


# STANDARD M18 PLASTIC

## PHOTOELECTRIC SENSORS

### ADVANTAGES

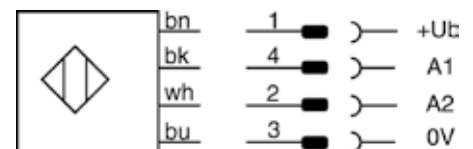
- ✓ First-class sensing ranges
- ✓ Short housing: M18 x 33 mm (cable version), M18 x 37 mm (connector version)
- ✓ Excellent background suppression characteristics with pinpoint LED
- ✓ Mutual interference immunity
- ✓  **IO-Link** on all PNP sensors
- ✓ Easy flush mounting
- ✓ Easy-to-mount special accessories for right-angle emission

### WIRING DIAGRAMS

PNP or NPN, 1 output



PNP or NPN, 2 outputs



OVERVIEW	M18P
Housing material	ABS / PMMA
Degree of protection	IP 67
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +65°C / -13 ... +149°F
Output current	≤ 200 mA
Compatible mounting brackets	See pages 300-301
Accessories	See pages 441-455

# M18P SERIES



M18P

## PHOTOELECTRIC

HOUSING SIZE MM	M18	M18
OPERATING PRINCIPLE	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION
SENSING RANGE MM	250	250

Inductive

Photoelectric

Safety

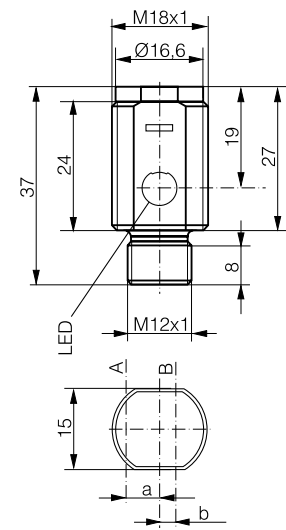
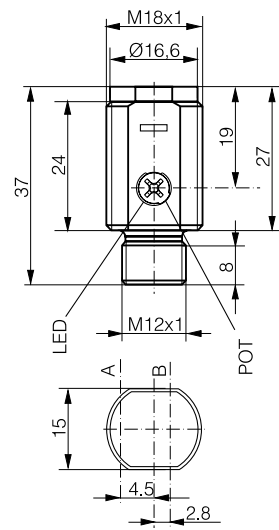
RFID

Connectivity

Accessories

Glossary

Index




DATA	IO-Link	IO-Link
Light source	LED red pinpoint 640 nm	LED red pinpoint 640 nm
Switching frequency (normal mode)	≤ 700 Hz	≤ 700 Hz
Setup	Potentiometer	Teach button or IO-Link
PNP Light-ON	LHR-M18PA-PMS-403	LHR-M18PA-TMS-403
PNP Light-ON + Dark-ON	LHR-M18PA-PMS-603	LHR-M18PA-TMS-603
PNP Light-ON + stability alarm	LHR-M18PA-PMS-60C	LHR-M18PA-TMS-60C
NPN Light-ON	LHR-M18PA-PMS-301	LHR-M18PA-TMS-301
NPN Light-ON + Dark-ON	LHR-M18PA-PMS-101	LHR-M18PA-TMS-101
NPN Light-ON + stability alarm	LHR-M18PA-PMS-10A	LHR-M18PA-TMS-10A
Other types available	Cable version	Cable version

# STANDARD M18

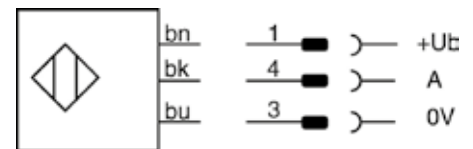
## PHOTOELECTRIC SENSORS

### ADVANTAGES

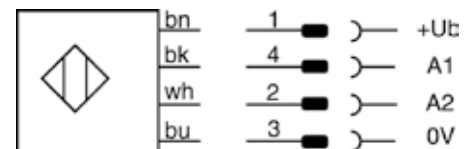
- ✓ M18 sensor series
- ✓ Models for lateral sensing
- ✓ Rugged metal housing
- ✓ Shock & vibration resistant due to fully potted electronics
- ✓ Laser types (protection class 2) for accurate detection of smallest targets
- ✓ Sensing range up to 50 m
- ✓  IO-Link in 2019

### WIRING DIAGRAMS

PNP or NPN, 1 output



PNP or NPN, 2 outputs



OVERVIEW	1180 / 1180W	1180L
Housing material	Chrome-plated brass	Stainless steel V2A
Degree of protection	IP 67	IP 67
Laser protection class	-	2
Supply voltage range	10 ... 36 VDC	10 ... 36 VDC
Ambient temperature range	-25 ... +55°C / -13 ... +131°F	-10 ... +50°C / +14 ... +122°F
Output current	≤ 200 mA	≤ 200 mA
Switching frequency	≤ 1000 Hz	LT: ≤ 1000 Hz/LL: ≤ 5000 Hz

# 1180 SERIES



1180

HOUSING SIZE MM	M18	M18
OPERATING PRINCIPLE	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION
SENSING RANGE MM	120	120

Inductive

Photoelectric

Safety

RFID

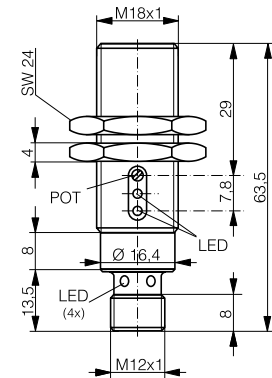
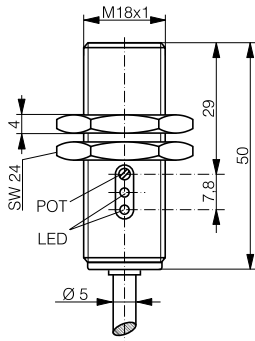
Connectivity

Accessories

Glossary

Index

## PHOTOELECTRIC



DATA	IO-Link 2019	IO-Link 2019
Light source	LED red 680 nm	LED red 680 nm
Setup	Potentiometer	Potentiometer
PNP Light-ON	<b>LHK-1180-303</b>	<b>LHS-1180-303</b>
NPN Light-ON	<b>LHK-1180-301</b>	<b>LHS-1180-301</b>
Other types available		

# STANDARD

HOUSING SIZE

M18

M18

OPERATING PRINCIPLE

DIFFUSE SENSOR WITH  
BACKGROUND SUPPRESSION

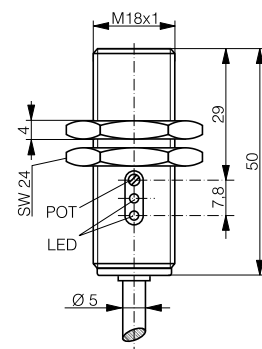
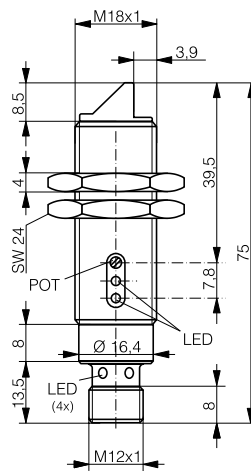
DIFFUSE SENSOR

SENSING RANGE MM

120

600

## PHOTOELECTRIC



DATA

IO-Link 2019

IO-Link 2019

Light source

LED red 680 nm

LED red 630 nm

Setup

Potentiometer

Potentiometer

PNP Light-ON

**LHS-1180W-303**

NPN Light-ON

**LHS-1180W-301**

PNP Light-ON + Dark-ON

**LTK-1180-103**

NPN Light-ON + Dark-ON

**LTK-1180-101**


Other types available

Cable version

# STANDARD C23

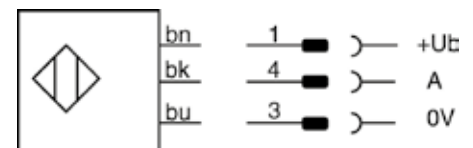
## PHOTOELECTRIC SENSORS

### ADVANTAGES

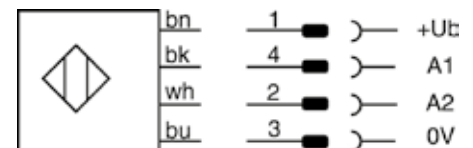
- ✓ First-class sensing ranges
- ✓ Small plastic housing, 20 mm x 30 mm x 10 mm
- ✓ Excellent background suppression characteristics with pinpoint LED
- ✓  **IO-Link** interface available on PNP types
- ✓ Mutual interference immunity
- ✓ Versions available with stability alarm as second output
- ✓ Enclosure rating IP67, Ecolab approved
- ✓ Versatile mounting brackets for ease of installation

### WIRING DIAGRAMS

PNP or NPN, 1 output



PNP or NPN, 2 outputs



OVERVIEW	C23
Housing material	ABS / PMMA
Degree of protection	IP 67
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +65°C / -13 ... +149 °F
Output current	≤ 100 mA
Compatible mounting brackets	See pages 296-298

# C23 SERIES



C23

HOUSING SIZE MM

□ 20 X 30 X 10

□ 20 X 30 X 10

OPERATING PRINCIPLE

DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION

DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION

SENSING RANGE MM

300

300

Inductive

Photoelectric

Safety

RFID

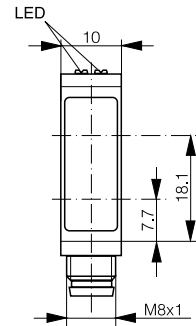
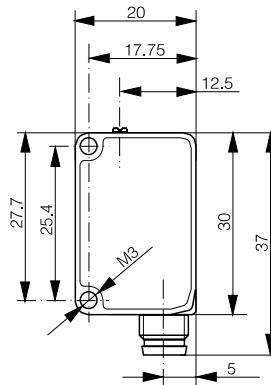
Connectivity

Accessories

Glossary

Index

## PHOTOELECTRIC



### DATA

IO-Link

IO-Link

Light source

Red pinpoint LED 640 nm

Red pinpoint LED 640 nm

Switching frequency (normal mode)

≤ 1000 Hz

≤ 1000 Hz

Setup

Potentiometer

Teach button or IO-Link

PNP Light-ON

LHR-C23PA-PMS-403

LHR-C23PA-TMS-403

PNP Light-ON + Dark-ON

LHR-C23PA-PMS-603

LHR-C23PA-TMS-603

PNP Light-ON + stability alarm

LHR-C23PA-PMS-60C

LHR-C23PA-TMS-60C

NPN Light-ON

LHR-C23PA-PMS-301

LHR-C23PA-TMS-301

NPN Light-ON + Dark-ON

LHR-C23PA-PMS-101

LHR-C23PA-TMS-101

NPN Light-ON + stability alarm

LHR-C23PA-PMS-10A

LHR-C23PA-TMS-10A

Other types available

Cable version

Cable version



# STANDARD 3030

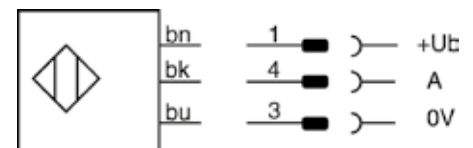
## PHOTOELECTRIC SENSORS

### ADVANTAGES

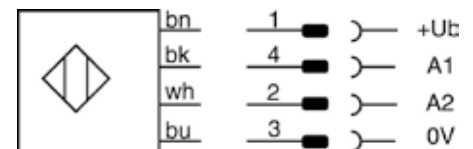
- ✓ Complete miniature sensor series 30 x 30 x 15 mm in rugged Crastin housings
- ✓ Sensing range up to 12,000 mm for through-beam type
- ✓ Shock & vibration resistant due to fully potted electronics
- ✓ Diffuse sensors with precise background suppression
- ✓ Polarizing filter (reflex sensors)
- ✓ High system reserves (excess gain)
- ✓ Pre-failure warning (pollution monitoring)
- ✓ Changeover outputs
- ✓ Analog outputs

### WIRING DIAGRAMS

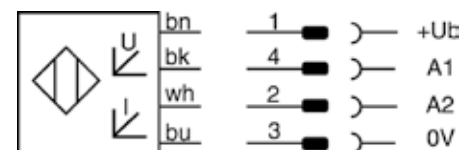
PNP or NPN, 1 output



PNP or NPN, 2 outputs



Analog, 2 outputs



OVERVIEW	3#3#
Housing material	PBTP (Crastin)
Degree of protection	IP 67
Supply voltage range	10 ... 36 VDC / 15 ... 36 VDC (LA#-3130-119)
Ambient temperature range	-25 ... +55°C / -13 ... +131 °F
Output current	≤ 200 mA / -- (LA)
Compatible mounting brackets	See page 301



# 3030 SERIES



3030

HOUSING SIZE MM	□ 30 X 30 X 15	□ 30 X 30 X 15
OPERATING PRINCIPLE	WITH ANALOG OUTPUT	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION
SENSING RANGE MM	100	200

Inductive

Photoelectric

Safety

RFID

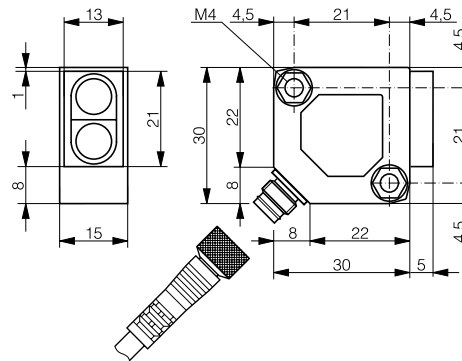
Connectivity

Accessories

Glossary

Index

## PHOTOELECTRIC



DATA		
Light source	LED red 660 nm	LED red 660 nm
Max. switching frequency		500 Hz
Setup	Potentiometer	Potentiometer
Analog output	<b>LAS-3130-119</b>	
PNP Light-ON + Dark-ON		<b>LHS-3130-103</b>
NPN Light-ON + Dark-ON		<b>LHS-3130-101</b>
Other types available	Cable version	

# STANDARD

HOUSING SIZE MM

□ 30 X 30 X 15

□ 30 X 30 X 15

OPERATING PRINCIPLE

DIFFUSE SENSOR WITH  
BACKGROUND SUPPRESSION

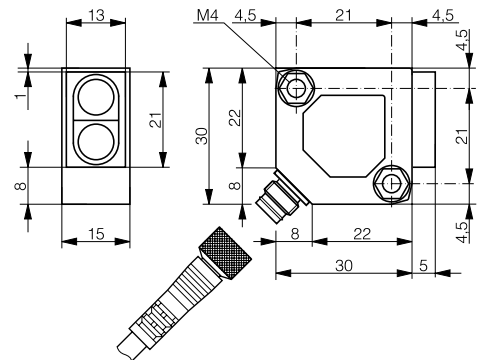
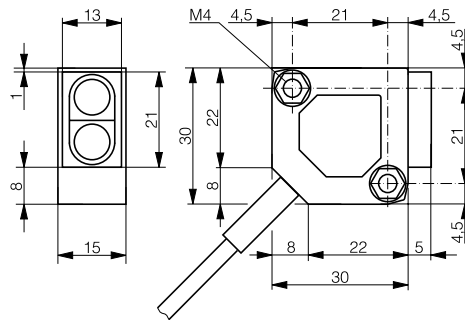
DIFFUSE SENSOR WITH  
BACKGROUND SUPPRESSION

SENSING RANGE MM

200

200

## PHOTOELECTRIC



### DATA

Light source

LED red 660 nm

LED red 660 nm

Max. switching frequency

500 Hz

500 Hz

Setup

Potentiometer

Potentiometer

PNP Light-ON

**LHK-3131-303**

**LHS-3131-303**

NPN Light-ON

**LHK-3131-301**

**LHS-3131-301**

Other types available

# STANDARD 4050

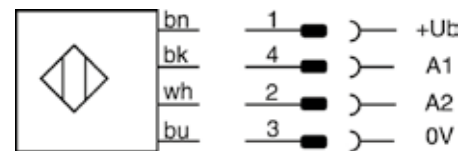
## PHOTOELECTRIC SENSORS

### ADVANTAGES

- ✓ Compact plastic housing, 40 mm x 50 mm x 15 mm
- ✓ Excellent background suppression characteristics
- ✓ Reflex types with special autocollimation optics
- ✓ Adjustable connector
- ✓ Ecolab tested and approved

### WIRING DIAGRAMS

PNP or NPN, 2 outputs



Emitter



OVERVIEW	4050
Housing material	PBTP
Degree of protection	IP 67
Supply voltage range	10 ... 36 VDC
Ambient temperature range	-5 ... +55°C / 23 ... +131°F
Output current	≤ 200 mA
Compatible mounting brackets	See page 302

# 4050 SERIES



4050

HOUSING SIZE MM	□ 40 X 50 X 15	□ 40 X 50 X 15
OPERATING PRINCIPLE	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION	DIFFUSE SENSOR
SENSING RANGE MM	500	1200

Inductive

Photoelectric

Safety

RFID

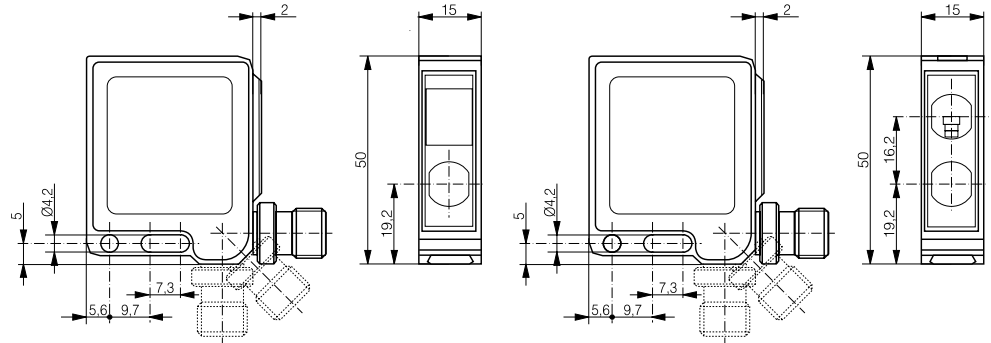
Connectivity

Accessories

Glossary

Index

## PHOTOELECTRIC



DATA		
Light source	LED red 630 nm	LED red 630 nm
Max. switching frequency	500 Hz	1500 Hz
Setup	Potentiometer	Potentiometer
PNP Light-ON + Dark-ON	<b>LHS-4150-103</b>	<b>LTS-4150-103</b>
NPN Light-ON + Dark-ON	<b>LHS-4150-101</b>	<b>LTS-4150-101</b>
Other types available	Cable version	Cable version

# STANDARD C55

## PHOTOELECTRIC SENSORS

### ADVANTAGES

- ✓ Compact plastic housing 50 mm x 50 mm x 23 mm, IP67 & IP69K, Ecolab certified
- ✓ Time-Of-Flight principle for background suppression
- ✓ Laser class 1 emission
- ✓ Range up to 5000 mm
- ✓ Reliable detection of tilted objects

### WIRING DIAGRAM

PNP / NPN auto-detect, 2 outputs + Teach



OVERVIEW	C55 DISTANCE
Housing material	ABS / PMMA
Degree of protection	IP 67 / IP 69K
Supply voltage range	18 ... 30 VDC
Ambient temperature range	-40 ... +60°C / -40 ... +140°F
Output current	≤ 100 mA
Switching frequency	≤ 500 Hz (LHL)
Setup	Teach button
Compatible mounting brackets	See page 299

# C55 SERIES



C55

HOUSING SIZE MM

□ 50 X 50 X 23

OPERATING PRINCIPLE

DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION

SENSING RANGE MM

5000

Inductive

Photoelectric

Safety

RFID

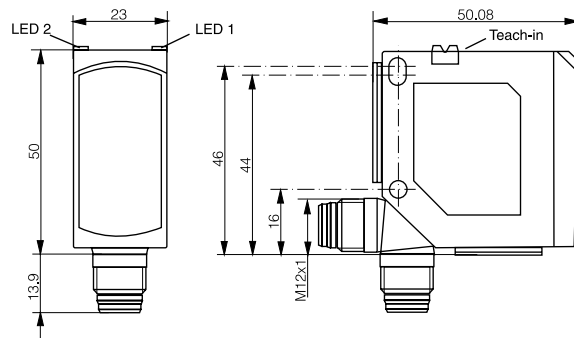
Connectivity

Accessories

Glossary

Index

## PHOTOELECTRIC



### DATA



Light source

Laser class 1 red 650 nm

Light spot size

5 mm x 4 mm at 3000 nm

PNP/NPN auto-detect (x2)

LHL-C55PA-TMS-107-501

Other types available