Version 1.0
Analog Input: 0520

LONMARK® Functional Profile: Analog Input

Overview

The Analog Input functional profile is designed to allow all general purpose analog signals to be represented by a common object. Analog Input signals include current (i.e. 4 - 20 ma), voltage, thermocouple, RTD, etc. These signals may actually represent measurements such as flow rate, temperature, capacity, pressure, etc. The Analog Input functional profile is used when integrating devices that do not have the ability to interface directly to LONWORKS, but rather utilize an analog input conversion device that is LONMARK compliant.

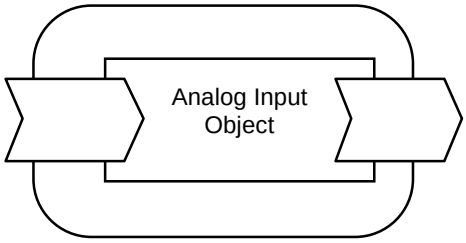

Figure 1.1 Analog Input Functional Profile

Example Usage

Devices implementing this function will be sending out SNVTs that are used to control actuator devices. An example of this would a device controlling value position is monitoring `SNVT_lev_percent` from a flow meter. The only connectivity required is to the mandatory network variable `SNVT_lev_percent`.

Object Details

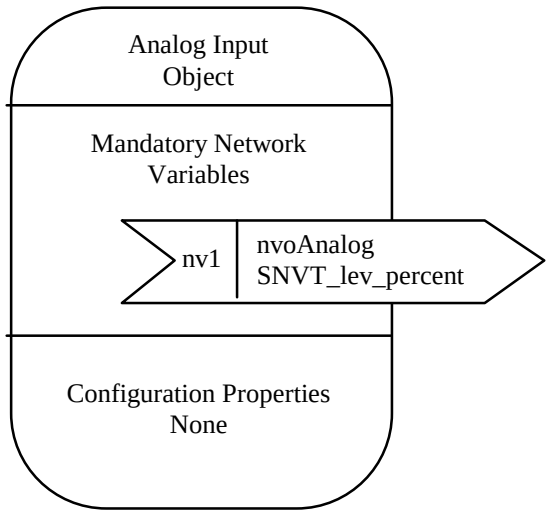

Figure 1.2 Analog Input Object Details

Mandatory Network Variables

Analog Percent of Full Scale Output

```
network output SNVT_lev_percent nvoAnalog;
```

This input network variable provides a value of an analog input signal from -163.84% to 163.84% of full scale.

Valid Range

The valid range is from -163.84% to 163.84%.

When Transmitted

Time of transmission is manufacturer defined.

Update Rate

The maximum update rate is application specific.

Default Service Type

The default service type is acknowledged.

Configuration Properties

None specified.

Data Transfer

None specified.

Power-up State

The network variable nvoAnalog should be set to zero scale until the first reading is available.

Boundary and Error Conditions

If the A/D converter is not able to perform then the variable nvoAnalog should be set to negative full scale (-163.84%). This value should be interpreted as an invalid reading and that there is a problem with the sensor. For inputs that are below zero scale or above full scale, the variable nvoAnalog should track the input signal as far as the hardware will permit. If the input signal is below the electrical limits of the A/D converter, the value for nvoAnalog should be set to -163.83%. Any input

that is above the maximum input rail of the A/D converter should be represented as 163.84%.

Additional Considerations

If calibration or linearization are required, or if the variable nvoAnalog (SVNT_lev_percent) does not have the required resolution, please review the Extended Analog Input functional profile.