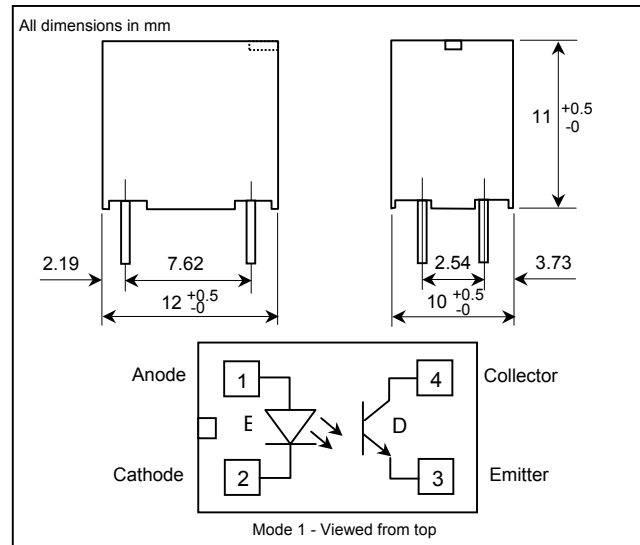
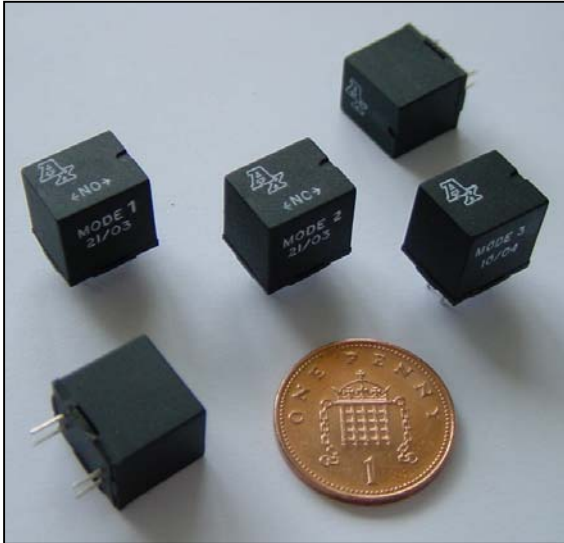


Non-Mercury Tilt Sensor

RoHS Compliant

TuControls 2c
Limited

Connect & Control



The TuControls Non-Mercury Tilt Sensor is a RoHS compliant, transmissive type photo interrupter that consists of a light emitting diode (emitter) & a photo-transistor (detector), mounted either side of a specially designed cavity that contains a stainless steel sphere. When the sensor is tilted/moved, the sphere moves/rolls within the cavity to obscure the light emanating from the emitter, thus stopping the light reaching the detector & turning it on.

The sensor is housed in a small (11x12x10mm) & very robust package. This allows it to be readily mounted on the most complex of printed circuit boards in either a vertical or horizontal plane, depending on the "mode" selected.

The sensor is currently available in various "modes" & angles of operation: -

Mode 1 : Bi-directional, normally open , horizontal mount.. (ie OFF, ON when tilted in two directions, 35° from vertical)

Mode 2 : Bi-directional, normally closed, horizontal mount. (ie ON, OFF when tilted in two directions, 65° from vertical)

Mode 3 : Omni-directional, normally open, horizontal mount. (ie OFF, ON when tilted in all directions, 35° from vertical)
(Other angles / mounting options, are available on request)

As a primary sensing device, the tilt sensor can be interfaced to CMOS & standard TTL using a minimal amount of components, enabling the sensor to drive devices, power transistors & FET's, enable solenoids, motors & lamp loads etc. Additional circuitry can also be supplied to create a sensor module.

Features:

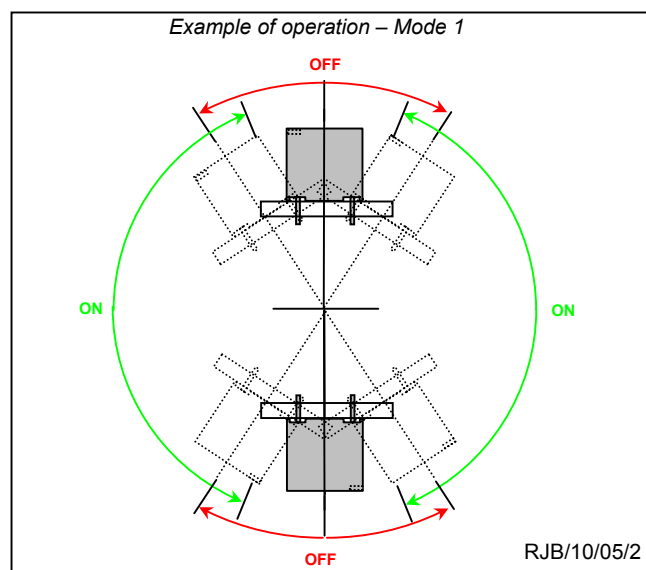
- RoHS Compliant
- Small robust construction
- Printed circuit board mounting
- Optical coupling
- Low power consumption
- Optional interface circuitry available
- Other tilt angles available
- Other "modes" of operation available

Typical Applications:

- Emergency shutdown
- Door / barrier position sensing
- Cam / motor position indicator
- Movement alarm

Important Note:

Suitable for PCB washing, but not total immersion.



TuControls Limited reserve the right to change this data sheet without giving notice

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Non-Mercury Tilt Sensor

RoHS Compliant

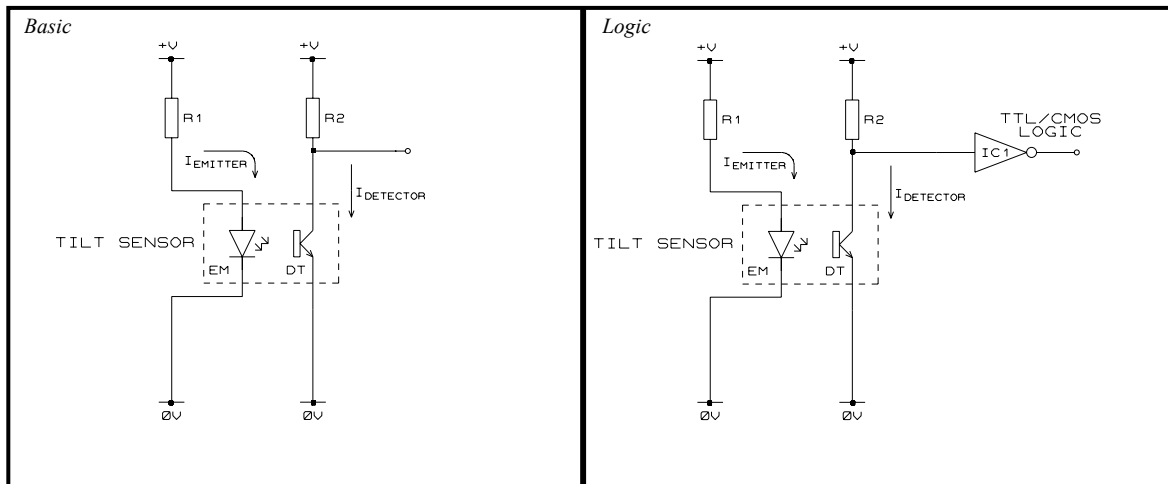
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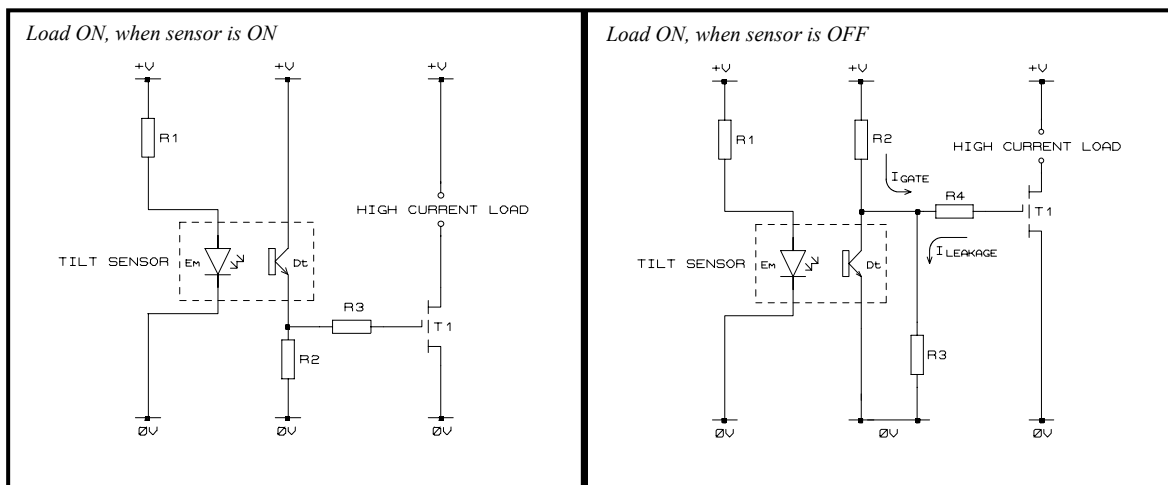
Connect & Control

Example Technical Characteristics – Mode 1						
Emitter						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Fwd Voltage	V _F	-----	1.45	1.7	V	I _F = 20mA
Cont. Fwd Current	I _F	-----	20	100	mA	V _F =5V
Rev. Voltage	V _R	-----	-----	5	V	I _R =100µA
Power Dissipation	P _M	-----	-----	170	mW	-----
Detector						
Coll. Emitt. Voltage	V _{CEO}	-----	-----	30	V	I _C =100µA
Emitt. Coll. Voltage	V _{ECO}	-----	-----	6	V	I _E =100µA
Coll. Emitt. Leak. I	I _{CEO}	-----	-----	100	nA	V _{CE} =10V
On-state Current	I _{C(ON)}	2	-----	10	mA	V _{CE} =25V
Coll. Emitt. Sat. V	V _{CE(SAT)}	-----	-----	0.4	V	I _C =2.0mA, I _B =100µA
Power Dissipation	P _M	-----	-----	100	mW	-----
Operating Specification						
Operating Angle	Op	30	35	40	Deg	I _F =20mA
Release (from Op)	Rel	8	10	12	Deg	I _F =20mA
Operating Temp.	Temp	-10	-----	+70	°C	I _F =20mA, I _C =10mA
Soldering Temp.	TSOL	-----	-----	+260	°C	For 5seconds max.

Minimal Circuit Requirements



FET Interface Circuit Requirements



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