

Ultrasonic Sensor ESN - Layflat Sensor (4-60")



Description

The D.R. Joseph sensors are self-contained, microprocessor based ultrasonic sensors for use in the blown film plastics industry. The sensor transmits a high frequency ultrasonic pulse, measures the time taken for the reflection (or echo) to return to the sensor, and calculates the distance to the target based on that time. The sensor is internally compensated for the effect of the ambient temperature on the speed of sound. The calculated distance is sent over the same RS-485 serial connection that the DR Joseph controller uses to communicate with the sensor. There is no external calibration or configuration; all setup is done in the factory or in the field by a certified technician.

Specifications (typical at 24Vdc and 22°C and 50% RH)

Ultrasonic Frequency:	150 KHz
Beam Angle:	8°
Minimum Sensing Distance:	4 inches (10cm)
Maximum Sensing Distance:	up to 60 inches (150 cm)
Power Requirements:	12 – 24 VDC (reverse polarity protected)
Current Consumption:	30 mA typical
Operating Temperature:	-20°C to 65°C
Storage Temperature:	-40°C to 85°C
Humidity:	0-95%, non condensing
Transducer Material:	Custom PPA
Housing Material:	PVC
Housing Dimension:	50mm long 44mm diameter M33X2.5 (total threaded length 19mm)
Cable:	5 conductor PVC jacket 22AWG; DB9 connector termination
Measurement Resolution:	.25mm
Output Resolution:	10 bit
Communication Port:	RS485 (transient protected)
LED Operation:	ON – echo (target) present OFF – no echo present
Accuracy:	±0.25% of maximum distance (± 0.1 %) in homogeneous environment
Environmental Seal:	IEC IP67 (submersible for short periods), NEMA 6

Installation:

All replacement sensors are pre-programmed with a default internal ID. When installing a new sensor into the system, you must install one new sensor at a time. Installing more than one new sensor at a time will result in a communication error and a sensor fault. Allow 30 seconds between the addition of each new sensor.