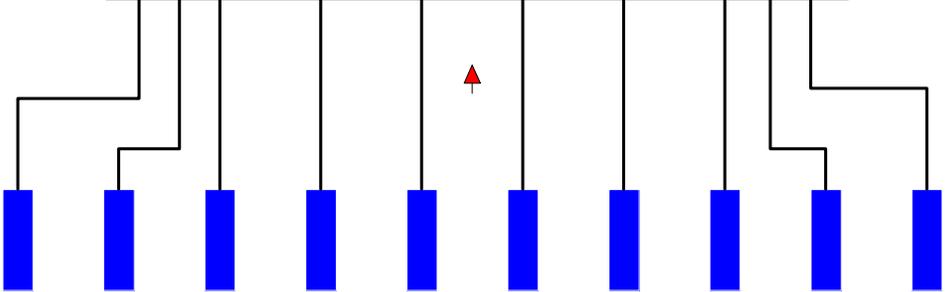


**System Accuracy**

System accuracy depends on two factors:

- 1). The ability of the Analog to Digital Converters (A/D) to resolve the input from the sensors.  
(Expressed in bits)
- 2). The ability of the sensors to follow the pressure of the media (expressed in % of full scale).

A 16 bit A/D converter has the ability to resolve the input by 65,536 times (2 to the 16th power). The input range is 16 ma. (20 minus 4). Therefore, the system can see a difference of .00024 of 1 ma. This error is so small that it will never be seen and will not be considered an accuracy factor.  
A 1% sensor is considered a high quality device. A 1% sensor's output would be within 10 gallons of a 1,000 tank. Our sensors are rated at .5% and therefore the



Tank Sensors

**Integrated Fuel Management**  
1994 E. Sunrise Blvd. Ft. Lauderdale, FL.  
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Title: <b>Basic PLC Tank Level Monitoring</b>			
Size:	Number:	Sheet of	Revision:
Date:			
File:			