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## PLC Integration Specifications

### Purpose

This document describes the communication between a KilnScout system and PLC.

The Finna Sensors KilnScout system is a fully integrated set of wireless sensors that will report Moisture Content per device to the PLC. The following describes the communication available when setting up a Batch kiln, Continuous kiln, or verifying communication between the systems.



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### Batch Kiln (per Kiln)

The KilnScout application can *read* the following information from the PLC:

Table 1- Information read from PLC

KilnScout Information	Type	Description
Charge Name*	String, Integer, Float	Charge Number and/or Name
Charge Description	String	Description of Charge
Schedule No.*	Integer	Schedule Number
Schedule Description	String	Schedule Description
Running*	Boolean	Kiln Running Status On/Off
Average MC%	Float or Integer	Average MC% of the charge

\*Required for integration

The KilnScout application can *write* the following information to the PLC:

Table 2- Information written to PLC

KilnScout Information	Type	Description
Moisture Content (%)	Float or Integer	Moisture Content Per Device
Status	Integer	Status of the device. 0 for normal, non-zero for all others. Results are bitwise OR operation. bit 0 = Invalid calibration bit 1 = Low battery bit 2 = Low temperature bit 3 = High temperature bit 4 = High-High temperature bit 5 = Short warning bit 6 = Open warning bit 7 = not used
Distance	Float or integer	Location of the sensor within a continuous kiln as measured from the zero line.
Temperature	Float or integer	Temperature of the sensor in degrees C
Kiln name	String	The name of the kiln (as entered on the KilnScout system) where the sensor is loaded.



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### Continuous Kiln (per Track)

The KilnScout tags per kiln. Note: read means KilnScout monitors the tag value written by the PLC, write means KilnScout updates the tag value.

Table 3 – Kiln Tag Information

KilnScout Information	Type	Read/Write	Description
Index trigger (push complete)*	Boolean	Read	The bit should toggle <i>after</i> the push is complete
Encoder count (push distance)*	Float or Integer	Read	The distance the track pushed.
Stock ID	Integer	Read and Write	Current stock being loaded on the track. Used when sensors are auto registered. The number corresponds to the stock ID assigned in the KilnScout application.
Actual push-rate	Integer or Float	Read	Current push-rate in ft/hr
Recommended push-rate	Integer or Float	Write	KilnScout’s recommended push-rate in ft/hr

\*Required for integration

The KilnScout tags per kiln. Note: read means KilnScout monitors the tag value written by the PLC, write means KilnScout updates the tag value.

Table 4 – Device Tag Information

KilnScout Information	Type	Read/Write	Description
Moisture Content (%)	Float or Integer	Write	Moisture Content Per Device
Status	Integer	Write	Status of the device. 0 for normal, non-zero for all others. Results are bitwise OR operation. bit 0 = Invalid calibration



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			bit 1 = Not used bit 2 = Not used bit 3 = Not used bit 4 = Not used bit 5 = Short warning bit 6 = Open warning
Location	Float or integer	Read and Write	Location of the sensor within a continuous kiln as measured from the zero line.
Temperature	Float or integer	Write	Temperature of the sensor in degrees C
Kiln ID	Integer	Read and Write	Kiln assigned to the sensor. The number corresponds to the kiln ID assigned in the KilnScout application.
Stock ID	Integer	Read and Write	Stock assigned to the sensor. The number corresponds to the stock ID assigned in the KilnScout application.
Pkg Name	String	Read and Write	Package label assigned to the bundle.

## Watchdog Timer

Select an OPC watchdog tag to verify communication as active between KilnScout and a Kiln Control system. If enabled, the software will set the Boolean tag high at user specified intervals in seconds, the PLC set the tag low. If the tag is not set high after a specified period, there is a loss of communication.

