


# Installation and Operation Manual

## Sensor Control Monitor

**WARNING**



Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.

**THINK SAFETY FIRST**



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### NOTICE

Use of the Sensor Control Monitor technology does not replace the need to comply with all required instructions, codes, and regulations related to the installation, operation, and maintenance of a strainer.

Watts is not responsible for the failure of alerts due to connectivity or power issues.



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# Important Safety Information

## ⚠ WARNING



To avoid death, serious personal injury, property damage, or damage to the equipment:

- Learn how to properly and safely use the equipment BEFORE installing, setting up, using, or servicing.
- Keep the manual available for easy access and future reference.
- Replace missing, damaged, or illegible manuals and product labels.
- Read the manual and all product labels and follow all safety and other information.
- Replacement manuals available at [Watts.com](http://Watts.com).

## Understanding Safety Information



This safety-alert symbol is shown alone or used with a signal word (DANGER, WARNING, or CAUTION). A pictorial and/or safety message to identify hazards and alert you to the potential for death or serious personal injury.

### ⚠ DANGER

Identifies hazards which, if not avoided, will result in death or serious injury.

### ⚠ WARNING

Identifies hazards which, if not avoided, could result in death or serious injury.

### ⚠ CAUTION

Identifies hazards which, if not avoided, could result in minor or moderate injury.

### NOTICE

Identifies practices, actions, or failure to act which could result in property damage or damage to the equipment.



This pictorial alerts you to the need to read the manual.



This pictorial alerts you to electricity, electrocution, and shock hazards.

# Description

The Sensor Control Monitor collects data from two pressure sensors mounted at the input and output of a Watts or Mueller strainer. As the strainer basket fills with collected debris, the differential pressure rises. The Sensor Control Monitor alerts the operator when the basket is nearing its full level and then again when it is full.

## Features

- Digital pressure display
- Display of basket fill level
- LED Alerts
- BAS Alarm circuit alerts
- Cellular Gateway alerts
- BAS MODBUS/BACNET (RS-485) alerts and data polling
- Configurable
- Mounts to strainer or wall

# List of Parts

The product consists of following components:

- Sensor Control Monitor
- 2 Pressure Sensor cables
- 24Vdc, 1A Power supply.
- Configuration keypad
- Wall-mount kit



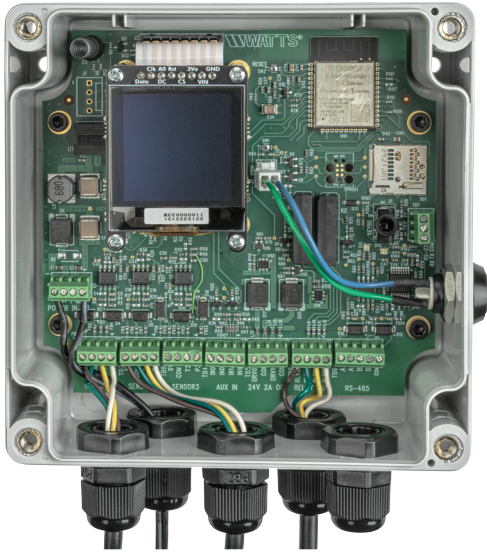
Sensor Control Monitor with components

# Installation and Operation

## 1. Installing the Sensor Control Monitor

### NOTICE

- The terminal blocks accept 18 to 30 AWG.
- The Control Box uses an external 24VDC, 1.04A, 25W supply. This supply may also power the Cellular Gateway.



1. Mount the Sensor Control Monitor
2. Remove the cover
3. Wire the sensors to terminals TB2 and TB3

P1/2	White
T1/2	Yellow
5V	Brown/Red
COM	Green/Black

4. Wire the power supply to TB1

+24VIN	Black
PGND	Black/Gray

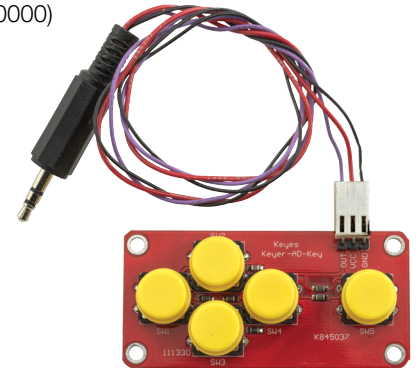
5. If desired, wire connections from TB9 to BAS Alarm circuits  
 RLY0 to Alarm1 (100% Full)  
 RLY1 to Alarm2 (75% Full)
6. If desired, wire connections from TB9 to a Cellular Gateway  
 RLY0 to INPUT1 (100% Full)  
 RLY1 to INPUT2 (75% Full)
7. If desired, wire RS-485 MODBUS/BACNET connection from TB6 to the BAS

A (Data+)	A (Data+)
B (Data-)	B (Data-)

## 2. Configuration

Connect the configuration keypad to J5. Press Select to enter the menu, then follow the prompts.

- Passcode (default is 0000)
  - Sensor Data
  - Sensor Config
    - Sensor Type
    - PSI for 100%
    - Reset
  - RS485 Config
  - Change Passcode
  - Reset Defaults
- Replace the cover.



## 3. Operation

- Press User Button to activate screen
- Press User Button to toggle screen
- Press and hold User Button to indicate basket has been cleaned and to reset basket fill display

### LED

- Green solid = Operation OK
- Green flash = Basket > 50% full
- Yellow flash = Basket > 75% full
- Red flash = Basket 100% full

### Screen

- $\Delta P$   
 P1 T1 (if available)  
 P2 T2 (if available)  
 Status
- Basket fill status

### Relay Closures

- If wired to BAS Alarm circuits, will alert BAS at 75%/100% full
- If wired to Cellular Gateway, will alert via SMS or email at 75%/100% full

# Installation and Operation

## RS-485 MODBUS

### Data Poll (Code 4)

Call customer service if you need assistance with technical details.

WORD	NAME	VALUE	TYPE
0	Type	0=P232+T, 1=P200, 2=P500	uint16_t
1	ΔP Full (x10)	50	uint16_t
2	Days since Reset/Cal	0	uint16_t
3	Hours since Reset/Cal	0	uint16_t
4	Minutes since Reset/Cal	5	uint16_t
5	Seconds since Reset/Cal	4	uint16_t
6	ΔP %	15	int16_t
7	Sensor 1 psi	75.20	float
8			(big endian)
9	Sensor 1 °C	24.71	float
10			(big endian)
11	Future use		float
12			(big endian)
13	Sensor 2 psi	72.56	float
14			(big endian)
15	Sensor 2 °C	24.57	float
16			(big endian)
17	Future use		float
18			(big endian)
19	Status		uint16_t

### Status

BIT	NAME	VALUE
0	Sensor 1	0=Ok
1	Sensor 2	0=Ok
2	Sensor 3	0=Ok
3	Calibration	0=Calibrated

### Alert Poll (Code 2)

BYTE	NAME	VALUE	TYPE
0	50% Alert	0	unit8_t
1	75% Alert	0	unit8_t
2	100% Alert	0	unit8_t
3	Error	0	unit8_t

**Limited Warranty:** Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights.



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