

# DIFUSED BEAM SENSOR



Type	Æ(mm)	L(mm)	Sn
DBT-100	18	90	100mm
DBT-200	18	90	200mm
DBT-500	30	90	500mm
DBT-1k	30	90	1 meter

## WORKING PRINCIPLE :

This device consists of a transmitter and a receiver together. This looks like an Inductive Proximity Sensor and hence is also known as an IR Proximity Sensor. The emitter emits Infra red rays which are reflected on the receiver through the object to be registered. In the use of these sensors, it is important to bear in mind the colour of the object, Light colour corresponds to the maximum distance and vice versa. In case of a shiny object; the effect of the surface of the object is more important than the colour.

## ADVANTAGES :

- Transmitter and receiver are housed in the same housing
- As the self-reflection of an object is used for detection; Dark & Light marks can be distinguished.

## CORRECTION FACTOR FOR SENSING DISTANCE :

MATERIAL	CORRECTION FACTOR
Standard Paper White	1
Metal Polished	1.2 -----2.0
Polystyrene, White	1.0 -----1.2
PVC, Grey	0.4 -----0.8
Wood (rough)	0.5 -----0.8
Cotton Cloth White	0.5 -----0.7
Cardboard Black	0.1 -----0.4

## FIELD OF APPLICATION :

These sensors are particularly used for position sensing and counting of non-metallic objects. It is also used for Label sensing, Level sensing, Height Sensing, Plastic film sensing, Edge detection of paper or sheet metal etc.

Effective Sensing Range = Standard Sensing Range X Correction Factor.

## TECHNICAL CHARACTERISTICS:

Response Time	:5 ms.
Switching Frequency	:100Hz.
Operating Voltage	:10 – 30 VDC
Maximum Load Current	:100 mA.
Output	:NPN or PNP
Maximum Current consumption	:24mA (OFF)
At 24V DC	:34mA (ON)
Voltage Drop	:1 V Max.
Short Circuit Protection	:Provided
LED indicator	: Provided
Temperature Limit	:0 – 55°C
Cable	:2 Mtrs (std)

ORDERING CODE			
A	B	C	G
Type	Load Technique	Load logic	(Optional-Sensitivity Adjustment Facility)
DBT -100	P - PNP	O - NO	
DBT - 200	N - NPN	C - NC	
DBT - 500			
DBT - 1 K			

Example :

- 1) DBT - 100 - P - O  
Diffuse Beam Sensor, Sensing range 100 mm., PNP, Normally open
- 2) DBT - 100 - P - O - G  
Same as above but with Sensitivity adjustment facility

## SPECIAL NOTE :

**External gain adjustment facility:** - This facility can be provided in all types, on request. This is useful when different type of material is to be sensed. For example in hopper level sensing application; the type of liquid to be sensed may change in due course. In such case, by turning gain control potentiometer sensitivity can be readjusted. However; the maximum and minimum sensing distance, which can be controlled through gain, control pot varies with the type. Generally the limit is – 30% to +20% of nominal sensing range specified.