## **Overview of Blackbird sensors**

## **Omron Photoelectric Sensor**

Model	Description	Range	IP rating	Link to manufacturer's site
E3Z-R66	General purpose retro reflective sensor (with reflector E39-R1S).	0-4m	IP67	E3Z   OMRON, Europe
	NPN output. PNP version available.			
	Can in many application be replaced by E3AS-HL500LMT			
E3ZM-R66	Stainless Steel house version of E3Z-R66.	0-4m	IP67, IP69K	E3ZM   OMRON, Europe
	Can in many application be replaced by E3AS-HL500LMT			
E3Z-D67	General purpose Diffuse-reflective sensor (without reflector). NPN	0-1m	IP67	
	output.			
E3ZM-D67	Stainless Steel house version of E3Z-D67.	0-1m	IP67, IP69K	
	Will be replaced by E3AS-HL500LMT			
E3S-DBN22	Transparent Object Detection Sensor (with reflector E39-R21). NPN	0-500mm	IP67, IP69K	E3S-DB   OMRON, Europe
	output. Small spot version for detecting small objects or gaps.			
	Versions with longer range available. PNP version available.			
	Can in many application be replaced by E3AS-HL500LMT			
E3AS-HL500LMT (PNP)	General purpose Distance-settable sensor (without reflector). Also	35-500mm	IP67, IP67G,	E3AS   OMRON, Europe
E3AS-HL500LMN (NPN)	detects transparent objects. Uses a line as opposed to a spot to		IP69K	
	detect uneven surfaces. Spot version also available. Version with			
	higher accuracy but with only 150mm range are available.			

### **Omron Proximity Sensor**

Model	Description	Range	IP rating	Link to manufacturer's site
E2A-M18KS08-M1-C1	Inductive Proximity Sensor. NPN output. PNP version available	0-8mm	IP67	E2A   OMRON, Europe
E2Q5-N40ME3-M1	Inductive Proximity Sensor. NPN output. PNP version available	0-40mm	IP67	E2Q5   OMRON, Europe

# **Comet Temperature/Humidity Sensor**

Model	Description	Range	IP rating	Link to manufacturer's site
T0110	Ambient temperature sensor. ATEX certified version available. 4-	-30 to +80 °C	IP65	Ambient temperature transmitter
	20mA analog output			with 4-20mA output T0110
				COMET SYSTEM, s.r.o.
T3110	Ambient humidity sensor. ATEX certified version available. 4-	0 to 100 % RH	IP65 electronic,	Temperature humidity transmitter,
	20mA analog output		IP40 sensor	4-20mA outputs. Weather sensor
				for environment monitoring.
				COMET SYSTEM, s.r.o.

## ifm

Model	Description	Range	IP rating	Link to manufacturer's site
VNB001	Vibration Sensor. Measures RMS speed in accordance with ISO	0-500mm/s	IP67	VNB001 - Vibration sensor - ifm
	10816. 4-20mA analog output, and PNP output			<u>electronic</u>

### Lem

Model	Description	Range	IP rating	Link to manufacturer's site
AT 20 B420L	Split core transducers for measuring AC currents. Other ranges	0-20A	IP40	https://www.lem.com/en/20-b420l
	available. 4-20mA analog output			

#### Other

Model	Description	Range	IP rating	Link to manufacturer's site
Omron position sensors	Photoelectric, Fiber optic, Proximity, Displacement	i		Sensing   OMRON, Europe
ifm position sensors	Photoelectric, Laser, Distance, Fibre optic, Inductive/Capacitive	-	-	Position sensors - ifm electronic
ifm process sensors	Pressure, Vacuum, Flow, Level, Temperature	-	-	Process sensors - ifm electronic
Sick position sensors	Photoelectric, Inclination, Inductive/Capacitive, Distance	-	-	Product portfolio   SICK
Sick process sensors	Pressure, Flow, Level, Temperature	-	-	Product portfolio   SICK