

# SUCCESS STORY

## Non contact & continuous temp detection ( tyre surface)



AN ISO 9001:2015 Certified Company

### Customer

Automotive Industry

### Customer requirements

Temperature detection on tyre surface

### Orchid Solution :

Non contact Infrared temperature sensor

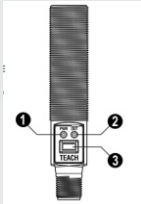
### Customer benefits

- Improved product quality
- Reduce man power
- Online monitoring & Quick analysis of data
- Push button lock out

### Product features

- Temp sensing range -20° to 300° C
- Repeatability  $\pm 1\%$  of measurement, or  $\pm 1^\circ\text{C}$ , whichever is greater
- Discrete outputs (Bipolar PNP /NPN) & analog output
- Fast response time 25 ms
- Sensing range up to 1 meter (adjustable)
- Sensitive to temperature contrasts of  $\pm 3^\circ\text{C}$
- 18 mm stainless steel threaded barrel
- Rugged encapsulated design for harsh environments
- Leakproof design IP67; NEMA 6 rated

### Products Look

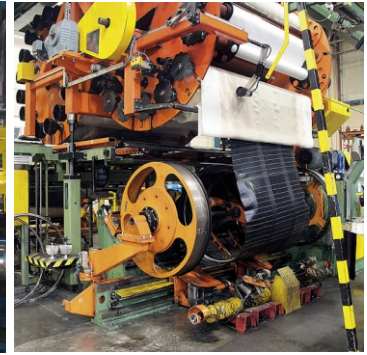
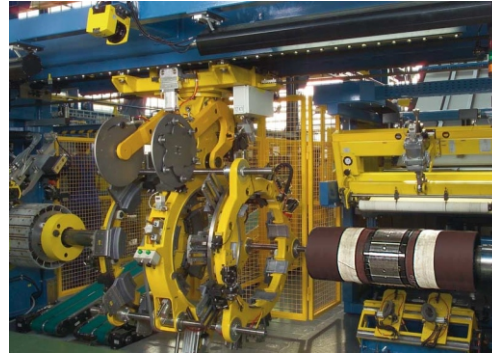


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### Application

Non contact temperature condition on tyre surface

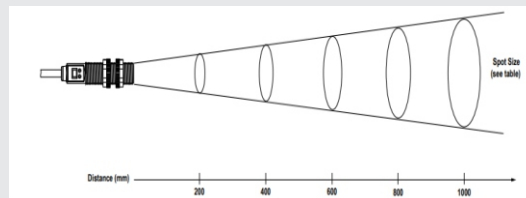
### Challenge

Earlier they are used IR Thermometer. It has several limitations like accuracy, not getting continuous temp data, no communications possible, not interfacing with PLC and many more

### Solution

We used non contact IR temperature sensor and it is mounted on top of tyre surface. We used two point static teach function (first condition is cold & another condition is hot). Output to PID controllers and control several temperature ranges as per user requirements. We can also use analog output for further plc programming if user require.

### Sensing field of View ( detection spot size versus spot size)



Sensor D:S Ratio	Distance from Sensor Face Versus Spot Size										Distance (mm)
	100	200	300	400	500	600	700	800	900	1000	
6:1	17	33	50	67	83	100	117	133	150	167	Spot Size (mm)
8:1	13	25	38	50	63	75	88	100	113	125	
14:1	7	14	21	29	36	43	50	57	64	71	

### Some other applications

- Cold part detection ( frozen foods, ice, dairy)
- Flame process verification
- Hot glue detection and monitoring
- Hot seal monitoring
- Roller monitoring
- Ejection monitoring of injection-molded parts
- Process equipment and fixture monitoring
- Gear box monitoring

### Some of pictorial view applications



## ORCHID TECHNOLOGY

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