

Reflex Sensor with Background Suppression

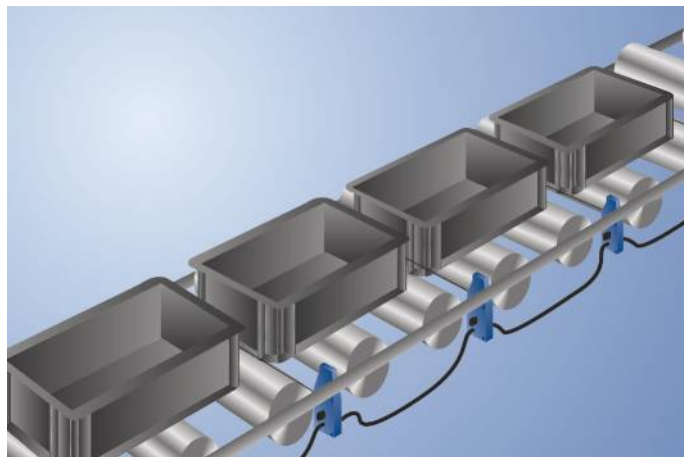
OPT1603

Part Number



- Energy savings thanks to EcoMode
- Optimized performance
- Quick wiring
- Scaled switching distance adjuster
- Time-saving installation with fast-clip mounting system

These sensors have been specially designed for use in accumulation roller conveyors. Their compact design allows for installation between rollers below the transport level. High-precision background suppression makes it possible to reliably detect even black objects at up to 900 mm. The scaled switching-distance adjuster assures quick and simple adjustment to the desired distance. Thanks to the innovative fast-clip mounting system and quick wiring, the sensor are installed and ready for use in no time flat.



Technical Data

Optical Data	
Range	900 mm
Switching Hysteresis	< 5 %
Light Source	Infrared Light
Wavelength	860 nm
Service Life (T = +25 °C)	100000 h
Risk Group (EN 62471)	1
Max. Ambient Light	90000 Lux
Opening Angle	3 °

Electrical Data	
Supply Voltage	24,2...27,8 V DC
Current Consumption Sensor (U _b = 24 V)	< 16 mA
EcoMode	yes
Switching Frequency	100 Hz
Response Time	5 ms
Temperature Drift	< 5 %
Temperature Range	-40...60 °C
Number of Switching Outputs	1
Switching Output Voltage Drop	< 0,9 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Logic	yes
Single Discharge	yes
Block Forwarding	yes
Solenoid Valve	yes
Protection Class	III

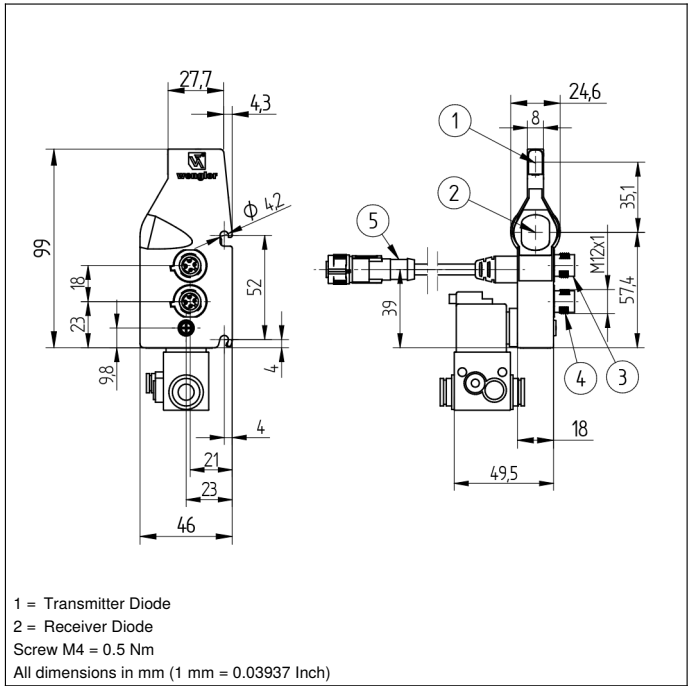
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic, ABS/GF
Degree of Protection	IP65
Connection	M12 × 1; 4-pin
Cable Length	1,5 m
Cable Jacket Material	PVC

Pneumatic Solenoid Valve Unit	
Valve no.	REXROTH
Supply Voltage Valve	22,8...26,4 V
Current Consumption Valve	86 mA
Valve temperature range	-15...50 °C
Operating Pressure	0...7 bar
Nominal Width	1,2 mm
Nominal flow rate 1 -> 2	50 NL/min
Supply-Line Connector Pipe	2× 8×1
Working-Line Connector Pipe	4×1
Valve function	3/2-Way
Switching function	NC

PNP NC	●
Connection Diagram No.	734
Control Panel No.	OP1
Suitable Connection Equipment No.	2 2s
Suitable Mounting Technology No.	421

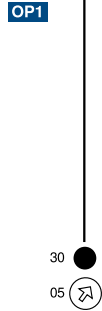
Complementary Products

Adapter OPT70N, OPT70S, OPT70P
ZPTX001 Quick Mount

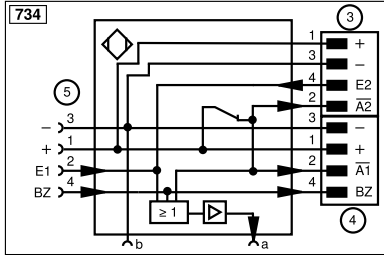


Ctrl. Panel

OP1



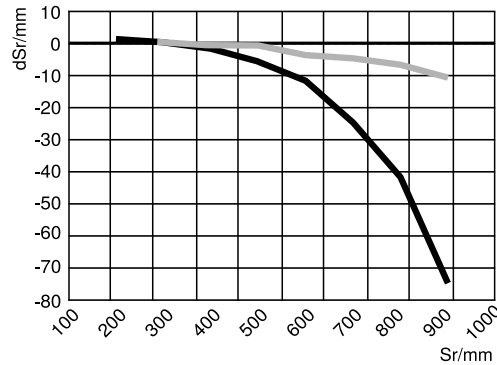
05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ä	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARIS422	Encoder A/Ä (TTL)
		ENBIS422	Encoder B/B (TTL)
		ENA	Encoder A
		ENB	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		ACK	Digital output OK
		SY In	Synchronization In
		SY OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	Reserved
		Wire Colors according to DIN IEC 60757	
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission
OPT15xx



Sr = Switching Distance
dSr = Switching Distance Change
— black 6 % remission
— grey 18 % remission

