

FlexiBowl[®] by ars

Frontal and rear photocells option

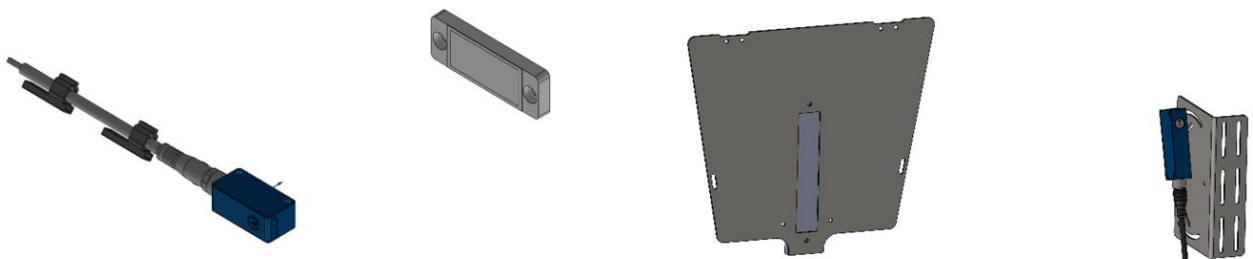
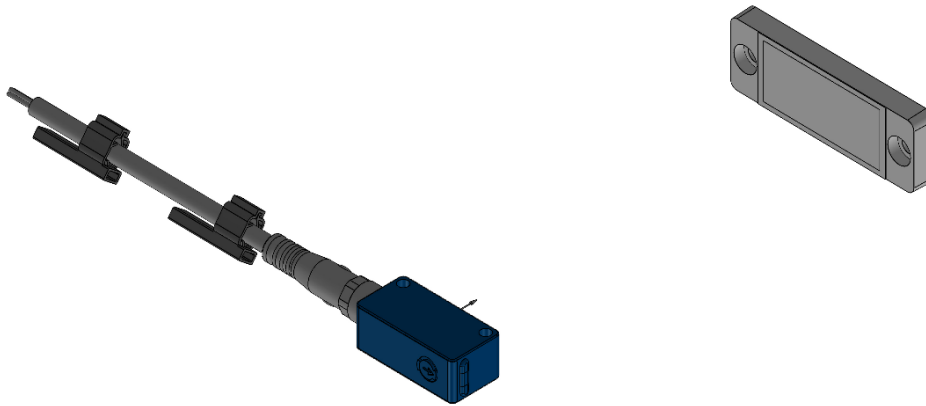


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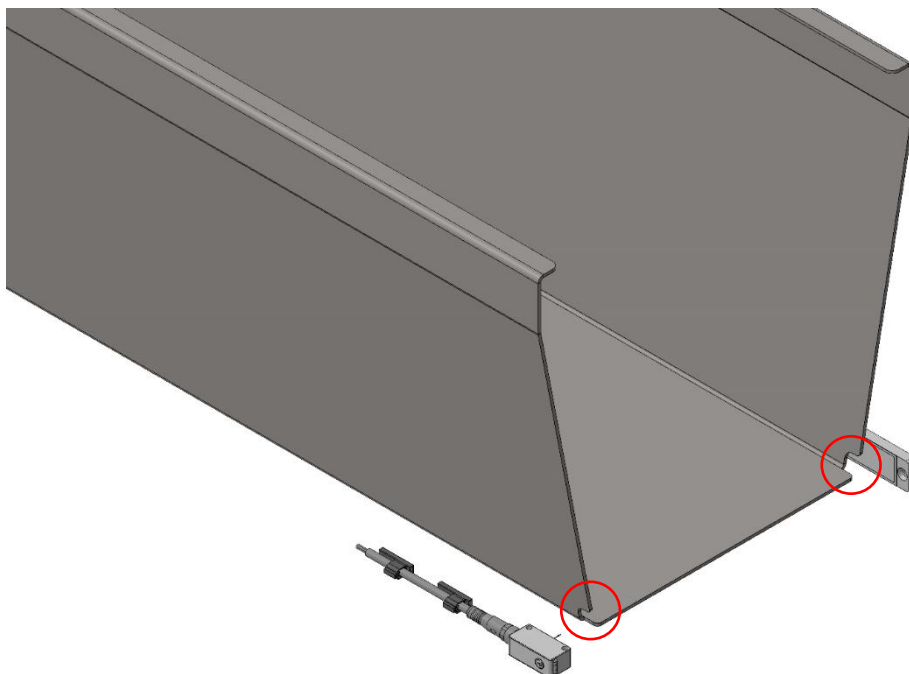
1 Frontal photocell option

Its function is to check the presence of components in the front area of the vibrating tank during the feeding process. Control is provided by a photocell and a reflector at the front of the hopper. The photocell is supplied with a 4-pole cable 5M long.



1.1 Installation

The light barrier system must be installed in the outlet of the vibrating tank in correspondence with the two processes present.



NOTE: The fixing of the photocell and reflector on the structure is not the responsibility of Ars Automation, it will be the responsibility of the customer to design a fixing system compatible with the operation of the system and with the features of the components shown in the datasheets.

1.2 Technical specifications

With regards to the features of the photocell and reflector, please refer to the manufacturer's datasheets below

P1KK001

Part Number

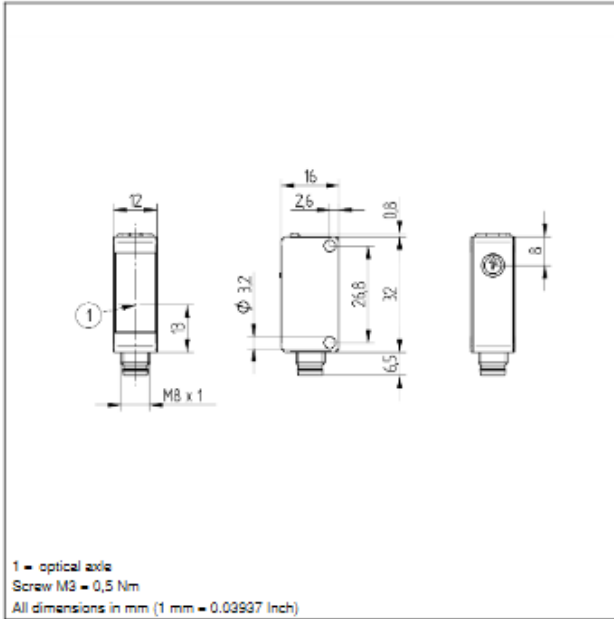


- Condition monitoring
- IO-Link 1.1
- No blind spot from single-lens optics
- Special for glass, PET and films

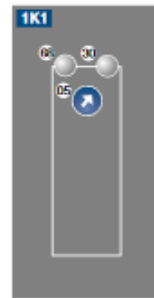
IO-Link smart

Technical Data

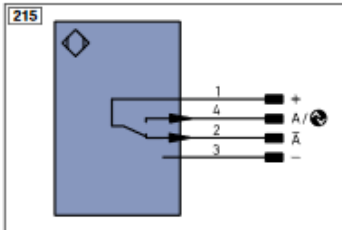
Optical Data	
Range	1500 mm
Reference Reflector/Reflector Foil	RQ100BA
Clear Glass Recognition	yes
Smallest Recognizable Part	see Table 2
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 24 V)	< 20 mA
Switching Frequency	2000 Hz
Switching frequency (speed mode)	3500 Hz
Response Time	0,25 ms
Response time (speed mode)	0,14 ms
Temperature Drift	< 5 %
Temperature Range	-40...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 µA
Short Circuit and Overload Protection	yes
Reverse Polarity Protection	yes
Lockable	yes
Interface	IO-Link V1.1
Protection Class	III
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M8 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2414 a
IO-Link	●
PNP NO/NC antivalent	●
Connection Diagram No.	215
Control Panel No.	1K1
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400



Ctrl. Panel



- 05 - Switching Distance Adjuster
- 80 - Switching Status/Contamination Warning
- 88 - Supply Voltage Indicator



Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN _{max}	Encoder A/Ā (TTL)
-	Supply Voltage 0 V	nc	not connected	EN _{min}	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN _A	Encoder A
A	Switching Output (NC)	Ū	Test Input inverted	EN _B	Encoder B
Ā	Switching Output (NC)	W	Trigger Input	A _{min}	Digital output MIN
V	Contamination/Error Output (NC)	W-	Ground for the Trigger Input	A _{max}	Digital output MAX
V̄	Contamination/Error Output (NC)	O	Analog Output	A _{ok}	Digital output OK
E	Input (analog or digital)	O-	Ground for the Analog Output	SY _{in}	Synchronization In
T	Teach Input	RZ	Block Discharge	SY _{OUT}	Synchronization OUT
Z	Time Delay (activation)	AW	Valve Output	Dur	Brightness output
S	Shielding	a	Valve Control Output +	M	Maintenance
RxD	Interface Receive Path	b	Valve Control Output 0 V	r5*	reserved
TxD	Interface Send Path	SY	Synchronization	Wire Colors according to DIN IEC 757	
RDY	Ready	SY-	Ground for the Synchronization	BK	Black
GND	Ground	E+	Receiver-Line	BN	Brown
CL	Clock	S+	Emitter-Line	RD	Red
E/A	Output/Input programmable	±	Grounding	OG	Orange
IO-Link		SrR	Switching Distance Reduction	YE	Yellow
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path	GN	Green
IN	Safety Input	Tx+/-	Ethernet Send Path	BU	Blue
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
Signal	Signal Output	La	Emitted Light disengageable	GY	Grey
BLD	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation	WH	White
EN _{0-pulse}	Encoder 0-pulse 0-0̄ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactur Monitoring	GNYE	Green/Yellow

Z90R004

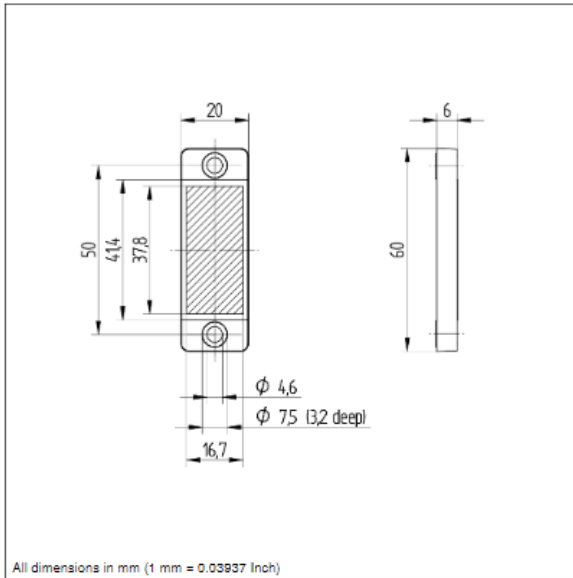
Part Number



Technical Data

Mechanical Data	
Structure	Continuous Structure
Mounting Type	Fixing Holes
Orientation with respect to the sensor	horizontal; vertical
Material	Plastic
Temperature Range	-40...65 °C
Packaging unit	1 Piece

- With fixing holes



2 Rear photocell option

Its function is to monitor the level of the parts inside the tank. Control of the quantity of parts on the vibrator is ensured by a photocell pointing to the rear of the hopper and a reflector mounted in the rear door. The photocell is supplied with a 4-pole cable 5M long.

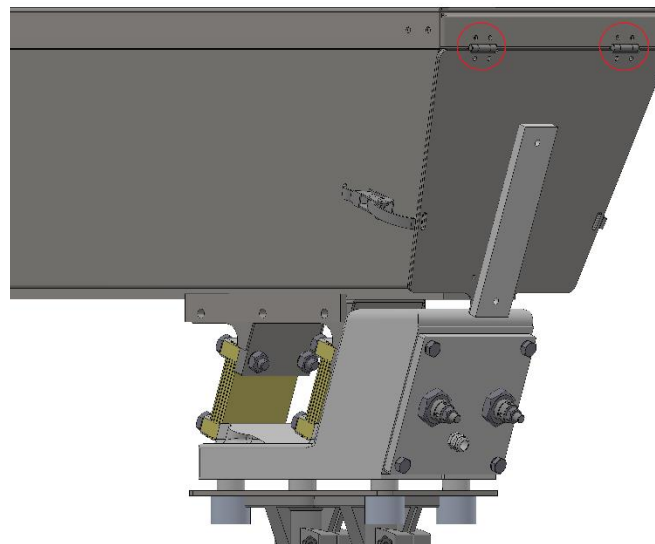
The signal from the photocell can be used for various purposes including, requesting recharging of components on it by an operator or an upstream system (e.g. a motorised hopper).



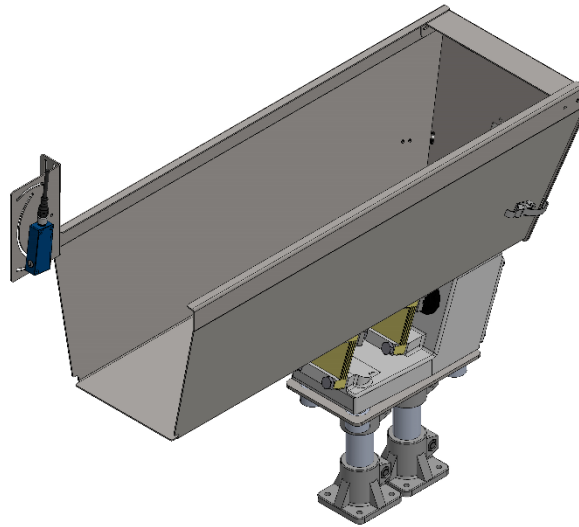
2.1 Installation

Proceed as follows for installation:

- Remove the 4 screws securing the rear tank door to the hinges.
- Replace the door supplied with the hopper with the one with a reflector already installed.
- Tighten the 4 screws again, checking that the hopper door closes properly.



- Install the photocell at the front of the hopper, above the outlet. The photocell mounting bracket is fitted with slots for adjusting its inclination.



Note: Ars Automation is not responsible for fixing the reflector to the structure. It is the customer's responsibility to design a fixing system that is compatible with the operation of the system and the characteristics of the reflector as given in the datasheet.

2.2 Technical specifications

With regards to the features of the photocell and reflector, please refer to the manufacturer's datasheets below

P1NL101

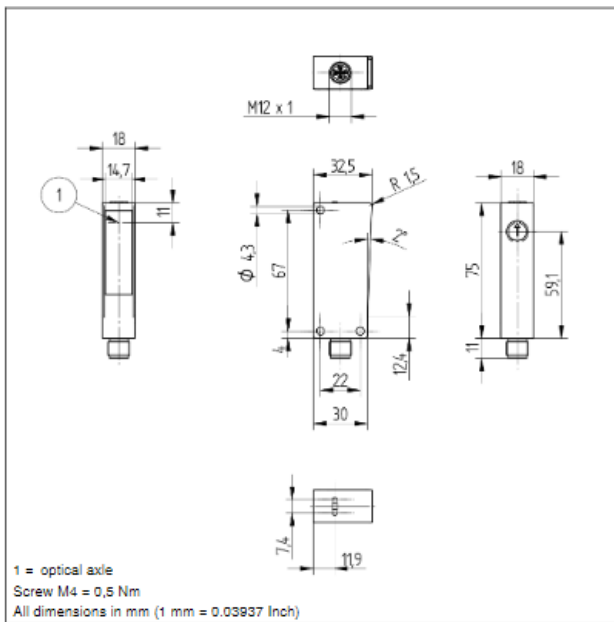
Part Number



- Also suitable for glossy and reflective objects
- Condition monitoring
- High switching frequency
- IO-Link 1.1
- No blind spot from single-lens optics

Technical Data

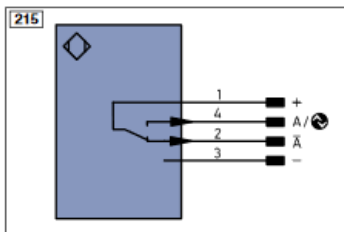
Optical Data	
Range	7000 mm
Reference Reflector/Reflector Foil	RQ100BA
Min. Distance to Reflector	0 mm
Smallest Recognizable Part	see Table 2
Switching Hysteresis	< 15 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 24 V)	< 20 mA
Switching Frequency	2000 Hz
Switching frequency (speed mode)	3500 Hz
Response Time	0,25 ms
Response time (speed mode)	0,14 ms
Temperature Drift	< 10 %
Temperature Range	-40...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	IO-Link V1.1
Protection Class	III
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2690,44 a
IO-Link	●
PNP NO/NC antivalent	●
Connection Diagram No.	215
Control Panel No.	A28
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	350



Ctrl. Panel



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = Supply Voltage Indicator



Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN _{max}	Encoder A/ \bar{A} (TTL)
-	Supply Voltage 0 V	nc	not connected	EN _{min}	Encoder B/ \bar{B} (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN _A	Encoder A
A	Switching Output (NO)	U $\bar{}$	Test Input inverted	EN _B	Encoder B
\bar{A}	Switching Output (NC)	W	Trigger Input	AW _{min}	Digital output MIN
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input	AW _{max}	Digital output MAX
\bar{V}	Contamination/Error Output (NC)	O	Analog Output	AOK	Digital output OK
E	Input (analog or digital)	O-	Ground for the Analog Output	SY _{in}	Synchronization In
T	Teach Input	BZ	Block Discharge	SY _{OUT}	Synchronization OUT
Z	Time Delay (activation)	AWV	Valve Output	OUT	Brightness output
S	Shielding	a	Valve Control Output +	M	Maintenance
RxD	Interface Receive Path	b	Valve Control Output 0 V	rsv	reserved
TxD	Interface Send Path	SY	Synchronization	Wire Colors according to DIN IEC 757	
RDY	Ready	SY-	Ground for the Synchronization	BK	Black
GND	Ground	E+	Receiver-Line	BN	Brown
CL	Clock	S+	Emitter-Line	RD	Red
E/A	Output/Input programmable	\mp	Grounding	OG	Orange
	IO-Link	SnR	Switching Distance Reduction	YE	Yellow
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path	GN	Green
IN	Safety Input	Tx+/-	Ethernet Send Path	BU	Blue
SSSD	Safety Output	B _{ue}	Interfaces-Bus A(+)/B(-)	VT	Violet
Signal	Signal Output	La	Emitted Light disengageable	GY	Grey
B _{LD} +	Ethernet Gigabit bidirect. data line (A-D)	M _{sg}	Magnet activation	WH	White
EN _{0-pulse}	Encoder 0-pulse 0- $\bar{0}$ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactur Monitoring	GNYE	Green/Yellow

Reflector for hopper 5/10/20It

Reflector
82 × 22,5 × 7,5 mm

RE8222BA

Part Number

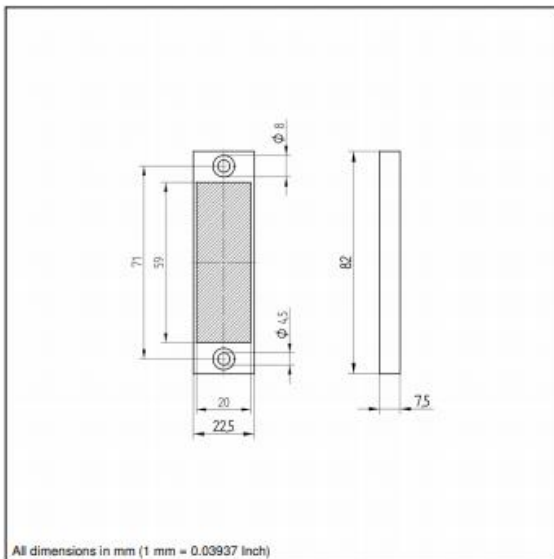


Technical Data

Mechanical Data	
Structure	Macro Structure
Mounting Type	Fixing Holes
Material	Plastic
Degree of Protection	IP67
Temperature Range	-20...60 °C
Packaging unit	1 Piece



- With fixing holes



Reflector for hopper 40It

Reflector
180 × 41 × 8 mm

RE18040BA

Part Number



Technical Data

Mechanical Data	
Structure	Macro Structure
Mounting Type	Fixing Holes
Material	Plastic
Degree of Protection	IP67
Temperature Range	-20...60 °C
Packaging unit	1 Piece

- With fixing holes

