**REGENT'S**

SmartSense(IoT)

SPRING APPLIED BRAKE or CLUTCH IoT CONTROLLER

IoT Features

• 0-10V output proportional to wear

‣ *no guessing when to replace brake or clutch*

‣ *save maintenance & down time cost by not replacing too early*

‣ *no worry of brake failure by replacing too late*

• 10V output signaling 80% wear

‣ *warning to replace your brake or clutch*

• 10V output signaling wear is excessive

‣ *know if your clutch or brake is suddenly wearing quickly*

• 24V output signaling armature movement

‣ *enhance positioning & stopping*

‣ *eliminate overlap between brake dis-engagement and motor starting*

Other Features

• No sensors required, just connect to your brake or clutch

• Auto-adjusting full voltage time for fast brake turn-off (release)

‣ *no need to guess how long for armature movement*

‣ *compensates each cycle for temp & wear*

• Adjustable holding voltage

‣ *saves energy*
‣ *reduces heat build-up*
‣ *lowers power consumption*

• LED load indicator with brightness proportional to brake voltage
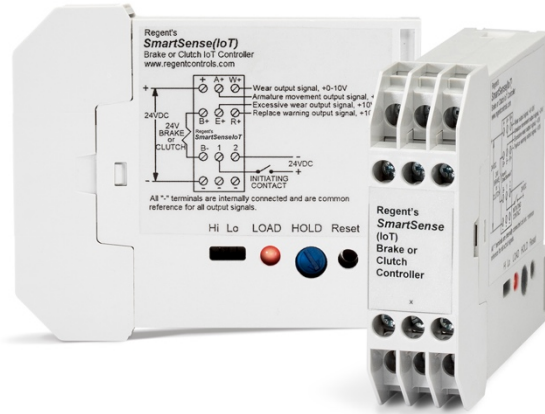
The *SmartSense(IoT)* Spring Applied Brake or Clutch Controller is a solid-state power supply and control for 24 VDC spring applied clutches & brakes which can be integrated into an industrial Internet of Things, IoT, system.

Brake or clutch performance is optimized by applying full voltage until armature movement is detected by the *SmartSense(IoT)*, *no customer sensor required*, then automatically reducing to an adjustable holding voltage. Therefore, full voltage is only applied for the time necessary for armature movement, compensating for heat and wear each cycle, before reducing power consumption and coil heating while the brake is disengaged. This also allows for faster brake engagement when coil voltage is removed.

Outputs for actual clutch or brake wear, worn condition for replacement, sudden excessive brake or clutch wear, and armature movement allow total remote monitoring of your brake or clutch for easy integration into an IoT system.

Also, the brake or clutch output will turn off if there is no armature movement within 4 seconds of initiation indicating a brake failure.

PART NUMBER BUILDER

SmartSense — Series Name

SmartSense(IoT) for full IoT integration
SmartSense24* for stand alone applications
*refer to SmartSense catalog sheet

FOR MORE INFORMATION CALL 203-732-6200
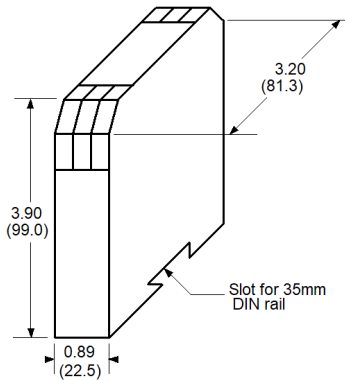
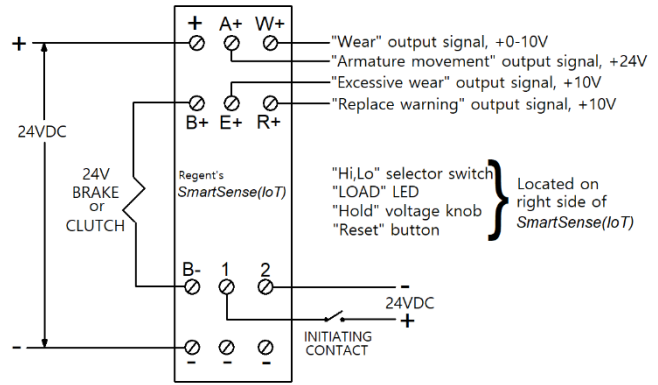**OR VISIT US ONLINE AT www.regentcontrols.com**

e-mail: sales@regentcontrols.com

Regent's *SmartSense(IoT)*
Brake or Clutch IoT Controller

DIMENSIONS

3.20
(81.3)

3.90
(99.0)

Slot for 35mm
DIN rail

0.89
(22.5)

WIRING DIAGRAM

+ A+ W+
"Wear" output signal, +0-10V
"Armature movement" output signal, +24V
"Excessive wear" output signal, +10V
"Replace warning" output signal, +10V

B+ E+ R+

24VDC

24V
BRAKE
or
CLUTCH

Regent's
SmartSense(IoT)

"Hi,Lo" selector switch
"LOAD" LED   Located on
"Hold" voltage knob right side of
"Reset" button   *SmartSense(IoT)*

B- 1 2

24VDC
+

INITIATING
CONTACT

All "-" terminals are internally connected and are common reference for all output signals.

OPERATION (refer to WIRING DIAGRAM)
-Initial Setup to be done when setting up a new load (i.e. brake or clutch) for the 1st time
1. Set "Hi,Lo" switch appropriate for load (Lo ≤ 20W, Hi > 20W)

WARNING: Improper switch setting may damage the *SmartSense(IoT)* control.

2. Apply power to +,- terminals.
3. With "HOLD" knob at max (fully clockwise), apply voltage to 1,2 terminals and allow load to warm up for 20 minutes.
4. Remove voltage from 1,2 terminals and press "Reset" button.
5. Re-apply voltage to 1,2 terminals;
   - "LOAD" LED should turn on and Wear output should be 0V
6. Remove voltage from 1,2; "LOAD" LED should turn off.

-Normal operation
1. Apply power to +,- terminals;
   - "LOAD" LED & load should be off & "WEAR" output should be 0V.
2. When signal is applied to 1,2 terminals;
   - Load should turn on fully & "LOAD" LED should turn on full brightness until armature movement is detected then load voltage should reduce to voltage set by "HOLD" & LED should dim proportionally
   - A+ 24V output should turn on at 1st armature movement
3. When signal is removed from 1,2 terminals;
   - Load, "LOAD" LED & A+ output should turn off
   - W+ output will update on next cycle (0-10V proportional to 0-100% wear)

NOTES: 1. R+ 10V output will turn on when wear reaches 80%
2. E+ 10V output will turn on if wear increases by 5% on each of 3 successive cycles
3. Pressing RESET erases all previous wear data and resets control with current data as new baseline.
4. Please contact Regent Controls for brakes or clutches ≤ 6W.

SPECIFICATIONS	*SmartSense(IoT)*
LINE INPUT (+,-)	
Voltage	24 VDC +/-10%
Current	Sufficient for load
LOGIC INPUT (1,2)	
Voltage	24 VDC +/-10%
Current	25 mA burden
LOAD OUPUT (B+,B-)	
Full voltage	24 VDC
Holding voltage	Adjustable, 5-60% of load voltage
Coil wattage	6 W to 90 W max
Off-state leakage	<500 uA
SIGNAL OUTPUTS for IoT integration	
Armature movement (A+, -)	24 VDC, 0.5 A max
Wear (W+, -)	0-10V, 50 mA max
Replace warning (R+, -)	10V, 50 mA max
Excessive wear warning (E+, -)	10V, 50 mA max

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