

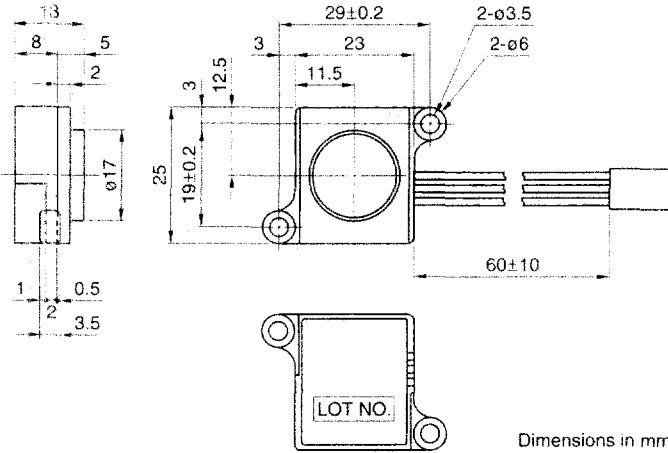
Sensors
Mechanical
Capacity

TONER SENSORS

Powder level sensors, piezoelectric type
TS and LTS series

SHAPES AND DIMENSIONS

LTS05D40



Lead wire color code

No.	Terminal	Color
1	Edc	Yellow
2	OUT	Gray
3	GND	Green/Yellow

Part No.	Sensor	Case	Packing	Substrate	Lead wire	Connector pin	Connector
TS15A20	UN9	Zn Die-casting		Hybrid substrate	UL1007,AWG26	AMP.170376-1*	AMP.172213-3*
TS15D20				D: H-IC A: Epoxy paper			
TS05D25	UN15		S-40	Hybrid substrate			
TS05A40	UN15		S-40	Hybrid substrate			
TS05D40				D: H-IC	UL1007,CSA-TR64,AWG24	AMP.170376-1*	AMP.172213-3*
TS02D40				A: Epoxy paper			
LTS05D40	UN15		S-40	Epoxy paper			

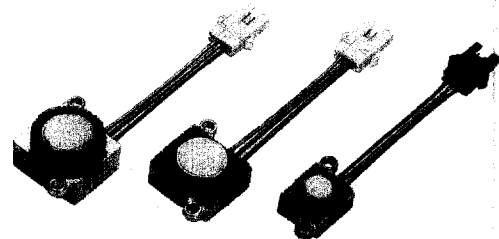
* UN: Unimorph piezoelectric element

*AMP Incorporated

ELECTRICAL CHARACTERISTICS

Part No.	Sensitivity (mm)	Operating voltage Edc(V)±0.5	Consumption current (mA)max.	Sensor element diameter(ømm)	Sensor element angle(°)
TS15A20	5±3	5	20	11	0
TS15D20	5±3	5	20	11	0
TS05D25	7.5±5	5	20	17	5
TS05A40	7.5±5	5	30	17	0
TS05D40	7.5±5	5	30	17	0
TS02D40	7.5±5	12	30	17	0
LTS05D40	7.5±5	5	30	17	0

* Operating temperature range: 0 to +50°C,Relative humidity: 10 to 85%



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RELIABILITY TESTS

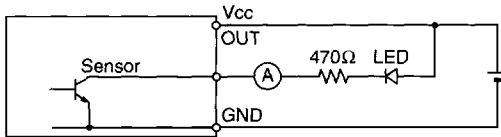
ON/OFF test	Turn on when there is no toner. And after repeating 5 seconds ON/OFF test for 96 hours, the sensor should work normally.
High and low stable temperature tests	After leaving the sensor in an atmosphere of -20°C and $+60^{\circ}\text{C}$ for 240 hours, separately, the sensor should work normally.
High and low stable humidity tests	After leaving the sensor in an atmosphere of 5%RH and 95%RH for 240 hours, separately, the sensor should work normally.
Vibration test	After applying vibration of 10 to 55Hz with amplitude of 0.7mm at intervals of 1 minute in the X, Y and Z directions for 2 hours each, the sensor should work normally.

OPERATION TEST METHOD

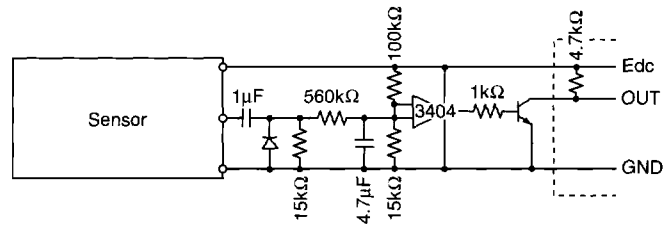
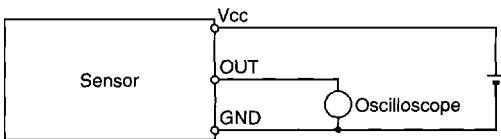
The test circuits depending on the output type the operation test.

The following circuit is recommended for converting analog output into digital output.

MEASURING CIRCUIT FOR DIGITAL OUTPUT TYPE



MEASURING CIRCUIT FOR ANALOG OUTPUT TYPE



Specifications which provide more details for the proper and safe use of the described product are available upon request.

All specifications are subject to change without notice.