

# SUGAR OVERSATURATION MONITOR

Model 970-M



## PRODUCT DESCRIPTION

This instrument gives a simple, inexpensive, reliable and direct measure of the most important variable in pan operation, syrup oversaturation. It enables operators with minimal experience to produce consistent high-yield strikes of clean, uniform sugar, by eliminating the need for precise vacuum control and complex calculations. This monitor improves centrifugal operation on all grades, giving better grain characteristics which upgrade color and drying quality of finished sugars.

## FEATURES

- **Direct reading scale**
- **Vacuum compensation**
- **Easily readable scale**
- **Linear isolated output**
- **Stainless steel sensor**
- **Low maintenance**
- **Field serviceable**
- **Simple installation**
- **Designed for durability**
- **One-year limited warranty**

## PRINCIPLE OF OPERATION

A resistance thermometer bulb in the measuring element reads vapor temperature. This reading is combined with that of a second matched bulb, giving the temperature of water flashing to equilibrium at the same pressure. The two resistance values are resolved by the instrument's circuitry to produce the direct oversaturation indication and transmitted signal.

This monitor uses the time-tested method of measuring temperature of vapor leaving the pan as the best indication of massecuite concentration at the upper surface. Since the upper surface is at the lowest temperature within the pan, the fluid at the surface is at the point of highest oversaturation. This method has proved to be capable of indicating unsafe oversaturation levels throughout the entire course of the boiling cycle.

The reliable indication of oversaturation provided by this instrument replaces the far less reliable "feel" of even the most experienced sugar boilers. By following a few good practice rules of sugar boiling, operators can produce grain that is vastly easier to purge, strike after strike. This means less wash syrups and remelt sugars for reboiling. Because the efficiency of molasses exhaustion is improved, there is more time and pan capacity available for low-grade syrup boiling.

## SPECIFICATIONS

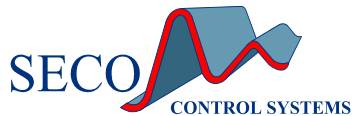
### SENSOR

Type	Insertion probe
Size	1-1/4"
Wetted Parts	316 stainless steel, rubber
Process Temp.	32 °F to 300 °F (0 °C to 150 °C)
Pressure	0 to 20 psig
Water Supply	1/4" NPT female
Mounting	1-1/4" NPT male
Wiring	#22 AWG or larger 3-conductor
Dimensions	
Diameter	1-1/4"
Length	21"
Junction Box	3 x 2 x 4"

### TRANSMITTER

Display	4-1/2" analog indicator, color coded green in safe range below 65%; red above.
Range	0 to 100% oversaturation (1.0 to 2.0 supersaturation)
Input	Model 970-M Sensor
Output	4 to 20 mA into 600 ohms max., other outputs available
Resolution	0.5% of full scale
Repeatability	1.0 % of full scale
Accuracy	2%
Ambient Temperature	32 °F to 110 °F (0 °C to 50 °C)
Pressure Range	10 to 25 cm.Hg. (4" to 10" Hg. Abs.)
Syrup Purity	Beet scales are from 70 to 100 purity; cane from 50 to 100 purity
Enclosure	NEMA 1 or NEMA 4X
Dimensions	
NEMA 1	11" W x 6" H x 4" D
NEMA 4X	11-7/8" x 7-1/4" x 6-3/4"
Mounting	
NEMA 1	Panel or wall mount
NEMA 4X	Wall or pipe mount
Power	115 or 230 VAC @ 50/60 Hz, 15 Watts.
Shipping Weight	10 to 14 lbs. depending on options

Represented By:



450 West Larch Road, Suite 5  
Tracy, CA 95304  
USA

888-798-8300 (USA) or 209-839-8600  
FAX 209-839-8601

E-Mail: [sales@secocontrols.com](mailto:sales@secocontrols.com)