

GRAIN MOISTURE MEASUREMENT / DATA SHEET

SS203-06

Grain Moisture Sensor

High-accuracy grain moisture sensor for standardized, automated measurement in storage, purchasing, processing and feed-production environments.



Overview

- Steel-needle insertion enables rapid measurement of grain moisture content.
- RS485 digital output with Modbus-RTU supports standardized automated detection.
- Wide-voltage input, low power and sealed construction support long-term operation.

Moisture Range 0–40%	Moisture Accuracy ±3%	Temperature Range –40 to +80 °C	Protection Level IP68
Key Advantages • Fast response, high accuracy and good interchangeability. • Supports measurement of wheat, corn, rice, soybeans and other common grains. • Alloy electrodes resist external impact during insertion measurement. • Fully sealed construction supports long-term dynamic detection. • Simple operation for storage, purchasing and processing sites.		Application Scenarios • Grain storage warehouses. • Grain purchasing sites. • Grain processing facilities. • Feed mills. • Household kitchens.	

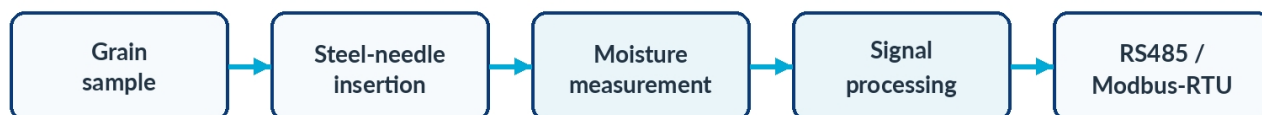
SENSING PRINCIPLE

Measurement Principle

STEEL-NEEDLE INSERTION MEASUREMENT

The sensor uses a steel-needle insertion method for rapid grain-moisture detection. Alloy electrodes are inserted into the grain sample, and the measured result is transmitted digitally through RS485 using the Modbus-RTU protocol. The supplied source does not provide a detailed sensing equation; this section therefore presents the stated measurement workflow only.

Grain moisture measurement path



Measurement characteristics



Principle reconstructed from the supplied source description; no additional sensing equation is inferred.

SYSTEM DATA

Technical Specifications

Item	Specification
Moisture Measurement Range	0–40% volumetric moisture; overview states 7–40% for common grains
Moisture Resolution	0.1%
Moisture Accuracy	±3% (@25 °C)
Temperature Measurement Range	–40 to +80 °C
Temperature Resolution	0.1 °C
Temperature Accuracy	±0.5 °C (@25 °C)
Operating Temperature	–40 to +80 °C
Power Supply	DC 10–30 V
Maximum Power Consumption	0.2 W (12 V supply)
Protection Level	IP68
Probe Material	Special corrosion-resistant electrodes
Sealing Material	Black flame-retardant epoxy resin
Default Cable Length	2 m; customizable as required
Dimensions	46 × 15 × 303 mm
Output Signal	RS485 (Modbus protocol)

Output and Communication

The source specifies RS485 digital output with the Modbus-RTU protocol and a DC 10–30 V supply. During RS485 wiring, do not reverse A/B, and ensure that device addresses on the same bus do not conflict.

Output	Description	Power Supply
RS485	Modbus-RTU protocol	DC 10–30 V

ORDERING INFORMATION

Product Selection

Code	Description
SS203-06	Model
LSWS-	Grain temperature and humidity transmitter
N01-	RS485 (Modbus-RTU protocol)
1	Device enclosure

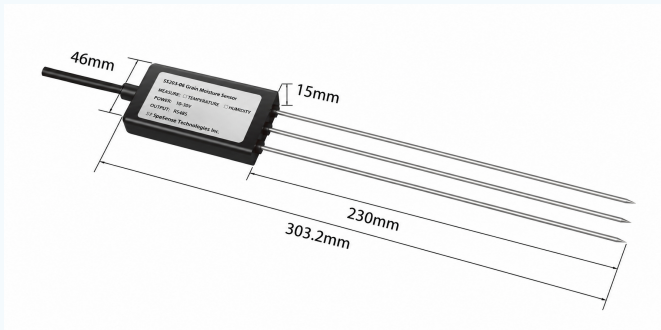
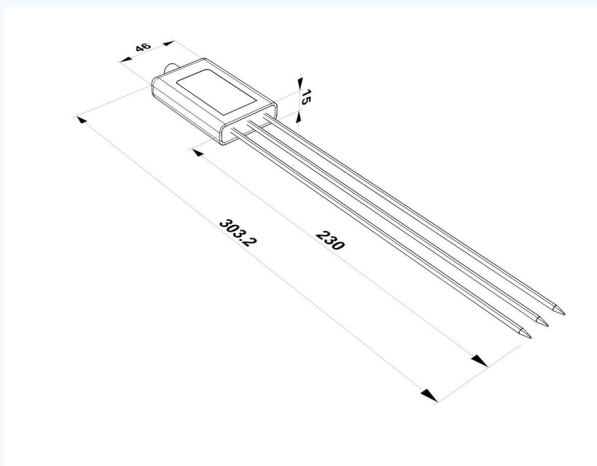
SELECTION NOTE

Configuration code elements are transcribed from the supplied source. Confirm the final code before ordering.

MECHANICAL DATA

Mechanical Dimensions & Structure

The supplied mechanical drawing shows the transmitter housing and three steel-needle probes. Dimension figures 46, 15, 303.2 and 230 mm are reproduced from the source drawing without adding unprovided dimensional interpretation.

Product view	Mechanical dimensions
 Grain moisture sensor with steel-needle insertion probe and transmitter housing. <i>Supplied product appearance retained; the product view contains no third-party branding.</i>	 Source dimension drawing retained; dimension figures are listed below. <i>Source dimension figures: 46, 15, 303.2 and 230 mm, as shown in the supplied drawing.</i>

ELECTRICAL CONNECTION

Wiring Instructions

The supplied source defines four wire colors and their RS485/power assignments. During installation, keep the A/B polarity correct and prevent address conflicts on the RS485 bus.

Signal / Power	Wire Color	Definition
Power positive	Brown	10–30 V DC
Power negative	Black	GND
RS485 A	Yellow	485-A
RS485 B	Blue	485-B

WIRING NOTE

The source specifies brown for power positive, black for power negative, yellow for 485-A and blue for 485-B. Do not reverse the A/B lines or duplicate device addresses on the bus.

INSTALLATION & OPERATION

Installation Notes

- Insert the steel-needle probe into the grain sample for measurement; use the supplied dimensions as a reference.
- Provide DC 10–30 V power and connect the RS485 lines according to the supplied wire-color definitions.
- Keep the RS485 A/B polarity correct and ensure that device addresses on the same bus do not conflict.

Grain Bin Temperature and Humidity Monitoring System

A sensor can be buried every 5 meters inside the grain storage silo to detect the temperature and humidity of the grain at different depths and locations.



SS203-06 Grain Moisture Sensor

Measurement & Configuration Summary

- Steel-needle insertion enables rapid moisture measurement in grain samples.
- The source lists wheat, corn, rice and soybeans among the measurable grain types.
- The specification table lists 0–40% volumetric moisture, while the overview states 7–40% for common grains.
- RS485 digital output with Modbus-RTU supports standardized, automated monitoring.

CONTACT / SUPPORT

SpeSense Technologies Inc.

Add: No. 9 Yuhe Road, Guitang Subdistrict, Yuhua District, Changsha City

Tel: +86-15386478166

Email: info@spesense.com

Web: www.spesense.com



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