Reflex Sensor

with Background Suppression

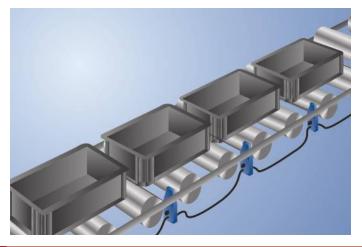
OPT1544

Part Number



- Energy-saving
- Increased capacity thanks to intelligent functions
- Optimized performance
- Time-saving initial start-up with fast-clip mounting system and quick wiring
- Wireless settings via NFC

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. Settings are entered via wireless NFC, which is even possible in the de-energized state. Thanks to the innovative fast-clip mounting system and quick wiring, the sensors are installed and ready for use in no time flat.

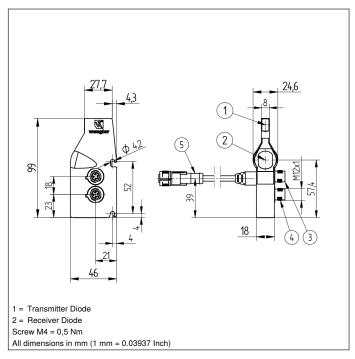


Technical Data

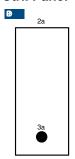
Range	Optical Data			
Light Source Wavelength Service Life (T = +25 °C) Risk Group (EN 62471) Max. Ambient Light Opening Angle Electrical Data Supply Voltage Current Consumption Sensor (Ub = 24 V) Switching Frequency Response Time Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class Mechanical Data Setting Method NFC Housing Material Degree of Protection Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Range	900 mm		
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 3 Supply Voltage 1230 V DC Current Consumption Sensor (Ub = 24 V) < 16 mA	Switching Hysteresis	< 5 %		
Service Life (T = +25 °C) 100000 h Risk Group (EN 62471) 1 Max. Ambient Light 90000 Lux Opening Angle 3 ° Electrical Data Supply Voltage 1230 V DC Current Consumption Sensor (Ub = 24 V) < 16 mA Switching Frequency 100 Hz Response Time 5 ms Temperature Drift < 5 % Temperature Range 4060 °C Number of Switching Outputs 2 Switching Output Voltage Drop < 0,9 V PNP Switching Output/Switching Current 200 mA Short Circuit Protection yes Single Discharge yes Block Forwarding yes Automatic Roller Shutdown yes Protection Class III Mechanical Data Setting Method NFC Housing Material Plastic Degree of Protection 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2 5	Light Source	Infrared Light		
Risk Group (EN 62471)	Wavelength	860 nm		
Max. Ambient Light Opening Angle Blectrical Data Supply Voltage Current Consumption Sensor (Ub = 24 V) Switching Frequency Response Time Temperature Drift Consumbrion Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Short Circuit Protection Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class Betting Method Housing Material Degree of Protection PNP NO/NC switchable NFC Receiver Category 3 Connection Equipment No. 1230 V DC 2130 V DC	Service Life (T = +25 °C)	100000 h		
Committee	Risk Group (EN 62471)	1		
Electrical Data Supply Voltage 1230 V DC Current Consumption Sensor (Ub = 24 V) < 16 mA Switching Frequency 1000 Hz Response Time 5 ms Temperature Drift < 5 % Temperature Range -4060 °C Number of Switching Outputs 2 Switching Output Voltage Drop < 0,9 V PNP Switching Output/Switching Current 200 mA Short Circuit Protection yes Reverse Polarity Protection yes Coverload Protection yes Block Forwarding yes Output Magnetic Valve/Engine yes Automatic Roller Shutdown yes Protection Class III Mechanical Data Setting Method NFC Housing Material Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. 147 Control Panel No. OP3 Suitable Connection Equipment No. 2 2 2s	Max. Ambient Light	90000 Lux		
Supply Voltage Current Consumption Sensor (Ub = 24 V) Switching Frequency Response Time Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Source Sou	Opening Angle	3 °		
Current Consumption Sensor (Ub = 24 V) Switching Frequency Response Time Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Short Circuit Protection Peverse Polarity Protection yes Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Electrical Data			
Switching Frequency Response Time Temperature Drift Temperature Range Au60 °C Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Short Circuit Protection Reverse Polarity Protection Yes Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Supply Voltage	1230 V DC		
Response Time Temperature Drift Temperature Range Adv60 °C Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Short Circuit Protection Reverse Polarity Protection yes Coverload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class Ill Mechanical Data Setting Method Housing Material Degree of Protection PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 5 ms 6 ms 6 ms 6 ms 7 everse Polarity Protection yes 9 yes 9 yes 9 Und Magnetic Valve/Engine yes 10 Und Magnetic Valve/Engine yes 11 Und 12 1; 4-pin 150 cm 147 150 cm 147 150 cm 147 150 control Panel No. 147 150 control Panel No. 147	Current Consumption Sensor (Ub = 24 V)	< 16 mA		
Temperature Drift	Switching Frequency	100 Hz		
Temperature Range	Response Time	5 ms		
Number of Switching Outputs Switching Output Voltage Drop PNP Switching Output/Switching Current Short Circuit Protection Reverse Polarity Protection Ves Overload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Temperature Drift	< 5 %		
Switching Output Voltage Drop	Temperature Range	-4060 °C		
PNP Switching Output/Switching Current Short Circuit Protection Reverse Polarity Protection Overload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Number of Switching Outputs	2		
Short Circuit Protection Reverse Polarity Protection Overload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Cable Length PIP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Switching Output Voltage Drop	< 0,9 V		
Reverse Polarity Protection Overload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Cable Length PISSTIC PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Pyes yes yes yes III Mechanical Data NFC Plastic Plastic Plastic Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin 150 cm 147 Control Panel No. OP3 Suitable Connection Equipment No.	PNP Switching Output/Switching Current	200 mA		
Overload Protection Logic Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Cable Length PIPF NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Short Circuit Protection	yes		
Logic yes Single Discharge yes Block Forwarding yes Output Magnetic Valve/Engine yes Automatic Roller Shutdown yes Protection Class III Mechanical Data Setting Method NFC Housing Material Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2s	Reverse Polarity Protection	yes		
Single Discharge Block Forwarding Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Cable Length PIPRO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Pyes yes yes yes NFC HII Mechanical Data NFC Plastic Plastic Plastic Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. OP3 Suitable Connection Equipment No. 2 2 2s	Overload Protection	yes		
Block Forwarding yes Output Magnetic Valve/Engine yes Automatic Roller Shutdown yes Protection Class III Mechanical Data Setting Method NFC Housing Material Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2s	Logic	yes		
Output Magnetic Valve/Engine Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. yes NFC Plastic Plastic Plastic Plastic Plastic Plastic Plastic Plof7 Connection IP67 Connection M12 × 1; 4-pin 150 cm PNP NO/NC switchable OP3 Connection Diagram No. OP3 Suitable Connection Equipment No.	Single Discharge	yes		
Automatic Roller Shutdown Protection Class III Mechanical Data Setting Method NFC Housing Material Plastic Degree of Protection IP67 Connection Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2s	Block Forwarding	yes		
Protection Class Mechanical Data Setting Method NFC Housing Material Degree of Protection Cannection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Output Magnetic Valve/Engine	yes		
Mechanical Data Setting Method Housing Material Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2s	Automatic Roller Shutdown	yes		
Setting Method NFC Housing Material Plastic Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2s	Protection Class	III		
Housing Material Degree of Protection Connection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Plastic IP67 M12 × 1; 4-pin 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. 147 OP3 Suitable Connection Equipment No.	Mechanical Data			
Degree of Protection IP67 Connection M12 × 1; 4-pin Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2s	Setting Method	NFC		
Connection Cable Length PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. M12 × 1; 4-pin 150 cm PNP NO/NC switchable OP3 Control Panel No. 2 2s	Housing Material	Plastic		
Cable Length 150 cm PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2s	-	IP67		
PNP NO/NC switchable NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 2 2 3	Connection	M12 × 1; 4-pin		
NFC Receiver Category 3 Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 147 OP3 2 2s	Cable Length	150 cm		
Connection Diagram No. 147 Control Panel No. 0P3 Suitable Connection Equipment No. 2 2s	PNP NO/NC switchable	•		
Control Panel No. OP3 Suitable Connection Equipment No. 2 2s	NFC Receiver Category 3			
Suitable Connection Equipment No. 2 2s	Connection Diagram No.	147		
	Control Panel No.	OP3		
Suitable Mounting Technology No. 421	Suitable Connection Equipment No.	2 2s		
	Suitable Mounting Technology No.	421		

Complementary Products

Adapter OPT70N, OPT70S, OPT70P
Software
USB NFC Adapter
ZPTX001 Quick Mount

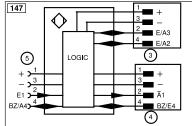


Ctrl. Panel



2a = NFC interface

3a = Switching Status Indicator/Error Indicator



Legend +	Supply Voltage +		Not connected	ENBRS422	5	
+	,	nc			Encoder B/B (TTL)	
-	Supply Voltage 0 V	U	Test Input	ENA	Encoder A	
~	Supply Voltage (AC Voltage)	0	Test Input inverted	ENв	Encoder B	
Α	Switching Output (NO)	W	Trigger Input	Amin	Digital output MIN	
Ā	Switching Output (NC)	W-	Ground for the Trigger Input	AMAX	Digital output MAX	
V	Contamination/Error Output (NO)	0	Analog Output	Аок	Digital output OK	
⊽	Contamination/Error Output (NC)	O-	Ground for the Analog Output	SY In	Synchronization In	
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT	
T	Teach Input	Amv	Valve Output	OLT	Brightness output	
Z	Time Delay (activation)	а	Valve Control Output +	M	Maintenance	
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved	
RxD	Interface Receive Path	SY	Synchronization	Wire Colo	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization	BK	Black	
RDY	Ready	E+	Receiver-Line	BN	Brown	
GND	Ground	S+	Emitter-Line	RD	Red	
CL	Clock	±	Grounding	OG	Orange	
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow	
②	IO-Link	Rx+/-	Ethernet Receive Path	GN	Green	
PoE	ower over Ethernet	Tx+/-	Ethernet Send Path	BU	Blue	
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet	
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey	
Signal	Signal Output	Mag	Magnet activation	WH	White	
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink	
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow	
PT	Platinum measuring resistor	ENARS422	Encoder A/Ā (TTL)		•	

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

