

Model HTS-30L Touch Sensor (Low Consumption Type)

PATENTED



Model List	Operation Sensitivity
HTS-30L	30 pF
HTS-30L-4	40 pF
HTS-30L-5	50 pF
HTS-30L-6	60 pF

Application

- Touch switch for door knobs
- Elevator switch
- Touch switch for automatic doors
- Touch switch for security purpose
- Input switch for electric devices
- Seat sensor
- Input sensor of amusement equipment
- Safety device for finger pinch avoidance from machine moving parts or door mechanisms

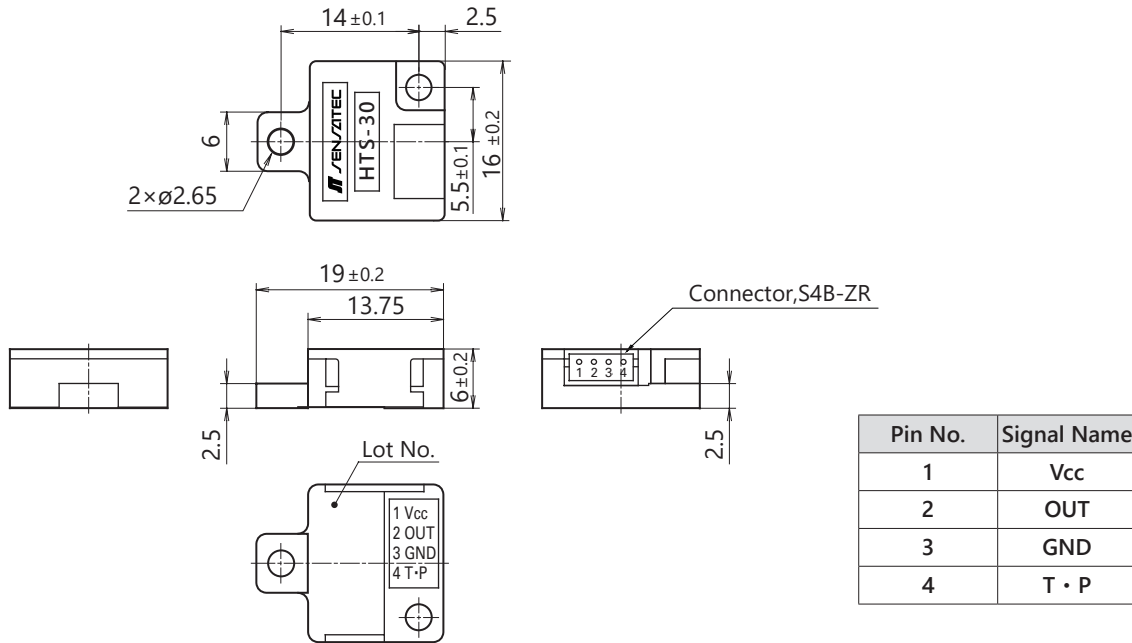
Features

- This is a power-saving, low-power-consumption version which has a standby current of 30 μ A or less, and therefore with battery power, has limitless placement possibilities.
- The touch electrode can be set freely. Small type and equipped with a connector for easy installation and free positioning even in small places.
- Does not operate by mistake when touched by an object with small electrostatic capacity such as plastic objects or bags.
- Fixed sensitivity to avoid the need for troublesome settings.
- Can withstand human static electricity without any external connection.
- Does not use any contact point to prevent poor contact problems and leads to the long life.

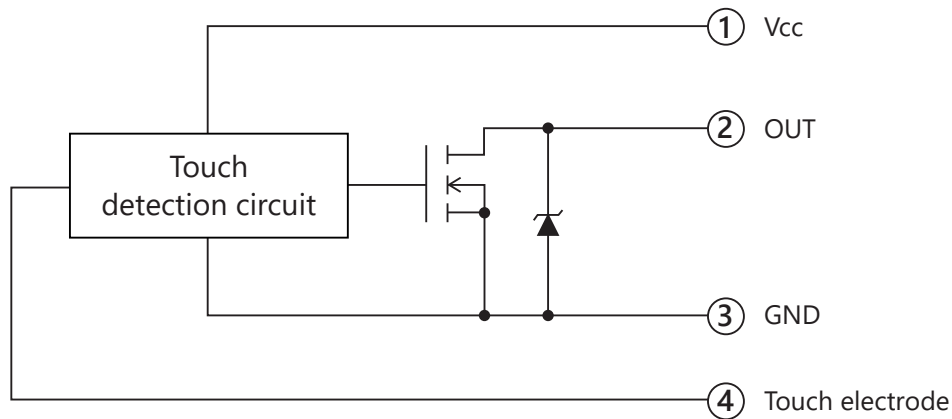
Rating/Performance

Model	HTS-30L	HTS-30L-4	HTS-30L-5	HTS-30L-6
Operation Sensitivity	30 pF \pm 6pF	40 pF \pm 8 pF	50 pF \pm 9 pF	60 pF \pm 12 pF
Power Voltage	5 V DC (Operating voltage range: 4.0 V to 6.5 V DC)			
Standby Current Consumption	Typ : DC 23 μ A Max : DC 30 μ A (At 5 V DC)			
Operation Power Consumption	Typ : DC 44 μ A Max : DC 50 μ A (At 5 V DC)			
Output	Nch MOSFET open drain 30 V DC, 50 mA DC or less			
Output Residual Voltage	1 V DC or less (Load current 50 mA DC)			
Operation Status	On output with detection target			
Temperature Range	-20 to 60 $^{\circ}$ C (-25 to 65 $^{\circ}$ C during storage) (Without dew condensation or freezing)			
Humidity Range	35 to 85 % RH (25 to 85 % RH during storage)			
Anti-static Electricity	\pm 20 kV between the contact terminal and GND (500 pF, 500 Ω)			
Breakdown Voltage	500 V AC, 50/60 Hz for 1 min (Between live parts and the case)			
Insulation Resistance	20 M Ω or more, at 500 V DC megger (Between live parts and the case)			
Vibration Resistance	Durability : 10 to 55 Hz, Double amplitude: 1.5 mm in X-, Y-, and Z-direction, each 2 hours (Device not powered)			
Shock Resistance	Durability : 500 m/s ² (Approx. 50 G) in X-, Y-, and Z-direction, each 3 times (Device not powered)			
Ingress Protection	IP50			
Case Material	PBT reinforced with glass-fiber (Ivory)			
Connector	Connector : S4B-ZR (4-pin) (from J.S.T. Mfg. Co., Ltd.) [Connections] Housing: ZHR-4, Contact: SZH-002T-P0.5 (from J.S.T. Mfg. Co., Ltd.)			
Weight	Approx. 2 g			
Options (Sold Separately)	Connector harness : SZH-4-300			

Dimensions



Output Circuit



*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

Precautions During Use

- The touch (detection) electrode of the touch sensor is connected to the detection circuit. Therefore, it is necessary to ensure sufficient withstand voltage and insulation between the touch sensor power supply and the AC power supply to ensure safety.
- All conductors including the wire connected to the terminal No.4 of this sensor detect capacitance, so make them as short as possible, Separate from the wiring of the terminals No.1 to No.3 of this sensor so as not to pick up stray capacitance. Also, for the same reason, route the wiring for terminal No.4 as far as possible from all other conductors that are insulated from the wiring for this terminal. When passing through a restricted opening, where separation is difficult, use a spiral tube with a thickness of 1.5 mm or more of a material with a low relative dielectric constant of 3 or less and connect it to the wiring of the terminal No.4.
- If the sensor is used near a broadcasting station with high output, or if there is strong common-mode noise in the DC power supply because it is also used for a large inverter-fed device, install a capacitor of 0.1 μ F or more to the 0 V line to remove the noise to the FG terminal.
- A high-frequency oscillation circuit is used in the touch sensor. Therefore, if several sensors get close or if the same person touches the touch electrodes of several touch sensors at the same time, the detection operation may malfunction due to reciprocal interference. It is recommended to consult with our company since the interference depends on the position and wiring of the touch sensors and the sensor electrodes.
- The tightening torque for the case should be 0.3 N·m or less.
- For other precautions, refer to "General Precautions" for touch sensors.