



ZoneControl®

OUT OF THE STONE AGE, AND INTO THE ZONE AGE

MultiTask photoelectric sensors

SICK
Sensor Intelligence.



Out of the Stone Age, and into the Zone Age

ZoneControl-Stop and Go, without a PLC



The three parts of a ZoneControl Solution

Just as traffic lights handle the flow of cars in big cities, SICK ZoneControl solutions control product traffic on a conveyor without a PLC or other external control. Accumulation conveyor is used to accumulate and release product with zero forward pressure on product, which is accomplished with SICK ZoneControl. This eliminates the risk of product damage or derailment and increases control of individual packages. SICK ZoneControl is made up of three product families designed to control this traffic, known as Zero Pressure Accumulation (ZPA). Installation of ZoneControl solutions – via plug and play – is incredibly simple: daisy chain the ZoneControl products to one another, install the sensor, and connect the pneumatic line or connection to motor rollers. No programming of a PLC, no laptop, and no expensive wiring is required.

- 1 **Sensor**
 - Reliable detection of conveyed product
- 2 **Integrated Logic**
 - No PLC, No Laptop
 - Sensors are Daisy Chained together
- 3 **Direct Output to Conveyor**
 - Pneumatic or
 - Motor Drive Rollers(MDR)

Variants

Each of these products, when daisy chained together, create one of two types of accumulation logic: **Single Accumulation** (with/without sleep) and **Block (Slug) Accumulation**, depending on what the application requires. To accommodate various mounting requirements, there are three different-versions with different mounting configurations:

- between the rollers (**R/IR**), from page 4
- side frame mount (**ZLM**), from page 12
- over the conveyor (**WLR**), from page 16

Whether you are conveying product with pneumatic actuators or motor-driven rollers, the ZoneControl family makes ZPA easy.

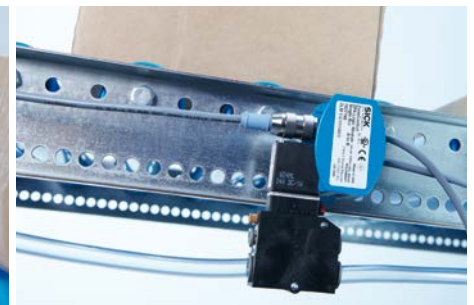
R/IR



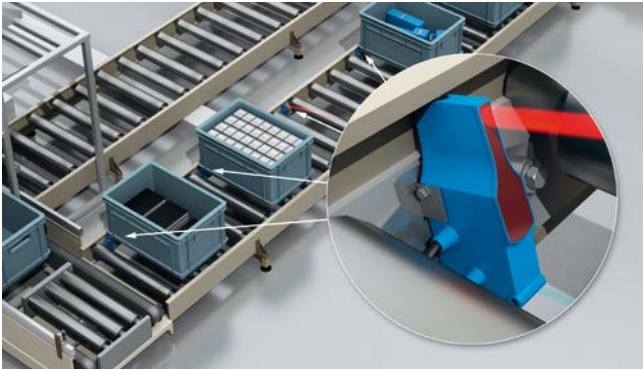
WLR



ZLM

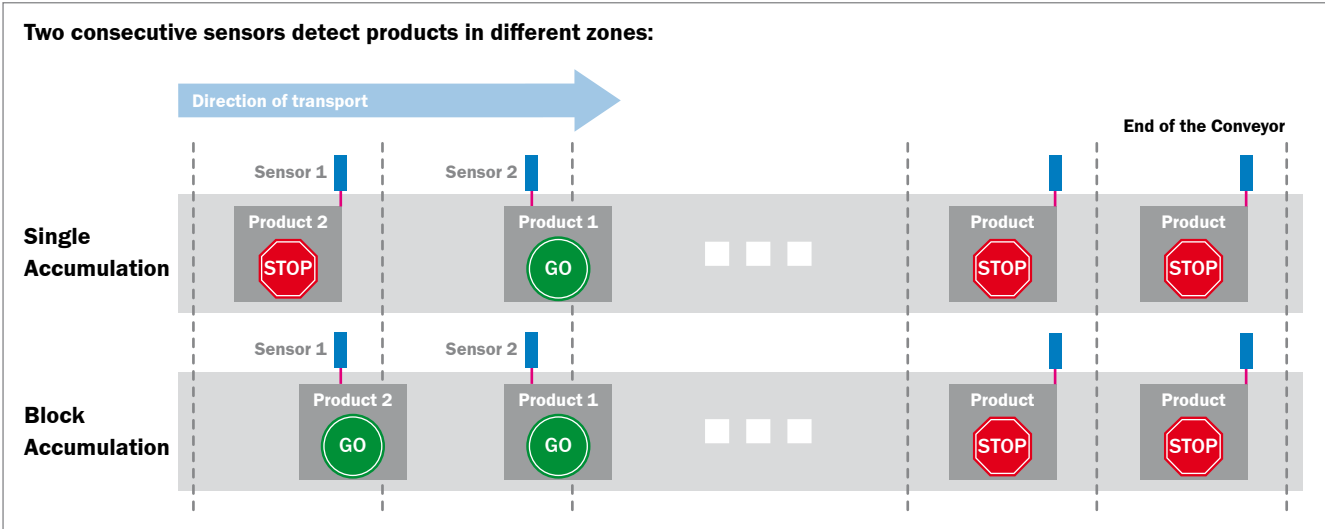


Accumulation Logic



Single accumulation logic(with/without Sleep) stops transfer of product in the upstream zone of any two consecutive zones that are detecting product. Sleep stops the downstream zone of any two consecutive zones that are not detecting products for 9s.

Block(Slug) accumulation logic will allow a large block or slug of product to travel uninterrupted to the furthest downstream zone, typically the discharge zone. The conveyor will not accumulate (deactivate) any zone until product reaches the furthest downstream zone.

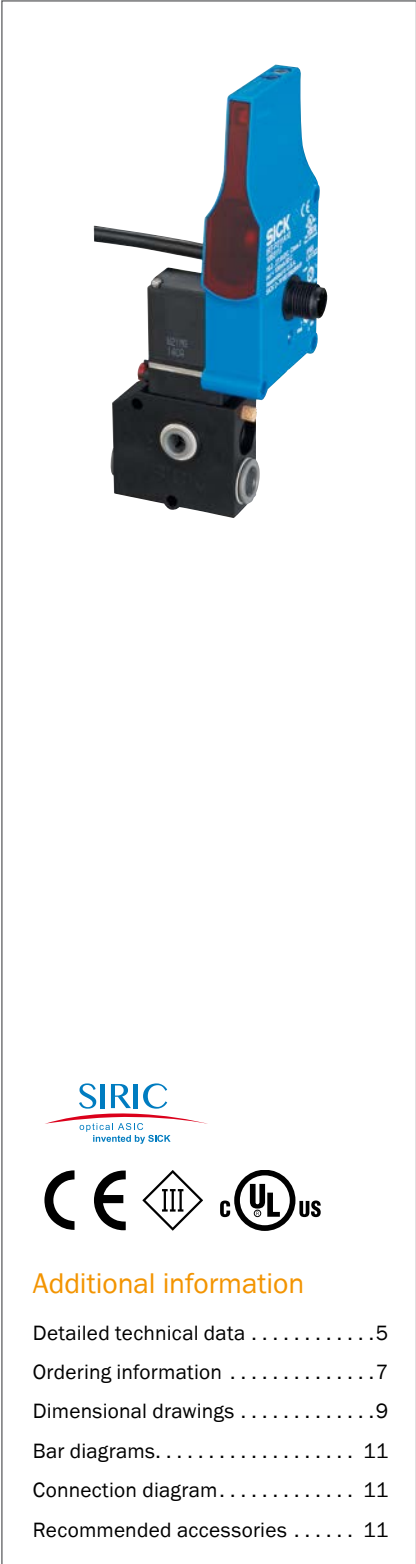


Overview

	1 2 3			Mounting			Logic		Release		Features				Page	
	Sensor	Logic	Valve	Between the Rollers	Side Mount	Above the Conveyor	Single Accumulation	Block(Slug) Accumulation	Single Release	Block (Slug) Release	Max. Detection Distance (mm)	Enclosure rating	AC	Compatible with Motor Rollers		Connection to external valve
R	■			■							900	IP 67	■			4
IR	■	■	■	■			■		■	■	900	IP 65		■	■	4
WLR	■	■				■	■	■	■	■	9,000	IP 67	■		■	12
ZLM	... ¹⁾	■	■		■		■	■	■	■	... ¹⁾	IP 65				16

¹⁾ Connection for all discrete DC sensors.

ZERO PRESSURE ACCUMULATION MADE EASY



Product description

Just as traffic lights handle the flow of cars in big cities, SICK ZoneControl solutions control product traffic on a conveyor without any other PLC or other external control. SICK ZoneControl is made up of three product families designed to control this traffic, known as Zero Pressure Accumulation (ZPA). Installation of ZoneControl solutions – via plug and play – is incredibly simple: daisy chain the ZoneControl products to one another, install the sensor, and connect the pneumatic line or connection to

motor rollers. No programming of a PLC, no laptop, and no expensive wiring is required. Each of these products creates one of two types of accumulation logic: Single Accumulation (with/without sleep) and Block (Slug) Accumulation, depending on what the application requires. To accommodate various mounting requirements, there are three different versions with different mounting configurations: between the rollers (R/IR), side frame mount (ZLM) and over the conveyor (WLR).

At a glance

- Three mounting versions: between the rollers (IR/R), side frame mount (ZLM) and over the conveyor (WLR)
- Three types of logic: single accumulation, single accumulation with sleep, block (slug) accumulation
- Up to 50 ZoneControl solutions can be cascaded in one string
- Fully animated simulation to ease selection and implementation
- Standard zone lengths of 1m (3ft) or 2m (6 ft)

Your benefits

- Largest Zero Pressure Accumulation portfolio on the market gives users a wide variety of choices for their application
- SICK ZoneControl solutions control the flow of packages a on conveyor without a PLC or other external control.
- Quick setup since no programming, no laptop, and no PLC interfacing are required
- With 20 years of ZoneControl experience and personal support from SICK experts, all application and product issues are quickly addressed
- Quick expansion or modification of the conveyor due to the modular design

Additional information

Detailed technical data 5
 Ordering information 7
 Dimensional drawings 9
 Bar diagrams. 11
 Connection diagram. 11
 Recommended accessories 11

→ www.mysick.com/en/ZoneControl

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

	R DC	R AC/DC	IR DC
Sensor principle	Photoelectric proximity sensor		
Detection principle	Background suppression		
Actuator	-		Pneumatic, valve on board Pneumatic, valve supplied separately Electrical (depending on type)
Max. number of sensors	Ca. 30 ¹⁾ / Ca. 50 ²⁾		
Logical principle of operation	-		Single accumulation / Single accumulation with sleep (depending on type)
Type of Release	-		Single release / block (slug) release / single release (depending on type)
Dimensions (W x H x D)	20.6 mm x 99.2 mm x 48.9 mm		50 mm x 147.4 mm x 48.9 mm 59.9 mm x 151.9 mm x 48.9 mm 20.6 mm x 99.2 mm x 48.9 mm (depending on type)
Housing design (light emission)	Fitting roller spacings		
Sensing range	60 mm ... 900 mm		
Type of light	Infrared light		
Light source ³⁾	LED		
Light spot size (distance)	Ø 20 mm (500 mm)		
Angle of dispersion	7°		
Adjustment	Potentiometer, 9 turns		
Time type	Switch on delay / time delay off (depending on type)	Time delay off / switch on delay (depending on type)	-
Delay time	0 s ... 5 s		-

¹⁾ When power from the end of the IR daisy chain.

²⁾ When power from center of the IR daisy chain.

³⁾ Average service life of 100,000 h at T_A = +25 °C .

Mechanics/electronics

	R DC	R AC/DC	IR DC
Supply voltage	10 V DC ... 30 V DC	≤ 250 V AC/DC ¹⁾	10 V DC ... 30 V DC
Ripple	< 5 V _{ss}		
Power consumption ²⁾	< 20 mA	< 100 mA	< 20 mA
Output type	PNP ³⁾ NPN PNP, NPN ³⁾ (depending on type)	FET switch	Valve/PNP
Switching mode	Light switching Dark-switching Light/dark-switching ³⁾ (depending on type)	Light switching Dark-switching (depending on type)	Dark-switching
Signal voltage PNP HIGH / LOW	Approx. V _S - 0.5 V / 0 V	-	Approx. V _S - 0.5 V / 0 V
Signal voltage NPN HIGH / LOW	Approx. V _S / < 2.0 V	-	-

	R DC	R AC/DC	IR DC
Output current I_{max}	≤ 100 mA		
Response time	2 ms		
Switching frequency	± 250 Hz		
Connection type	Connector, M12 ⁴⁾ Cable, 2 m ⁴⁾ (depending on type)	Cable, 2 m ⁴⁾	Connector, M12 ⁴⁾
Connection type for daisy chain	-		Cable with connector M12, 4-pin
Circuit protection	A ⁵⁾ , C ⁶⁾ , D ⁷⁾		
Protection class	III		
Weight	175 g		
Housing material	ABS		
Enclosure rating	IP 67		IP 65
Shock/vibration	According to IEC 68		
Ambient operating temperature	-40 °C ... +60 °C	+10 °C ... +55 °C	-40 °C ... +60 °C
Ambient storage temperature	-40 °C ... +75 °C		

¹⁾ Limit values.

²⁾ Without load and valve deenergized.

³⁾ Selectable via light/dark rotary switch.

⁴⁾ Do not bend below 0 °C.

⁵⁾ A = V_s connections reverse-polarity protected.

⁶⁾ C = interference suppression.

⁷⁾ D = outputs overcurrent and short-circuit protected.

Pneumatic

	R DC	R AC/DC	IR DC
Coil ratings			
Valve, metric	-		24 V DC 1 W
Valve, imperial	-		24 V DC 1 W
Medium for valves	-		Compressed air or neutral gases filtered, non-lubricated or lubricated
Design solenoid valve	-		3/2-way valve
Connection type solenoid valve			
Valve, metric	-		Compressed air 2 x 8 mm diameter, output line 4 mm diameter
Valve, imperial	-		Control line 1/4 " diameter, compressed air 2x 3/8 " di- ameter: output line 2 x 1/4 " di- ameter, compressed air 2x 3/8 " diameter (depending on type)
Without magnetic valve	-		Cable with 9.4 mm DIN valve connector
Air flow rate			
Valve, metric	-		Ca. 20 NI/min
Valve, imperial	-		Ca. 1.4 SCFM
Ventilation capacity			
Valve, metric	-		Ca. 130 NI/min

	R DC	R AC/DC	IR DC
Valve, imperial	-		Ca. 1.4 SCFM
Operating pressure range			
Valve, metric	-		2 bar ... 8 bar
Valve, imperial	-		0 psi ... 65 psi

Ordering information

Other models available at www.mysick.com/en/ZoneControl

R DC

Switching mode	Output type	Time type	Connection	Connection diagram	Type	Part no.	
Light switching	PNP, NPN	-	Connector M12, 4-pin	Cd-256	RT-B1221	1063174	
			Cable, 4-wire, 2 m	Cd-251	RT-B1117	1063153	
Dark-switching	PNP, NPN	-	Connector M12, 4-pin	Cd-261	RT-B2221	1063175	
			Cable, 4-wire, 2 m	Cd-252	RT-B2117	1063178	
Light/dark-switching	PNP	-	Cable, 4-wire, 2 m	Cd-249	RT-P3117	1063179	
			Connector M12, 4-pin	Cd-255	RT-P3221	1063129	
			Connector M12, 4-pin	Cd-255	RTN-P3221	1063172	
			Cable, 4-wire, 2 m	Cd-249	RTN-P3117	1063182	
	NPN	-	Time delay off	Cable, 4-wire, 2 m	Cd-249	RTF-P3117	1063181
				Connector M12, 4-pin	Cd-255	RTF-P3221	1063171
				Connector M12, 4-pin	Cd-255	RT-N3221	1063162
				Cable, 4-wire, 2 m	Cd-249	RT-N3117	1063180
Light/dark-switching ¹⁾	PNP	-	Connector M12, 4-pin	Cd-258	RTQ-P4221	1063173	
			Cable, 4-wire, 2 m	Cd-250	RTQ-P4117	1063183	
	PNP, NPN	-	Connector M12, 4-pin	Cd-256	RTQ-B1221	1063177	
			Cable, 4-wire, 2 m	Cd-251	RTQ-B1117	1063184	

¹⁾ Selectable via light/dark rotary switch.

R AC/DC

- **Output type:** FET switch
- **Connection:** Cable, 4-wire, 2 m

Switching mode	Time type	Connection diagram	Type	Part no.
Light switching	-	Cd-247	RT-M1117	1063194
	Time delay off	Cd-247	RTF-M1117	1063195
	Switch on delay	Cd-247	RTN-M1117	1063196
Dark-switching	-	Cd-248	RT-M2117	1063197
	Time delay off	Cd-248	RTF-M2117	1063198
	Switch on delay	Cd-248	RTN-M2117	1063199

IR DC, Air to Drive (NC)

- **Actuator:** pneumatic, valve on board
- **Output type:** Valve
- **Connection:** Connector M12, 4-pin

Type of output	Connection type solenoid valve	Connection type for daisy chain	Connection diagram	Type	Part no.
Valve, metric	Compressed air 2 x 8 mm diameter, output line 4 mm diameter	Cable with connector M12, 4-pin 2 m	Cd-265	IRT-P212E40	1063108
Valve, imperial	Control line 1/4 " diameter, compressed air 2x 3/8 " diameter	Cable with connector M12, 4-pin 1.2 m	Cd-265	IRT-P211A10	1063117
		Cable with connector M12, 4-pin 2 m	Cd-265	IRT-P212A10	1063123

IR DC, Air to Brake (NO)

- **Actuator:** pneumatic, valve on board
- **Output type:** Valve
- **Connection:** Connector M12, 4-pin

Type of output	Connection type solenoid valve	Connection type for daisy chain	Connection diagram	Type	Part no.
Valve, metric	Compressed air 2 x 8 mm diameter, output line 4 mm diameter	Cable with connector M12, 4-pin 1.2 m	Cd-265	IRT-P211E41	1063107
		Cable with connector M12, 4-pin 2 m	Cd-265	IRT-P212E41	1063109
Valve, imperial	Output line 2 x 1/4 " diameter, compressed air 2x 3/8 " diameter Control line 1/4 " diameter, compressed air 2x 3/8 " diameter	Cable with connector M12, 4-pin 1.2 m	Cd-265	IRT-P211A11	1063118
		Cable with connector M12, 4-pin 2 m	Cd-265	IRT-P212A11	1063124

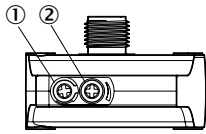
IR DC, HIGH to Drive

- **Output type:** Valve/PNP
- **Connection:** Connector M12, 4-pin

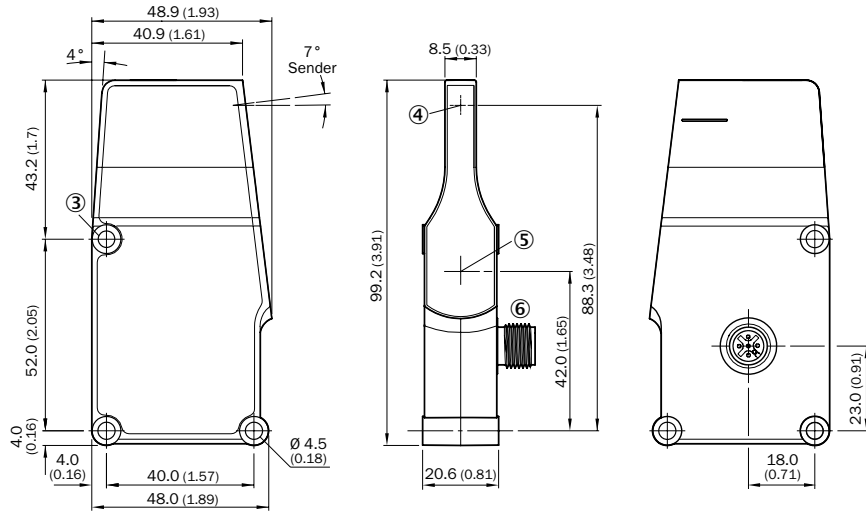
Type of output	Actuator	Connection type solenoid valve	Connection type for daisy chain	Connection diagram	Type	Part no.
Without magnetic valve	Pneumatic, valve supplied separately	Cable with 9.4 mm DIN valve connector	Cable with connector M12, 4-pin 1.2 m	Cd-265	IRT-P211C63	1063127
			Cable with connector M12, 4-pin 2 m	Cd-265	IRT-P212C63	1063116
For Motor Driven Rollers (MDR)	Electrical	-	Cable with connector M12, 4-pin 1.2 m	Cd-266	IRT-P231C83	1063101
			Cable with connector M12, 4-pin 2 m	Cd-266	IRT-P232C83	1063100

Dimensional drawings (Dimensions in mm (inch))

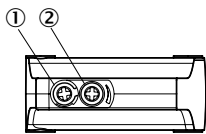
R / IR without valve



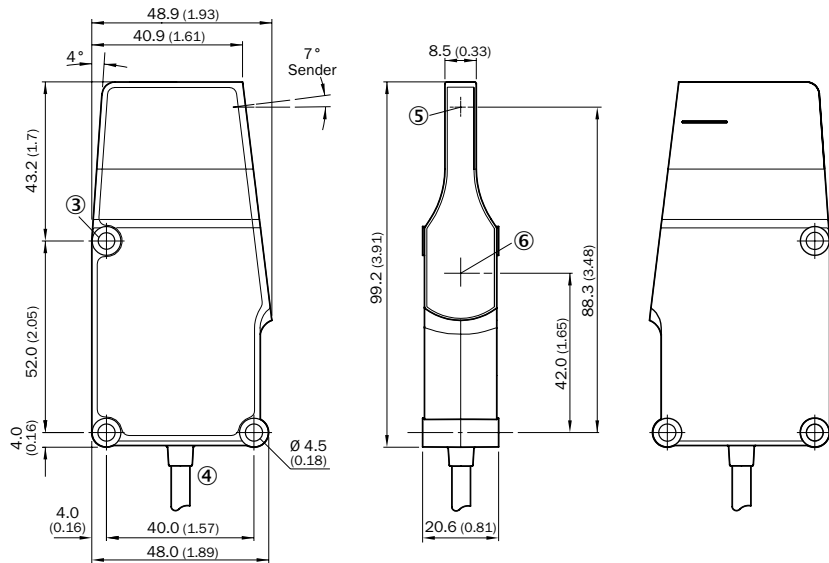
- ① LED
- ② Potentiometer
- ③ Mounting hole
- ④ Center of optical axis, sender
- ⑤ Center of optical axis, receiver
- ⑥ Connector M12, 4-pin



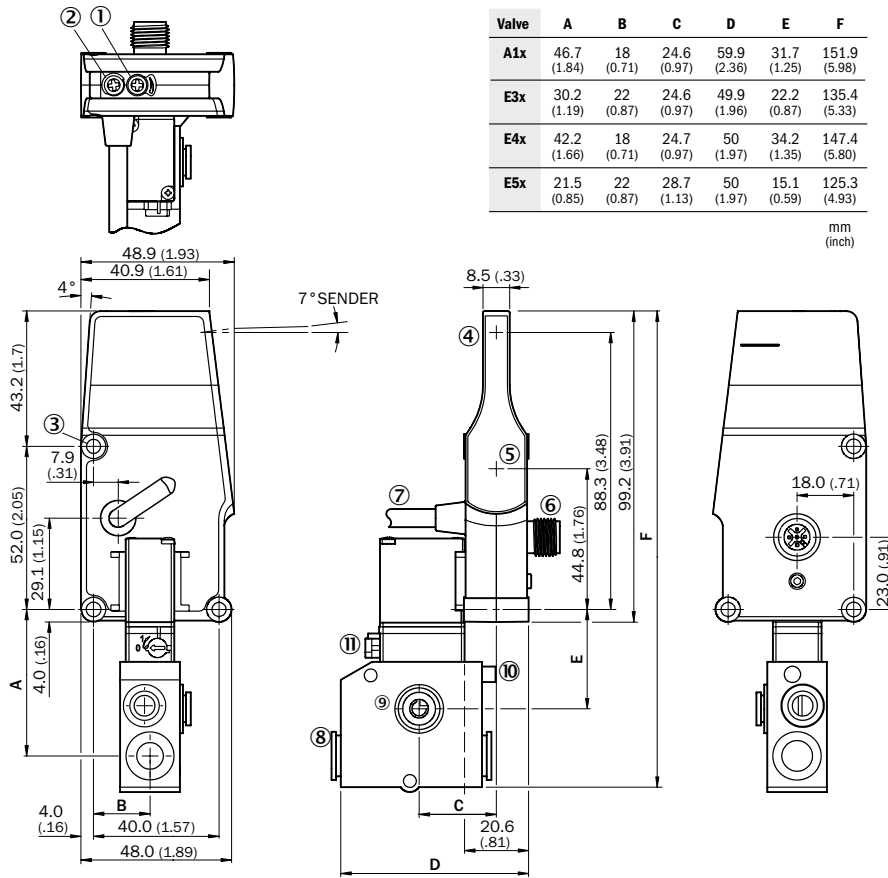
R cable



- ① LED
- ② Potentiometer
- ③ Mounting hole
- ④ Cable
- ⑤ Center of optical axis, sender
- ⑥ Center of optical axis, receiver



IR, valve metric/imperial

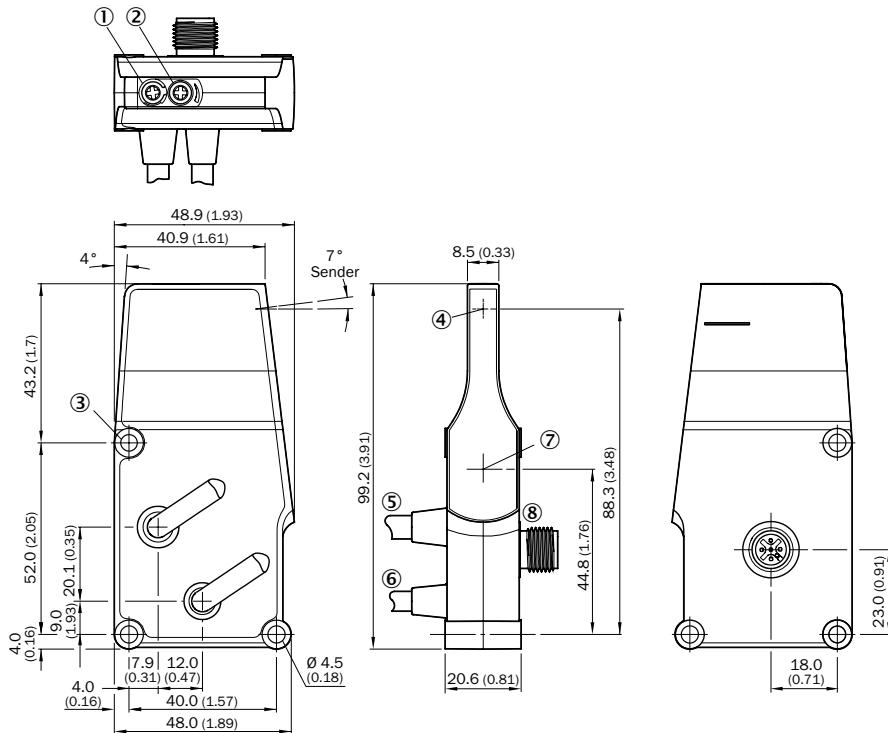


Valve	A	B	C	D	E	F
A1x	46.7 (1.84)	18 (0.71)	24.6 (0.97)	59.9 (2.36)	31.7 (1.25)	151.9 (5.98)
E3x	30.2 (1.19)	22 (0.87)	24.6 (0.97)	49.9 (1.96)	22.2 (0.87)	135.4 (5.33)
E4x	42.2 (1.66)	18 (0.71)	24.7 (0.97)	50 (1.97)	34.2 (1.35)	147.4 (5.80)
E5x	21.5 (0.85)	22 (0.87)	28.7 (1.13)	50 (1.97)	15.1 (0.59)	125.3 (4.93)

mm
(inch)

- ① Potentiometer
- ② LED
- ③ Mounting hole
- ④ Center of optical axis, sender
- ⑤ Center of optical axis, receiver
- ⑥ Connector M12, 4-pin
- ⑦ Daisy chain, cable with female connector

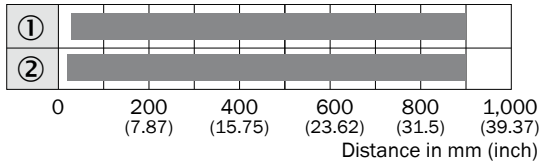
IR, for Motor Driven Rollers (MDR)



- ① LED
- ② Potentiometer
- ③ Mounting hole
- ④ Center of optical axis, sender
- ⑤ Daisy chain, cable with female connector
- ⑥ Connection for motor
- ⑦ Center of optical axis, receiver
- ⑧ Connector M12, 4-pin

Bar diagrams

Bar diagram photoelectric proximity sensors



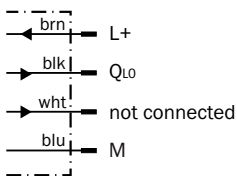
■ Sensing distance typ. max.

① Sensing range on black, 6% remission

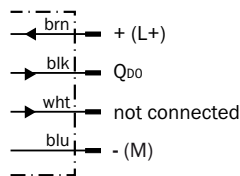
② Sensing range on white, 90% remission

Connection diagram

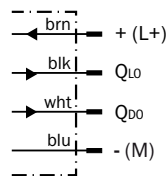
Cd-247



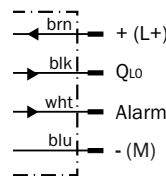
Cd-248



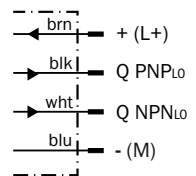
Cd-249



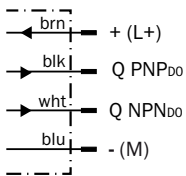
Cd-250



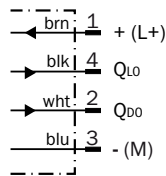
Cd-251



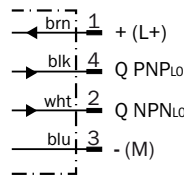
Cd-252



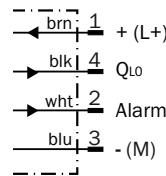
Cd-255



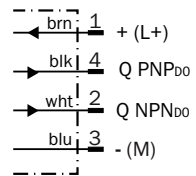
Cd-256



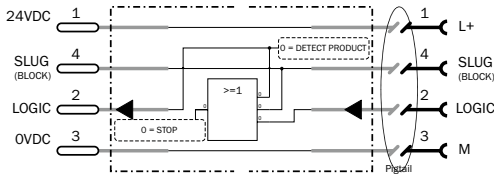
Cd-258



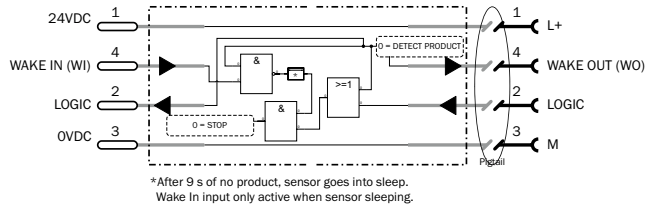
Cd-261



Cd-265



Cd-266



Recommended accessories

Adapters/distributors

T-junctions

Figure	Connecting cable	Connector material	Locking nut material	Description	Model name	Part no.
	0.3 m	TPU	CuZn, nickel-plated brass	Signal interrogation and logic interrupt	DSL-1104-T0M3	6011683
				Signal interrogation	DSL-1204-T0M3	6011682

Mounting brackets/plates

Mounting brackets

Figure	Material	Description	Model name	Part no.
	Steel, zinc coated	Mounting bracket	BEF-WK-WTR	2051786

ZERO PRESSURE ACCUMULATION MADE EASY



Product description

Just as traffic lights handle the flow of cars in big cities, SICK ZoneControl solutions control product traffic on a conveyor without any other PLC or other external control. SICK ZoneControl is made up of three product families designed to control this traffic, known as Zero Pressure Accumulation (ZPA). Installation of ZoneControl solutions – via plug and play – is incredibly simple: daisy chain the ZoneControl products to one another, install the sensor, and connect the pneumatic line or connection to

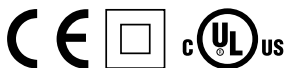
motor rollers. No programming of a PLC, no laptop, and no expensive wiring is required. Each of these products creates one of two types of accumulation logic: Single Accumulation (with/without sleep) and Block (Slug) Accumulation, depending on what the application requires. To accommodate various mounting requirements, there are three different versions with different mounting configurations: between the rollers (R/IR), side frame mount (ZLM) and over the conveyor (WLR).

At a glance

- Connects to any 9.4 mm DIN valve
- Single or slug accumulation
- Ideal for pneumatic actuators or motor-driven rollers
- Daisy chain connection cables included for zone lengths of 1m (3 ft) and 2 m (6 ft)
- AC power options

Your benefits

- Attach your choice of actuator to complete the ZoneControl Solution
- Linear polarized retro-reflective sensing technology eliminates false detection of shiny or plastic-wrapped objects
- The Daisy Chain means that last minute changes or adding a zone is a matter of minutes
- A sealed IP67 housing to withstand harsh environments and washdown
- Single or Block (slug) Accumulation Logic to maximize product throughput
- Output cable for connection to electric motor control or pneumatic valve



Additional information

Detailed technical data 13
 Ordering information 14
 Dimensional drawings 14
 Connection diagram 15

→ www.mysick.com/en/WLR

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

	Single accumulation	Block (slug) accumulation
Sensor principle	Photoelectric retro-reflective sensor	
Logical principle of operation	Single accumulation	Block (slug) accumulation
Type of Release	Single release, block (slug) release	Block (slug) release
Dimensions (W x H x D)	45 mm x 73.7 mm x 48.6 mm	
Housing design (light emission)	Rectangular	
Sensing range ¹⁾	0 m ... 9 m	
Type of light	Visible red light	
Light source ²⁾	LED	
Light spot size (distance)	Ø 205 mm (9 m)	

¹⁾ PL80A.

²⁾ Average service life of 100,000 h at $T_A = +25 \text{ °C}$.

Mechanics/electronics

Ripple	< 5 Vss
Power consumption ¹⁾	≤ 40 mA
Switching mode	Light switching
Response time	1 ms
Switching frequency	500 Hz
Connection type	Cable with connector, M12, 300 mm
Connection type for daisy chain	Cable with receptacle, M12, 4-pin
Circuit protection	A ²⁾ , C ³⁾ , D ⁴⁾
Protection class	II
Housing material	ABS
Enclosure rating	IP 67
Shock/vibration	According to IEC 68
Ambient operating temperature	-25 °C ... +55 °C
Ambient storage temperature	-40 °C ... +70 °C

¹⁾ Without load and valve deenergized.

²⁾ A = V_S connections reverse-polarity protected.

³⁾ C = interference suppression.

⁴⁾ D = outputs overcurrent and short-circuit protected.

Pneumatic

	Single accumulation	Block (slug) accumulation
Connection type solenoid valve	Spade, 1 m: spade, 2 m cable, 1 m, with 9.4 mm DIN valve connector cable, 2m, with 9.4 mm DIN valve connector (depending on type)	Cable, 1 m, with 9.4 mm DIN valve connector: cable, 2m, with 9.4 mm DIN valve connector (depending on type)

Ordering information

Other models available at www.mysick.com/en/WLR

Single accumulation

- **Housing design:** rectangular
- **Sensor principle:** Photoelectric retro-reflective sensor
- **Switching mode:** Light switching
- **Connection to sensor:** Cable with connector M12, 4-pin 300 mm

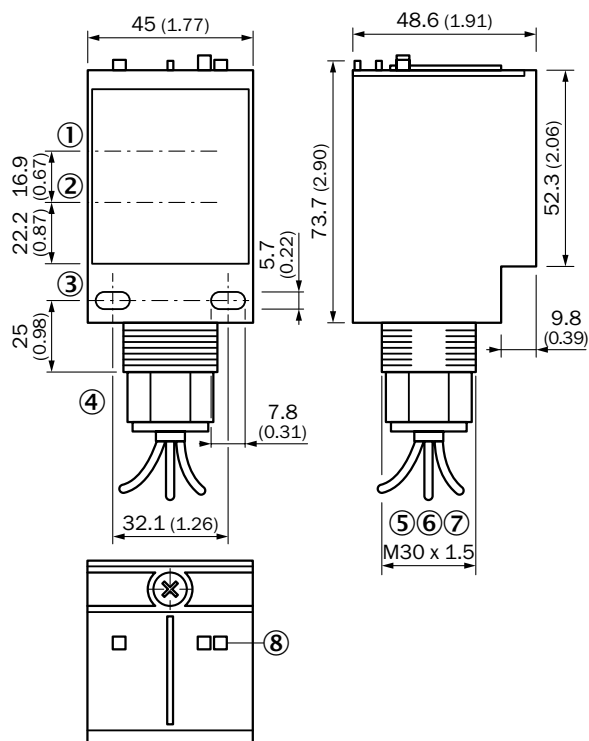
Connection type for daisy chain	Connection type solenoid valve	Connection diagram	Model name	Part no.
Cable with receptacle, M12, 4-pin, 1 m	Spade, 1 m	Cd-246	WLR2100-D1311	7027185
	Cable, 1 m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D2311	7027808
Cable with receptacle, M12, 4-pin, 2 m	Spade, 2 m	Cd-246	WLR2100-D1312	7027753
	Cable, 2m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D2312	7027811

Block (slug) accumulation

- **Housing design:** rectangular
- **Sensor principle:** Photoelectric retro-reflective sensor
- **Switching mode:** Light switching
- **Connection to sensor:** Cable with connector M12, 4-pin 300 mm

Connection type for daisy chain	Connection type solenoid valve	Connection diagram	Model name	Part no.
Cable with receptacle, M12, 4-pin, 1 m	Cable, 1 m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D1321	7027754
	Cable, 1 m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D2321	7027809
Cable with receptacle, M12, 4-pin, 2 m	Cable, 2m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D1322	7027755
	Cable, 2m, with 9.4 mm DIN valve connector	Cd-246	WLR2100-D2322	7027810

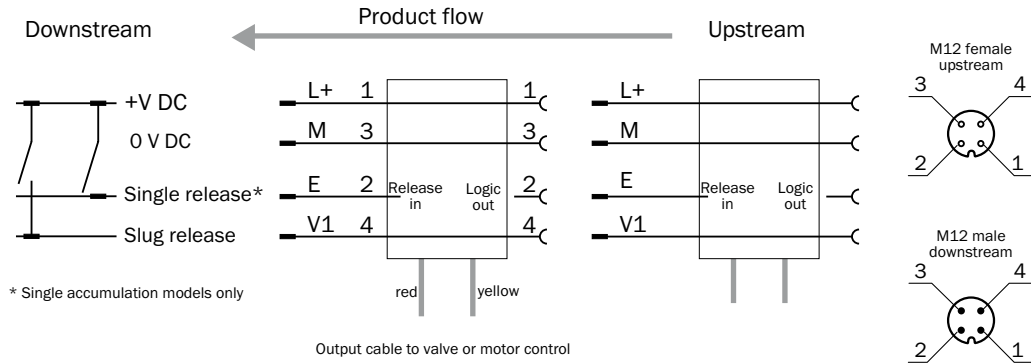
Dimensional drawings (Dimensions in mm (inch))



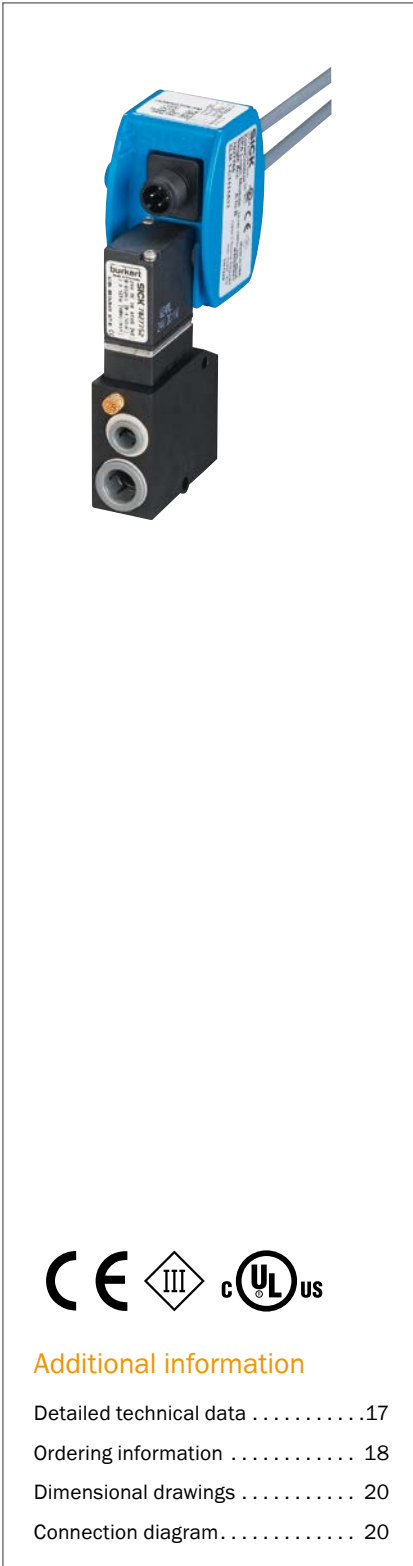
- ① Sender
- ② Receiver
- ③ Fastening threads
- ④ Threaded mounting hole
- ⑤ Daisy chain, cable with female connector
- ⑥ Cable
- ⑦ Daisy chain connector, male
- ⑧ Status indicator: LED

Connection diagram

Cd-246



SIDE-MOUNTED CONVEYOR MODULE WITH ZONE CONTROL INTELLIGENCE



Product description

Just as traffic lights handle the flow of cars in big cities, SICK ZoneControl solutions control product traffic on a conveyor without any other PLC or other external control. SICK ZoneControl is made up of three product families designed to control this traffic, known as Zero Pressure Accumulation (ZPA). Installation of ZoneControl solutions – via plug and play – is incredibly simple: daisy chain the ZoneControl products to one another, install the sensor, and connect the pneumatic line or connection to

motor rollers. No programming of a PLC, no laptop, and no expensive wiring is required. Each of these products creates one of two types of accumulation logic: Single Accumulation (with/without sleep) and Block (Slug) Accumulation, depending on what the application requires. To accommodate various mounting requirements, there are three different versions with different mounting configurations: between the rollers (R/IR), side frame mount (ZLM) and over the conveyor (WLR).

At a glance

- Connects to any discrete DC voltage sensor
- Single or slug accumulation
- Ideal for pneumatic actuators
- Daisy chain connection cable included for zone lengths of 1m (3ft) or 2m (6 ft)
- Bolt-on or clip-on installation into the conveyor's side frame

Your benefits

- Sensor Cable integrated for you to attach nearly any sensor
- SICK's most compact ZoneControl solution, you won't even know it's there
- Single or Block (slug) Accumulation Logic to maximize product throughput
- The Daisy Chain means that last minute changes or adding a zone is a matter of minutes



Additional information

Detailed technical data	17
Ordering information	18
Dimensional drawings	20
Connection diagram	20

→ www.mysick.com/en/ZLM

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

	ZLM ZLM-B	ZLM ZLM-C
Actuator	Pneumatic, valve on board	
Max. number of sensors	Ca. 30 ¹⁾ Ca. 50 ²⁾	
Logical principle of operation	Single accumulation / block (slug) accumulation (depending on type)	
Type of Release	Single release / block (slug) release / block (slug) release (depending on type)	
Dimensions (W x H x D)	31 mm x 110 mm x 83 mm 31 mm x 93 mm x 74 mm 31 mm x 105 mm x 74 mm (depending on type)	30 mm x 110 mm x 70 mm
Housing design (light emission)	Bolt-on mounting	Clip-on mounting
Time type	Time delay off	–
Delay time	0 s ... 2 s	–

¹⁾ When power from the end of the IR daisy chain.

²⁾ When power from center of the IR daisy chain.

Mechanics/electronics

	ZLM ZLM-B	ZLM ZLM-C
Supply voltage	≥ 21.6 V DC ¹⁾	≥ 21.6 V DC ¹⁾
Ripple	< 5 Vss	
Power consumption ³⁾	< 60 mA	
Output type	PNP	
Signal voltage PNP HIGH / LOW	Approx. $V_s - 0.5 V / 0 V$	
Output current I_{max}	100 mA	
Response time	2.5 ms	
Switching frequency	200 Hz	
Connection type	Cable with receptacle, 0.5 m ⁴⁾ Cable with receptacle, 1.1 m ⁴⁾ (depending on type)	Cable with receptacle, 0.5 m ⁴⁾
Connection type for daisy chain	Cable with connector M12, 4-pin / Cable with push-on connector M12, 4-pin (depending on type)	Cable with push-on connector M12, 4-pin / Cable with connector M12, 4-pin (depending on type)
Circuit protection	A ⁵⁾ , C ⁶⁾ , D ⁷⁾	
Protection class	III ⁸⁾	
Housing material	ABS	
Enclosure rating	IP 40	
Shock/vibration	According to IEC 68	
Ambient operating temperature	-10 °C ... +55 °C	
Ambient storage temperature	-40 °C ... +75 °C (depending on type)	-40 °C ... +75 °C
Mounting system type	Side-Frame-Mount	

¹⁾ Limit values.

²⁾ Limit values, the device may connect only to protected extra low voltage.

³⁾ Without load and valve deenergized.

⁴⁾ Do not bend below 0 °C.

⁵⁾ A = V_s connections reverse-polarity protected.

⁶⁾ C = interference suppression.

⁷⁾ D = outputs overcurrent and short-circuit protected.

⁸⁾ Reference voltage 50 V DC.

Pneumatic

		ZLM ZLM-B	ZLM ZLM-C
Coil ratings	Valve, imperial	24 V DC 1 W	
	Valve, metric	24 V DC 2 W / 24 V DC 1 W (depending on type)	-
Medium for valves		Compressed air or neutral gases filtered, non-lubricated or lubricated	
Design solenoid valve ¹⁾		3/2-way valve	
Connection type solenoid valve	Valve, imperial	Compressed air 3/8 " diameter, control line 1/4 " diameter	
	Valve, metric	Compressed air 2 x 8 mm diameter, output line 4 mm diameter	-
Air flow rate	Valve, imperial	40 NI/min	
	Valve, metric ²⁾	Ca. 20 NI/min	-
Ventilation capacity	Valve, imperial	40 NI/min	
	Valve, metric	Ca. 100 NI/min / ca. 130 NI/min (depending on type)	-
Operating pressure range	Valve, imperial	0 bar ... 4.5 bar	
	Valve, metric	0.5 bar ... 8 bar ³⁾ (depending on type)	-
Response time solenoid valve		Partially open 10 ms Open 23 ms Close 21 ms	

¹⁾ Other valve types available on request.

²⁾ P - A.

³⁾ In combination with cylinders with small air volume we recommend tests.

Ordering information

Other models available at www.mysick.com/en/ZLM

Bolt-on mounting, Air to Drive (NC)

- **Connection diagram:** Cd-263

Type of output	Logical principle of operation	Ventilation capacity	Operating pressure range	Connection to sensor	Connection type for daisy chain	Model name	Part no.
Valve, imperial	Single accumulation	40 NI/min	0 bar ... 4.5 bar	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 1.2 m	ZLM1-B1111A10	7027768
					Cable with connector M12, 4-pin 2 m	ZLM1-B1211A10	7027784
				Cable with receptacle, M12 push-on, 4-pin 0.5 m	Cable with push-on connector M12, 4-pin 1.2 m	ZLM1-B1451A10	1052126
	Block (slug) accumulation	40 NI/min	0 bar ... 4.5 bar	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 1.2 m	ZLM1-B2111A10	7027770
					Cable with connector M12, 4-pin 2 m	ZLM1-B2211A10	7027786
Valve, metric	Single accumulation	Ca. 130 NI/min	2 bar ... 8 bar ¹⁾	Cable with receptacle, M12, 4-pin 1.1 m PVC	Cable with connector M12, 4-pin 1.2 m	ZLM1-B1612E42	7028842

¹⁾ In combination with cylinders with small air volume we recommend tests.

Bolt-on mounting, Air to Brake (NO)

- **Connection diagram:** Cd-263

Type of output	Logical principle of operation	Ventilation capacity	Operating pressure range	Connection to sensor	Connection type for daisy chain	Model name	Part no.
Valve, imperial	Single accumulation	40 NI/min	0 bar ... 4.5 bar	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 1.2 m	ZLM1-B1111A11	7027769
					Cable with connector M12, 4-pin 2 m	ZLM1-B1211A11	7027785
	Block (slug) accumulation	40 NI/min	0 bar ... 4.5 bar	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 2 m	ZLM1-B2211A11	7027787
					Cable with connector M12, 4-pin 1.2 m	ZLM1-B2111A11	7027771
Valve, metric	Single accumulation	Ca. 100 NI/min	0.5 bar ... 8 bar ¹⁾	Cable with receptacle, M12, 4-pin 1.1 m PVC	Cable with connector M12, 4-pin	ZLM1-B5612E41	7028428
		Ca. 130 NI/min	2 bar ... 8 bar ¹⁾	Cable with receptacle, M12, 4-pin 1.1 m PVC	Cable with connector M12, 4-pin	ZLM1-B1612E43	7028843

¹⁾ In combination with cylinders with small air volume we recommend tests.

Clip-on mounting Air to Drive (NC)

- **Type of output:** Valve, imperial
- **Ventilation capacity:** 40 NI/min
- **Operating pressure range:** 0 bar ... 4.5 bar
- **Connection diagram:** Cd-263

Logical principle of operation	Connection to sensor	Connection type for daisy chain	Model name	Part no.
Single accumulation	Cable with receptacle, M12 push-on, 4-pin 0.5 m	Cable with push-on connector M12, 4-pin 1.2 m	ZLM1-C1451A10	7029987
		Cable with connector M12, 4-pin 1.2 m	ZLM1-C1111A10	7027764
	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 2 m	ZLM1-C1211A10	7027780
Block (slug) accumulation	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 2 m	ZLM1-C2211A10	7027782

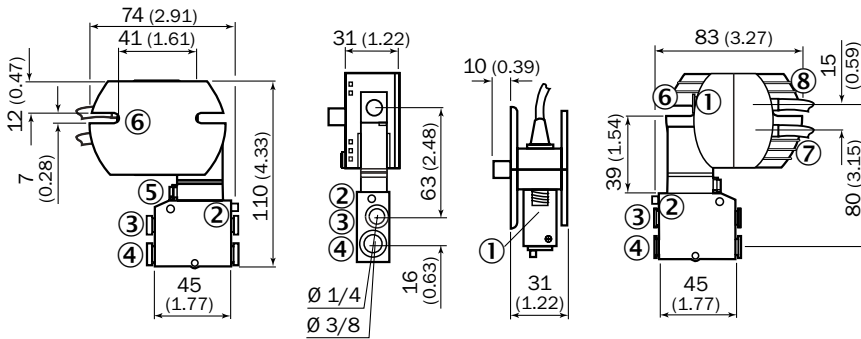
Clip-on mounting Air to Brake (NO)

- **Type of output:** Valve, imperial
- **Ventilation capacity:** 40 NI/min
- **Operating pressure range:** 0 bar ... 4.5 bar
- **Connection diagram:** Cd-263

Logical principle of operation	Connection to sensor	Connection type for daisy chain	Model name	Part no.
Single accumulation	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 2 m	ZLM1-C1211A11	7027781
		Cable with connector M12, 4-pin 1.2 m	ZLM1-C1111A11	7027765
	Cable with receptacle, M12 push-on, 4-pin 0.5 m	Cable with push-on connector M12, 4-pin 1.2 m	ZLM1-C1451A11	7029988
Block (slug) accumulation	Cable with receptacle, M12, 4-pin 0.5 m	Cable with connector M12, 4-pin 1.2 m	ZLM1-C2111A11	7027767
		Cable with connector M12, 4-pin 2 m	ZLM1-C2211A11	7027783

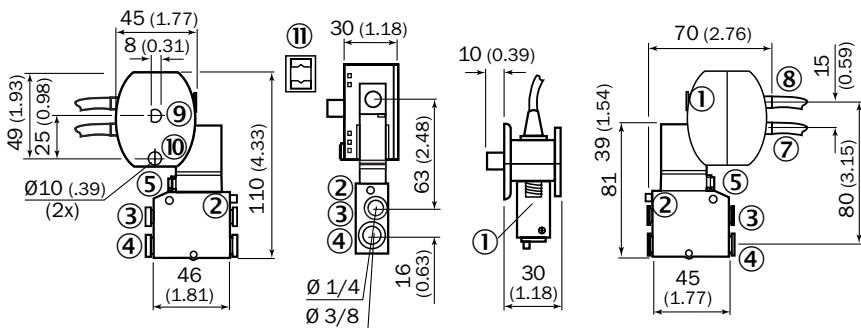
Dimensional drawings (Dimensions in mm (inch))

ZLM-B



- ① Daisy chain connector, male
- ② Exhaust
- ③ Output port (x1)
- ④ Media connector (x2)
- ⑤ Manual override switch
- ⑦ Daisy chain connector, male or female
- ⑧ Sensor connection cable, female
- ⑨ Mounting stud
- ⑩ Anti-rotation stud
- ⑪ Mounting clip

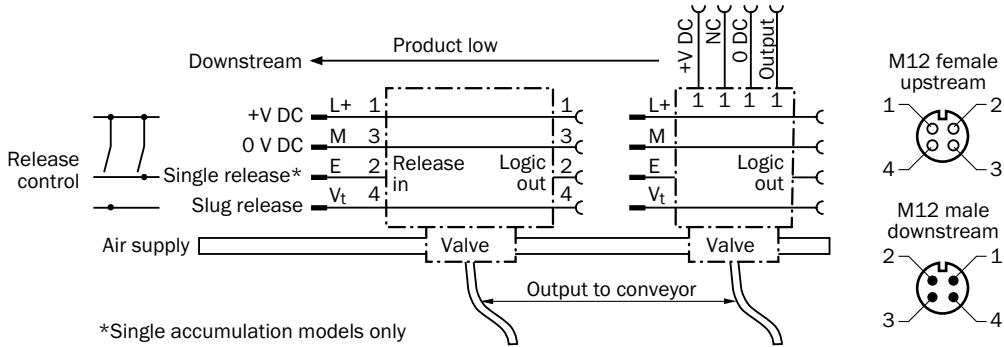
ZLM-C



- ① Daisy chain connector, male
- ② Exhaust
- ③ Output port (x1)
- ④ Media connector (x2)
- ⑤ Manual override switch
- ⑥ Mounting slots (x2)
- ⑦ Daisy chain connector, male or female

Connection diagram

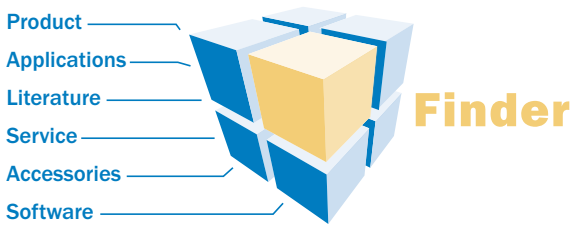
Cd-263



*Single accumulation models only

WWW.MYSICK.COM – SEARCH ONLINE AND ORDER

Search online quickly and safely - with the SICK “Finders”



Product Finder: We can help you to quickly target the product that best matches your application.

Applications Finder: Select the application description on the basis of the challenge posed, industrial sector, or product group.

Literature Finder: Go directly to the operating instructions, technical information, and other literature on all aspects of SICK products.

Efficiency – with the E-Commerce-Tools from SICK



Partner Portal
www.mysick.com

Find out prices and availability

Determine the price and possible delivery date of your desired product simply and quickly at any time.

Request or view a quote

You can have a quote generated online here. Every quote is confirmed to you via e-mail.

Order online

You can go through the ordering process in just a few steps.

FOR SAFETY AND PRODUCTIVITY: SICK LIFETIME SERVICES

SICK LifeTime Services is a comprehensive set of high-quality services provided to support the entire life cycle of products and applications from system design all the way to upgrades. These services increase the safety of people, boost the productivity of machines and serve as the basis for our customers' sustainable business success.



Consulting & Design

Globally available experts for cost-effective solutions



Product & System Support

Fast and reliable, by telephone or on location



Verification & Optimization

Checks and recommendations for increased availability



Upgrade & Retrofits

Uncovers new potential for machines and systems



Training & Education

Employee qualification for increased competitiveness

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for factory, logistics, and process automation. With more than 6,000 employees and over 40 subsidiaries worldwide, we are always close our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

Worldwide presence:

Australia, Belgium/Luxembourg, Brasil, Česká Republika, Canada, China, Danmark, Deutschland, España, France, Great Britain, India, Israel, Italia, Japan, México, Nederland, Norge, Österreich, Polska, România, Russia, Schweiz, Singapore, Slovenija, South Africa, South Korea, Suomi, Sverige, Taiwan, Türkiye, United Arab Emirates, USA.

Please find detailed addresses and additional representatives and agencies in all major industrial nations at: www.sick.com