INDUSTRIES

Food and beverage, packaging, logistics, materials handling, pharmaceutical industry, industrial cleaning systems

Sorting conveyor for egg packaging

Brewery production equipment

Pharmaceutical industry

Automated laundry system

APPLICATION

Washdown inductive sensors monitor position of control valves during dairy-product processing

During manufacture of dairy products, raw milk travels between successive processes through stainless-steel pipework. Rotary-shaft control valves maintain process sequences correctly, ensuring that no cross-contamination occurs during CIP cleaning after each batch is completed. Robust washdown inductive sensors, mounted on existing rotary actuators, monitor control-valve status around the clock, providing real-time positional feedback to a plant-wide control system in a simple, cost-effective manner.

WASHDOWN
INDUCTIVE SENSORS

ECOLAB APPROVED FOR HARSHEST CLEANING PROCESSES

Washdown inductive sensors are certified to operate continuously and reliably in the harsh conditions of the food, beverage and pharmaceutical industries, ensuring uninterrupted production. Rated to **IP68** and **IP69K**, they are pressure resistant up to **80 bar, food safe and corrosion resistant;** additionally Full Inox – Series 700 are **Ecolab** certified.

KEY ADVANTAGES

- ✓ Corrosion resistant
- ✓ Food safe
- ✓ IP68/IP69K protection
- ✓ ◉ **IO**-Link interface
- ✓ Extremely rugged Full Inox types: one-piece stainless-steel housing, factor 1 on steel and aluminum
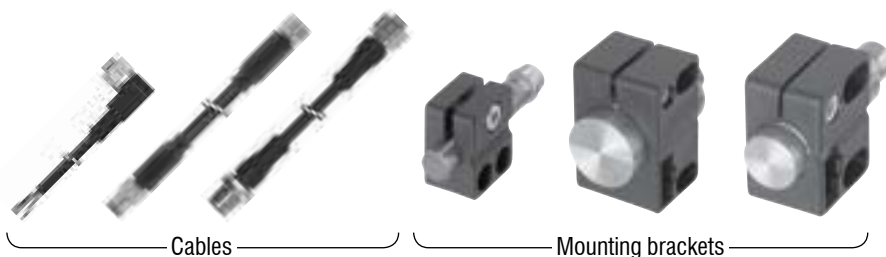- ✓ Ecolab approved

PRODUCT OVERVIEW

◉ **IO**-Link

Housing size mm	M12	M18	M30
Classics	2	–	–
Full Inox	6 … 10	10 … 20	20 … 40

s_n mm

ACCESSORIES

Go to page 298 to see all the accessories

Cables   Mounting brackets

COMMON FEATURES

Supply Voltage range	10 … 30 VDC
Output	PNP NO*

* Other types available: PNP NC, NPN NC

OUTPUT

Technology Family
[6] Classics [7] Full Inox

DW-L[**x**]-[**x**]0[**x**]

Connection
[D] Cable [S] Connector [V] Pigtail

Output
[1] NPN NO [3] PNP NO
[2] NPN NC [4] PNP NC

Reference key on page 116
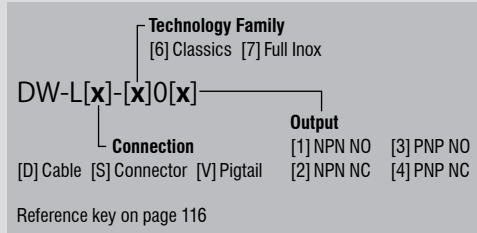
ACCESSORIES

A **Group A: M8 3-pin**
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

B **Group B: M8 4-pin**

C **Group C: M12 4-pin**
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

D **Group D: M12 AC/DC 3-pin**

E **Group E: Universal mounting brackets**
Sub-group: Mechanical stops

F **Group F: Photoelectric mounting brackets**

G **Group G: Photoelectric reflectors**

H **Group H: Sensor tester**

Go to page 298 for details

CABLES
Cable lengths available:
2 m, 5 m, 10 m
other customised lengths possible

FAMILY	OPERATING DISTANCE (mm)	HOUSING SIZE (mm)	HOUSING LENGTH (mm)	HOUSING MATERIAL	
CLASSICS SERIES 600	2	M12	60	Stainless steel V4A	
FULL INOX – SERIES 700	6	M12	60	Stainless steel V4A	
	10	M12	60	Stainless steel V4A	
	6	M12	66.5	Stainless steel V4A	
	10	M12	66.5	Stainless steel V4A	
	10	M18	63.5	Stainless steel V4A	
	20	M18	63.5	Stainless steel V4A	
	10	M18	66.5	Stainless steel V4A	
	20	M18	66.5	Stainless steel V4A	
	20	M30	63.5	Stainless steel V4A	
	40	M30	63.5	Stainless steel V4A	
	20	M30	66.5	Stainless steel V4A	
	40	M30	66.5	Stainless steel V4A	
	20	M30	66.5	Stainless steel V4A	

CABLE	CONNECTOR	IO-Link	SWITCHING FREQUENCY (Hz)	MOUNTING EMB.	MOUNTING NON-EMB.	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE*	ACCESSORIES (SEE PAGE 114)
	M12	IO-Link	1,700	Embed.		−25 … +120°C	IP68 / IP69K	DW-LS-603-M12	C E H
	M12	IO-Link	600	Embed.		−25 … +85°C	IP68 / IP69K	DW-LS-703-M12	C E H
	M12	IO-Link	400		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LS-713-M12	C E H
Teflon		IO-Link	600	Embed.		−25 … +85°C	IP68 / IP69K	DW-LD-703-M12	E H
Teflon		IO-Link	400		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LD-713-M12	E H
	M12	IO-Link	200	Embed.		−25 … +85°C	IP68 / IP69K	DW-LS-703-M18-002	C E H
	M12	IO-Link	200		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LS-713-M18-002	C E H
Teflon		IO-Link	200	Embed.		−25 … +85°C	IP68 / IP69K	DW-LD-703-M18	E H
Teflon		IO-Link	200		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LD-713-M18	E H
	M12	IO-Link	125	Embed.		−25 … +85°C	IP68 / IP69K	DW-LS-703-M30-002	C E H
	M12	IO-Link	90		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LS-713-M30-002	C E H
Teflon		IO-Link	125	Embed.		−25 … +85°C	IP68 / IP69K	DW-LD-703-M30	E H
Teflon		IO-Link	90		Non-embed.	−25 … +85°C	IP68 / IP69K	DW-LD-713-M30	E H
Teflon		IO-Link	100	Embed.		−25 … +85°C	IP68 / IP69K	DW-LD-703-M30-220	E H

DW-AD-503-M8E (-12X/-XXX)

INDUCTIVE SENSOR	DW

SENSOR TYPE	
Conventional	A
2-wire DC (NAMUR excepted)	D
High-temperature	H
Food and sea-water	L
Maritime	M

CONNECTION	
Cable	D
Connector	S
Cable + connector	V

SERIES	
500 / 520 (Extra Distance)	5
600 / 620 (Classics)	6
700 (Full Inox)	7
Embeddable / quasi-embeddable	0
Non-embeddable	1
Increased operating distance, (quasi-)embeddable	2
Increased operating distance, non-embeddable	3

OUTPUT	
NPN NO	1
NPN NC	2
PNP NO	3
PNP NC	4
PNP changeover	A
NPN changeover	B

SHORT / SPECIAL EXECUTIONS	
Series E (impervious)	E
Series 700P (all-metal and high-pressure resistant)	G

HOUSING SIZE	
Threaded	
M4	4
M5	5
M8	8
M12	12
M18	18
M30	30
M50	50
Smooth	
∅3 mm	3
∅4 mm	4
∅6.5 mm	65
∅8 mm	80
5 × 5 mm	5
8 × 8 mm	8
20 × 32 mm	23
40 × 40 mm	44

HOUSING	
Threaded cylindrical housing	M
Rectangular housing	C
Smooth cylindrical housing	0
High-pressure resistant	P

OUTPUT	
2-wire DC	
NO / NAMUR	5
NC	6
2-wire AC/DC	
NO	7
NC	8
Analog	9

INTRODUCTION

TECHNOLOGY

Contrinex inductive devices work according to one of three different technologies. All involve the generation of an alternating magnetic field that emerges at the sensing face. The presence of a conductive, generally metallic, object influences this field in a way that can be detected and evaluated by built-in electronics. All Contrinex ASIC sensors are IO-Link enabled in PNP NO versions.

TECHNOLOGY FAMILIES

CLASSICS FAMILY

Conventional technology, engineered by Contrinex

The **Classics** family uses conventional inductive sensor technology, but with the benefit of a Contrinex ASIC (application specific integrated circuit). ASIC technology ensures reliability, stability and ease of commissioning, due to low variation. Sensors in this family achieve operating distances up to $2\times$ the industry standard. All ASIC sensors in the **Classics** family are IO-Link enabled in PNP NO versions.

Classics sensors have a conventional oscillator and coil generating a high-frequency magnetic field that emerges at the sensing face. Any metallic object found in this field absorbs some of the energy, which is in turn detected and evaluated by built-in electronics (Fig. 1).
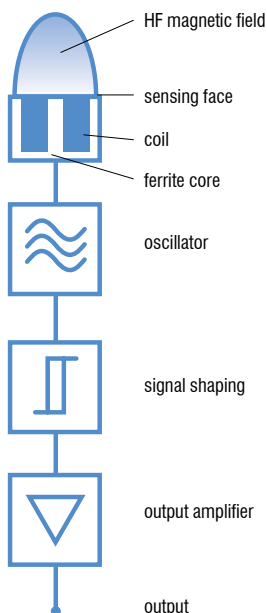
Ferromagnetic metals (steel, nickel, cobalt) absorb the most energy. The achievable operating distances are therefore greatest with these metals. Non-ferromagnetic metals, such as aluminum, absorb less energy. As a result, operating distances are lower (approx. 25 … 45% of those on steel).

The **Classics** technology family (series 600) includes devices from the ranges **Basic, Miniature, Extra Pressure, Extra Temperature, High Temperature, Washdown** and **2-Wire.**

EXTRA DISTANCE FAMILY

Increased stability for exceptionally long operating distance

The **Extra Distance** family is based on the Condist® oscillator developed by Contrinex. Sensors benefit from **up to $4\times$ the standard** operating distance, keeping them out of harm's way in rugged, industrial environments. Sensor lifetime is therefore increased.
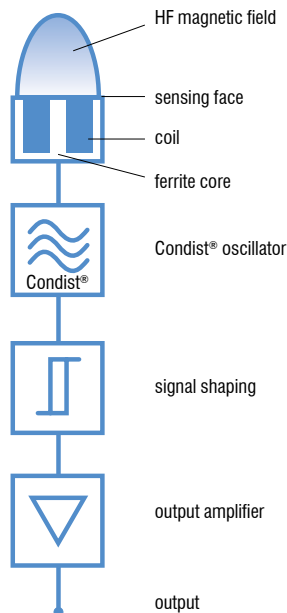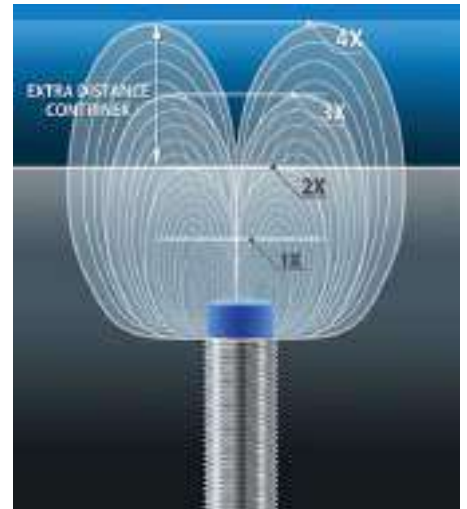
Like **Classics** family sensors, these also generate a high-frequency magnetic field that emerges at the sensing face (Fig. 2). Again, the resulting effect is that any metallic object entering the field absorbs energy from it.

However, the oscillator and the subsequent signal evaluation circuit are completely different, with the objective of achieving a significantly **better stability** with respect to environmental influences, in particular temperature. The most important contribution to this comes from the Contrinex Condist® oscillator.

Improved stability permits the switch point to be further away, leading to **long operating distances** on ferromagnetic metals (Fig. 3). Sensors with this technology also react particularly well to **narrow targets**, e.g. small screws, wires and foils.
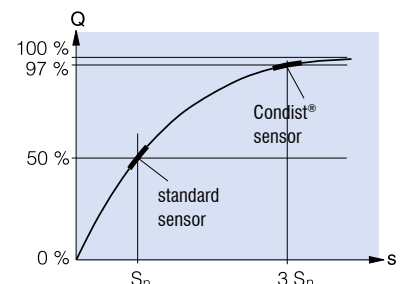
Fig. 3: Extra Distance family sensors have a longer operating distance, due to Condist® oscillator technology

Apart from the Condist® oscillator, all other assemblies are equivalent to the **Classics** family. Material

HF magnetic field
sensing face
coil
ferrite core
oscillator
signal shaping
output amplifier
output

Fig. 1: Conventional inductive sensor technology, as used in the Classics family

HF magnetic field
sensing face
coil
ferrite core
Condist® oscillator
Condist®
signal shaping
output amplifier
output

Fig. 2: Contrinex's Condist® inductive sensor technology, as used in the Extra Distance family

dependencies and other properties are also the same as for **Classics** family sensors.

Special attention has been paid to **meet the relevant standards as much as possible**, so that easy **interchangeability** with conventional devices is guaranteed. Great emphasis has been placed on very good EMC resistance and on perfect sealing against liquid penetration.

The **Extra Distance** technology family includes devices from the **Basic, Miniature, Extra Pressure, High Pressure** and **Analog Output** ranges. This technology is used in series 500 devices.
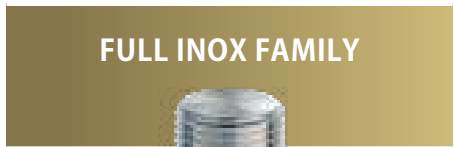
FULL INOX FAMILY

All-round stainless steel protection – practically indestructible

The **Full Inox** family is based on Contrinex's Condet® technology. These one-piece stainless steel sensors are not only the most durable on the market, they also offer long operating distances on any conductive metal.

Full Inox sensors also function according to inductive technology. However, the coil which generates

Fig. 4: Full Inox family sensors use Condet® pulse generator technology instead of an oscillator

Labels in Fig. 4 (top to bottom):
- alternating magnetic field
- sensing face
- coil
- ferrite core
- pulse generator
- switch
- filter
- signal shaping
- output amplifier
- output

the magnetic field is not part of the oscillator (Fig. 4). Instead, the field is generated by periodic, short transmitter current pulses, which flow through the coil (Fig. 5). This field induces a voltage in the target which, in turn, generates a current flow in it. When the **transmitter current pulse** is switched off, the current in the object dies away, causing a **voltage to be induced** in the transmitting coil (Fig. 6).

This voltage generates the signal required, and is in principle **independent of the field's energy loss**. Therein lies the fundamental advantage of this technology, since the field energy losses, which are evaluated in conventional sensors, are subject to a number of undesirable environmental and material influences. Condet® technology allows the sensor, including its face, to be fully encapsulated in a protective, stainless steel housing, with the added security of long operating distances.

The coupling between the target and the coil is rather **like a transformer**, and is hence **temperature independent** and only **slightly influenced**
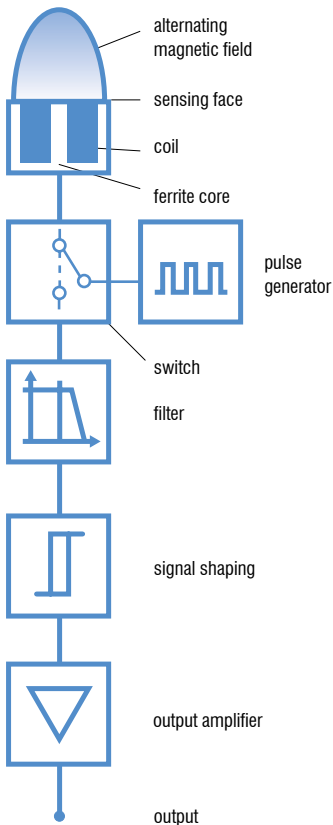
Fig. 5: Evolution of main signals

by the target's material. Operating distances are therefore identical on steel and aluminum. Only metals which are non-ferromagnetic and also have poor electrical conductivity give a reduced usable signal.

The **Full Inox** family includes devices from the **Basic, Miniature, Extreme, High Pressure, Washdown, Weld-Immune, Chip-Immune, Maritime** and **Double-Sheet** ranges.
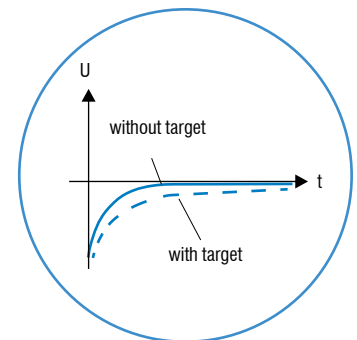
Fig. 6 (detail fig. 5): Effect of a target on the measured signal

IO-Link **FUNCTIONALITY***

<div style="text-align: right">

INDUCTIVE **PHOTOELECTRIC** **RFID** **SMART**

</div>

Data monitoring

Switching state is monitored continuously. This not only monitors the signal itself, but also the state at 80% of the switching distance. One can therefore ensure that the sensor is not working at the limit of its specifications.

✓ ✓ ✓ ✓

Diagnosis

The operating state of the sensor is checked. In case of open circuit, undervoltage, LC oscillator failure or installation of the wrong sensor, information is provided directly through ◎ IO-Link to enable fast repair, maintenance and replacement.

✓ ✓ ✓ ✓

Detection counter

Detection events are counted. By registering the number of detections, it is possible to calculate the speed or number of parts. The counter can be reset by means of a unique ◎ IO-Link message.
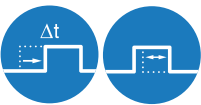
✓ ✓   ✓

Temperature

The internal temperature of the sensor is measured continuously, which provides an indication about the ambient temperature in the application. Moreover, the maximum temperature measured is saved for diagnosis and preventive maintenance purposes.

✓ ✓   ✓

Switching timer

The timing of output switching can be configured. Depending on the needs of an application, output switching can be delayed or the duration stretched through programming.

✓ ✓ ✓ ✓

NO/NC selection

The output switching mode can be selected as NO or NC. A single sensor type is configurable for the various needs of an application. This helps reduce the number of different sensor types required in stock.

✓   ✓ ✓

Sensitivity and teach

The sensitivity of the sensor can be adjusted remotely by changing the threshold. Alternatively, the teach function can be used to adapt the threshold to the application. Calibrated sensing ranges ensure easy sensor replacement by uploading the existing sensitivity to the replacement sensor.

   ✓ ✓ ✓

Light-ON/Dark-ON selection

The output switching mode can be selected as Light-ON or Dark-ON. A single sensor type is configurable for the various needs of an application. This helps reduce the number of different sensor types required in stock.

   ✓

Sensor mode

Three different modes are selectable depending on the application needs: "Normal", "Fast" and "Fine". "Normal" mode is a good balance of speed and precision. In "Fast" mode, speed is higher and in "Fine" mode precision is higher.

   ✓ ✓ ✓

Sequence selection

For cross-talk immunity with through-beam sensors, up to nine different emitting sequences can be selected to pair the emitter with the receiver.

   ✓

*Functionalities may vary depending on series and sensor type

CONTRINEX

Contrinex Headquarters, Switzerland

Contrinex is a leading manufacturer of sensors for factory automation. The Swiss company, headquartered in Corminboeuf near Fribourg (CH), has a unique and innovative range of products whose features far surpass those of standard sensors.

Since its foundation in 1972 by Peter Heimlicher, Dipl Ing ETH, Contrinex has grown from a one-man operation to a multinational group with over 580 employees worldwide. More than 13 subsidiaries cover the core markets in Europe, Asia, North and South America.

AT A GLANCE

- Technology leading manufacturer of inductive and photoelectric sensors as well as safety and RFID systems

- World market leader for miniature sensors, sensors with long operating distances and devices for particularly demanding operating conditions (all-metal, high-pressure and high-temperature resistant sensors)

- Represented in over 60 countries worldwide, headquarters in Switzerland

- 8,000 products

Technology leader for sensor intelligence and industrial RFID

INTELLIGENT SENSORS FOR THE 4TH INDUSTRIAL REVOLUTION: INDUSTRY 4.0

Fit for the future with IO-Link

Intelligent sensors are the fundamental building blocks of modern smart factories. They enable sensor-supported production resources (machines, robots, etc.) to configure, control, manage and optimize themselves. Precise, reliable sensor data is now more essential than ever.
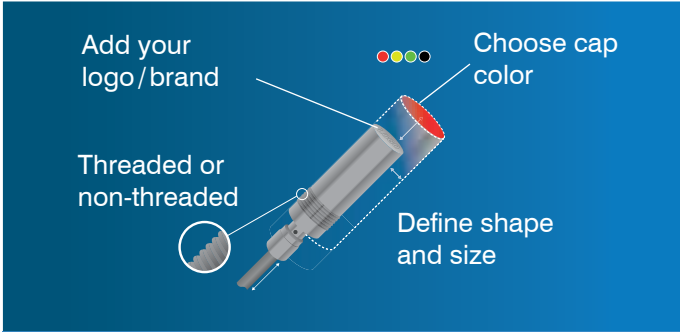
Sensors from Contrinex, the leader in intelligent sensor technology, ensure excellent data quality. To communicate that data, all Contrinex inductive and photoelectric ASIC sensors will be equipped with IO-Link as standard. Customers use either the sensor's binary PNP output or its intelligent IO-Link interface. Both are available in one and the same device.

Another advantage is the fact that, with Contrinex sensors, there is no extra charge for IO-Link. This makes them not only quick and simple to install, but also highly economic.

As the first standardized IO technology worldwide (IEC 61131-9) for communication with sensors and actuators, IO-Link is crucial to the 4th Industrial Revolution. By installing Contrinex ASIC sensors with IO-Link, users can make themselves fit for the future.

CUSTOMIZATION

Contrinex has extensive experience in product customization and brand labelling. Over the years, a team of specialists has worked with clients to design, develop and manufacture numerous unique products that meet individual specifications. Custom solutions can range from a very simple adaptation such as a special connector or cable to a new design with special signals, technical characteristics or a customized housing. The company is also equipped to meet branding requirements for product color, packaging, labelling and logos.

Production sites are available worldwide, so products can be manufactured for best availability and in quantities that suit the client's requirements. Quality is assured by vigorous lab testing, pre-shipment inspections and compliance with market standards. All production sites are open to quality audits by clients.

Add your logo / brand
Choose cap color
Threaded or non-threaded
Define shape and size

✓ Housing shape and size
✓ Cable length
✓ Embeddable / non-embeddable
✓ Threaded / non-threaded
✓ Selected technical characteristics

LIVE SENSOR DATA FOR IoT

CLOUD ANALYTICS

IO-Link SENSORS

INDUCTIVE SENSORS

PHOTOELECTRIC SENSORS

RFID

SMART COMMUNICATION WITH CONTRINEX SENSORS

❋ Continuous monitoring of process data
❋ Continuous diagnosis of sensor status
❋ Comprehensive dashboard for overview and predictive maintenance
❋ Plug & play solutions compatible with greenfield and brownfield applications
❋ Data sent to the cloud with wireless signal (no need for PLC)

ACCESSORIES

HIGHLIGHTS

- ✓ Comprehensive cable and connector program
- ✓ IP69K and Ecolab-certified cables for the food and beverage industry (on demand)
- ✓ UL-approved cables and connectors
- ✓ Cables with straight or right-angle sockets
- ✓ Distribution boxes
- ✓ Field-attachable connectors
- ✓ T-connectors (on demand)
- ✓ User-friendly standard portfolio
- ✓ Sensor testers for fast field checks
- ✓ Sensor mounting clamps
- ✓ Bases for mounting clamps
- ✓ Mechanical stops
- ✓ Amplifiers for 3-wire and NAMUR sensors (on demand)

INDUCTIVE & PHOTOELECTRIC CABLES
Group Ⓐ

M8 3-PIN

open ended wire

connecting cables

CONNECTOR	PINS	CONFIG.	CABLE MATERIAL	CABLE LENGTH	WIRE	CABLE CONNECTION END	PINS	PART REFERENCE
M8	3-pole	straight	PUR	2 m	3	OPEN CABLE	–	S08-3FUG-020
M8	3-pole	straight	PUR	5 m	3	OPEN CABLE	–	S08-3FUG-050
M8	3-pole	straight	PUR	10 m	3	OPEN CABLE	–	S08-3FUG-100
M8	3-pole	right angle	PUR	2 m	3	OPEN CABLE	–	S08-3FUW-020
M8	3-pole	right angle	PUR	5 m	3	OPEN CABLE	–	S08-3FUW-050
M8	3-pole	right angle	PUR	10 m	3	OPEN CABLE	–	S08-3FUW-100
M8	3-pole	straight	PVC	2 m	3	OPEN CABLE	–	S08-3FVG-020
M8	3-pole	straight	PVC	5 m	3	OPEN CABLE	–	S08-3FVG-050
M8	3-pole	straight	PVC	10 m	3	OPEN CABLE	–	S08-3FVG-100
M8	3-pole	right angle	PVC	2 m	3	OPEN CABLE	–	S08-3FVW-020
M8	3-pole	right angle	PVC	5 m	3	OPEN CABLE	–	S08-3FVW-050
M8	3-pole	right angle	PVC	10 m	3	OPEN CABLE	–	S08-3FVW-100
M8	3-pole	straight	PUR	0.6 m	–	M8	3	S08-3FUG-006-08MG
M8	3-pole	straight	PUR	2 m	–	M8	3	S08-3FUG-020-08MG
M8	3-pole	straight	PUR	5 m	–	M8	3	S08-3FUG-050-08MG
M8	3-pole	straight	PVC	0.6 m	–	M8	3	S08-3FVG-006-08MG
M8	3-pole	straight	PVC	2 m	–	M8	3	S08-3FVG-020-08MG
M8	3-pole	straight	PVC	5 m	–	M8	3	S08-3FVG-050-08MG

FIELD ATTACHABLE CONNECTORS

CONNECTOR	PINS	CONFIG.	OUTER ⌀	WIRE ⌀	PART REFERENCE
M8	3-pole	straight	3.0–5.0	0.08–0.38	S08-3FNG-000-NNT1
M8	3-pole	straight	4.0–8.0	0.14–0.50	S08-3FNG-000-NNT2
M8	3-pole	straight	3.0–5.0	0.08–0.38	S08-3MNG-000-NNT1
M8	3-pole	straight	4.0–8.0	0.14–0.50	S08-3MNG-000-NNT2

DISTRIBUTION BOXES

CONNECTOR	PINS	NUMBER OF CONNECTIONS	CONNECTION TYPE	PART REFERENCE
M8	3-pole	Universal – Hood	No cable	V08-30PE-000-NNN
M8	3-pole	10 Plug Distribution box	PUR cable 5 m	V08-31PD-050-UYN
M8	3-pole	10 Outputs – Hood	PUR cable 5 m	V08-31PH-050-UNN
M8	3-pole	4 Plug Distribution box	No cable (hood needed)	V08-34PB-000-NYN
M8	3-pole	4 Plug Distribution box	PUR cable 5 m	V08-34PD-050-UYN
M8	3-pole	8 Plug Distribution box	No cable (hood needed)	V08-38PB-000-NYN
M8	3-pole	8 Plug Distribution box	PUR cable 5 m	V08-38PD-050-UYN
M8	3-pole	8 Outputs – Hood	PUR cable 5 m	V08-38PH-050-UNN

INDUCTIVE & PHOTOELECTRIC CABLES
Group B

M8 4-PIN

open ended wire

connecting cables

CONNECTOR	PINS	CONFIG.	CABLE MATERIAL	CABLE LENGTH	WIRE	CABLE CONNECTION END	PINS	PART REFERENCE
M8	4-pole	straight	PUR	2 m	4	OPEN CABLE	–	S08-4FUG-020
M8	4-pole	straight	PUR	5 m	4	OPEN CABLE	–	S08-4FUG-050
M8	4-pole	straight	PUR	10 m	4	OPEN CABLE	–	S08-4FUG-100
M8	4-pole	right angle	PUR	2 m	4	OPEN CABLE	–	S08-4FUW-020
M8	4-pole	right angle	PUR	5 m	4	OPEN CABLE	–	S08-4FUW-050
M8	4-pole	right angle	PUR	10 m	4	OPEN CABLE	–	S08-4FUW-100
M8	4-pole	straight	PVC	2 m	4	OPEN CABLE	–	S08-4FVG-020
M8	4-pole	straight	PVC	5 m	4	OPEN CABLE	–	S08-4FVG-050
M8	4-pole	straight	PVC	10 m	4	OPEN CABLE	–	S08-4FVG-100
M8	4-pole	right angle	PVC	2 m	4	OPEN CABLE	–	S08-4FVW-020
M8	4-pole	right angle	PVC	5 m	4	OPEN CABLE	–	S08-4FVW-050
M8	4-pole	right angle	PVC	10 m	4	OPEN CABLE	–	S08-4FVW-100
M8	4-pole	straight	PUR	2 m	–	M12	4	S08-4FUG-020-12MG
M8	4-pole	right angle	PUR	2 m	–	M8	4	S08-4FUW-020-08MG
M8	4-pole	straight	PVC	2 m	–	M12	4	S08-4FVG-020-12MG
M8	4-pole	right angle	PVC	2 m	–	M8	4	S08-4FVW-020-08MG

INDUCTIVE & PHOTOELECTRIC CABLES
Group ⓒ

M12 4-PIN

open ended wire

connecting cables

CONNECTOR	PINS	CONFIG.	CABLE MATERIAL	CABLE LENGTH	WIRE	CABLE CONNECTION END	PINS	PART REFERENCE
M12	4-pole	straight	PUR	2 m	4	OPEN CABLE	–	S12-4FUG-020
M12	4-pole	straight	PUR	5 m	4	OPEN CABLE	–	S12-4FUG-050
M12	4-pole	straight	PUR	10 m	4	OPEN CABLE	–	S12-4FUG-100
M12	4-pole	straight	PUR	15 m	4	OPEN CABLE	–	S12-4FUG-150
M12	4-pole	straight	PUR	20 m	4	OPEN CABLE	–	S12-4FUG-200
M12	4-pole	straight	PUR	25 m	4	OPEN CABLE	–	S12-4FUG-250
M12	4-pole	right angle	PUR	2 m	4	OPEN CABLE	–	S12-4FUW-020
M12	4-pole	right angle	PUR	5 m	4	OPEN CABLE	–	S12-4FUW-050
M12	4-pole	right angle	PUR	10 m	4	OPEN CABLE	–	S12-4FUW-100
M12	4-pole	right angle	PUR	15 m	4	OPEN CABLE	–	S12-4FUW-150
M12	4-pole	right angle	PUR	20 m	4	OPEN CABLE	–	S12-4FUW-200
M12	4-pole	right angle	PUR	25 m	4	OPEN CABLE	–	S12-4FUW-250
M12	4-pole	straight	PVC	2 m	4	OPEN CABLE	–	S12-4FVG-020
M12	4-pole	straight	PVC	5 m	4	OPEN CABLE	–	S12-4FVG-050
M12	4-pole	straight	PVC	10 m	4	OPEN CABLE	–	S12-4FVG-100
M12	4-pole	right angle	PVC	2 m	4	OPEN CABLE	–	S12-4FVW-020
M12	4-pole	right angle	PVC	5 m	4	OPEN CABLE	–	S12-4FVW-050
M12	4-pole	right angle	PVC	10 m	4	OPEN CABLE	–	S12-4FVW-100
M12	4-pole	straight	PUR	0.6 m	–	M12	4	S12-4FUG-006-12MG
M12	4-pole	straight	PUR	2 m	–	M12	4	S12-4FUG-020-12MG
M12	4-pole	straight	PUR	5 m	–	M12	4	S12-4FUG-050-12MG
M12	4-pole	straight	PVC	0.6 m	–	M12	4	S12-4FVG-006-12MG
M12	4-pole	straight	PVC	2 m	–	M12	4	S12-4FVG-020-12MG
M12	4-pole	straight	PVC	5 m	–	M12	4	S12-4FVG-050-12MG

INDUCTIVE & PHOTOELECTRIC CABLES
Group C

FIELD ATTACHABLE CONNECTORS

CONNECTOR	PINS	CONFIG.	OUTER ⌀	WIRE ⌀	PART REFERENCE
M12	3-pole	straight	3.0–5.0	0.08–0.38	S12-3FNG-000-NNT1
M12	3-pole	straight	3.0–5.0	0.08–0.38	S12-3MNG-000-NNT1
M12	4-pole	straight	3.0–5.0	0.08–0.38	S12-4FNG-000-NNT1
M12	4-pole	straight	4.0–8.0	0.14–0.50	S12-4FNG-000-NNT2
M12	4-pole	straight	5.5–8.0	0.50–1.00	S12-4FNG-000-NNT3
M12	4-pole	right angle	3.0–5.0	0.08–0.38	S12-4FNW-000-NNT1
M12	4-pole	straight	3.0–5.0	0.08–0.38	S12-4MNG-000-NNT1
M12	4-pole	straight	4.0–8.0	0.14–0.50	S12-4MNG-000-NNT2
M12	4-pole	straight	5.5–8.0	0.50–1.00	S12-4MNG-000-NNT3
M12	4-pole	right angle	3.0–5.0	0.08–0.38	S12-4MNW-000-NNT1

DISTRIBUTION BOXES

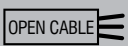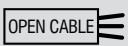| CONNECTOR	PINS	NUMBER OF CONNECTIONS	CONNECTION TYPE	PART REFERENCE
M12	5-pole	Universal – Hood	No cable	V12-50PE-000-NNN
M12	5-pole	4 Plug Distribution box	Connector M23	V12-54MG-023-NYN
M12	5-pole	4 Plug Distribution box	No cable (hood needed)	V12-54PB-000-NYN
M12	5-pole	4 Plug Distribution box	PUR cable 2 m	V12-54PD-020-UYN
M12	5-pole	4 Plug Distribution box	PUR cable 5 m	V12-54PD-050-UYN
M12	5-pole	4 Plug Distribution box	PUR cable 10 m	V12-54PD-100-UYN
M12	5-pole	4 Plug Distribution box + Hood	PUR cable 5 m	V12-54PY-050-UYN
M12	5-pole	8 Plug Metal Distribution box	PUR cable 5 m	V12-58MD-050-UYN
M12	5-pole	8 Plug Metal Distribution box	PUR cable 10 m	V12-58MD-100-UYN
M12	5-pole	8 Plug Metal Distribution box	Connector M23	V12-58MG-023-NYN
M12	5-pole	8 Plug Distribution box	No cable (hood needed)	V12-58PB-000-NYN
M12	5-pole	8 Plug Distribution box	PUR cable 2 m	V12-58PD-020-UYN
M12	5-pole	8 Plug Distribution box	PUR cable 5 m	V12-58PD-050-UYN
M12	5-pole	8 Plug Distribution box	PUR cable 10 m	V12-58PD-100-UYN
M12	5-pole	8 Plug Distribution box + Hood	PUR cable 2 m	V12-58PY-020-UYN
M12	5-pole	8 Plug Distribution box + Hood	PUR cable 5 m	V12-58PY-050-UYN
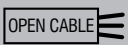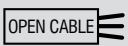
INDUCTIVE & PHOTOELECTRIC CABLES
Group D

M12 AC/DC 3-PIN

CONNECTOR	PINS	CONFIG.	CABLE MATERIAL	CABLE LENGTH	WIRE	CABLE CONNECTION END	PINS	PART REFERENCE
UNF 1/2"	3	straight	PUR	2 m	3	OPEN CABLE	–	S13-3FUG-020
UNF 1/2"	3	straight	PUR	5 m	3	OPEN CABLE	–	S13-3FUG-050
UNF 1/2"	3	right angle	PUR	2 m	3	OPEN CABLE	–	S13-3FUW-020
UNF 1/2"	3	right angle	PUR	5 m	3	OPEN CABLE	–	S13-3FUW-050

UNIVERSAL MOUNTING BRACKETS
Group **E**

UNIVERSAL MOUNTING BRACKETS

	HOUSING SIZE COMPATIBILITY	TYPE	PART REFERENCE
	Ø 3	without limit stop	ASU-0001-030
	Ø 4	without limit stop	ASU-0001-040
	Ø 5	without limit stop	ASU-0001-050
	Ø 6.5	without limit stop	ASU-0001-065
	Ø 8	without limit stop	ASU-0001-080
	Ø 8	with limit stop	ASU-0002-080
	Ø 12 mm	without limit stop	ASU-0001-120
	Ø 12 mm	with limit stop	ASU-0002-120
	Ø 18 mm	without limit stop	ASU-0001-180
	Ø 18 mm	with limit stop	ASU-0002-180

MECHANICAL STOPS

	INNER Ø	OUTER Ø	PLUNGER TYPE	MAX. FORCE ON HOUSING	MAX. FORCE ON PLUNGER	PART REFERENCE
	M5 × 0.5	M8 × 1	Flat[1]	8,000 N	2,000 N	AMS-0001-M08
	M5 × 0.5	M8 × 1	Spherical[2]	8,000 N	2,000 N	AMS-0002-M08
	M8 × 1	M12 × 1	Flat[1]	15,000 N	2,000 N	AMS-0001-M12
	M8 × 1	M12 × 1	Spherical[2]	15,000 N	2,000 N	AMS-0002-M12

Material: Steel XC 48, black
Max. tightening torque: 30 Nm (M8), 50 Nm (M12)
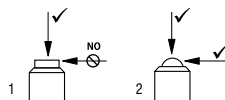
PHOTOELECTRIC MOUNTING BRACKETS
Group F

	HOUSING SIZE COMPATIBILITY	BRACKET MATERIAL	PART REFERENCE
	C23PA series	Stainless steel V2A	LXW-C23PA-000
	C23PA series	Stainless steel V2A	LXW-C23PA-001
	C23PA series	Stainless steel V2A	LXW-C23PA-002
	C23PA series	Stainless steel V2A	LXW-C23PA-003
	DGI series MGI series	Stainless steel V2A	LXW-DGMGA-000

	HOUSING SIZE COMPATIBILITY	BRACKET MATERIAL	PART REFERENCE
	M18PA series	ABS/PMMA	LHW-M18PA-000
	M18PA series	ABS/PMMA	LLW-M18PA-000
	M18PA series	ABS/PMMA	LTW-M18PA-000
	M18PA series	ABS	LXW-M18PA-000
	M18PA series	Polyamide	LXW-M18PA-001

PHOTOELECTRIC REFLECTORS
Group G

REFLECTORS

	DIMENSIONS	PART REFERENCE
	∅ 26 mm	LXR-0000-025
	∅ 46 mm	LXR-0000-046
	∅ 82 mm	LXR-0000-084
	32 × 20 mm	LXR-0001-032
	60 × 20 mm	LXR-0001-062
	∅ 26 mm	LXU-0000-025
	∅ 82 mm	LXU-0000-084
	32 × 20 mm	LXU-0001-032
	60 × 41 mm	LXU-0001-064

SENSOR TESTER
Group Ⓗ

	PART REFERENCE
	ATE-0000-010

CABLES / CONNECTORS

S12-4FAG-020[-NNLN-12MG]

CONNECTION CABLE	S

CONNECTOR SIZE FEMALE	
M8	08
M12	12
M12 AC/DC	13
M23	23

NUMBER OF POLES	
3-pole	3
4-pole	4
5-pole	5
8-pole	8
11-pole	B
19-pole	J

CONNECTOR TYPE	
Female (socket)	F
Male (plug)	M

CABLE MATERIAL	
No cable	N
PVC	V
PUR	U
TPE-S	A

CABLE EXIT (FEMALE)	
Straight	G
Right-angle	W

CABLE LENGTH	
No cable	000
0.3 m	003
0.6 m	006
1 m	010
1.5 m	015
2 m (standard)	020
5 m	050
10 m	100
15 m	150
20 m	200
25 m	250

CABLE EXIT (MALE)	
Straight	G
Right-angle	W

CONNECTOR TYPE	
Male (plug)	M
Female (socket)	F

CONNECTOR SIZE MALE	
M8	08
M12	12
M23	23

CONNECTION TYPE	
Standard	N
Quick-lock	Q
Cable $\varnothing$ 3.0–5.0 mm / wire 0.08–0.38 mm^2	1
Cable $\varnothing$ 4.0–8.0 mm / wire 0.14–0.50 mm^2	2
Cable $\varnothing$ 5.5–8.0 mm / wire 0.5–1.0 mm^2	3

APPLICATION	
Standard	N
Food	L
RFID	R
Field attachable	T
Safety	S

EXECUTION	
Standard or no cable	N
Shielded	W

LED	
Yes, PNP	Y
Yes, NPN	Z
No	N

DISTRIBUTION BOXES AND T-CONNECTORS

V12-58PD-050-UYN (-###)

DISTRIBUTION BOX OR T-CONNECTOR	V

CONNECTIONS

Accessory	00
M8	08
M12	12

POLE NUMBER OF CONNECTIONS

3-pole	3
4-pole	4
5-pole	5
8-pole	8

NUMBER OF CONNECTIONS

Hood for all types	0
2 connections	T
4 connections	4
6 connections	6
8 connections	8
10 connections	1

MATERIAL

Plastic	P
Metal	M

TYPE

Distribution box with cable / T-connector	D
Distribution box for straight connection	G
Distribution box for right-angle connection	W
Base element without hood	B
Hood with cable	H
Hood without cable	E
Base element + hood with cable	Y

SPECIAL EXECUTIONS

TECHNOLOGY

Standard (passive distribution box)	N
Wiring according diagram no.	#

LED

Yes	Y
No	N

CABLE MATERIAL

No cable	N
PVC	V
PUR	U

CONNECTION

No cable	000
Cable 0.3 m	003
Cable 2 m	020
Cable 5 m	050
Cable 10 m	100
Connector M12	012
Connector M23	023

MISCELLANEOUS

APT-0001-010

ACCESSORY		A

ACCESSORY TYPE	
Mechanical stop	MS
Protective tube	PT
Tester	TE

MATERIAL	
Protective tubes, Tester	
Material PTFE, spiral, split	**000**

DIMENSIONS	
Mechanical stops	
Outer diameter M08＝M8 × 1 thread	**M08**
Outer diameter M12＝M12 × 1 thread	**M12**
Protective tubes	
Length in dm (1 m)	**010**
Length in dm (10 m)	**100**

SERIES	
Mechanical stops	
Flat plunger	1
Spheric plunger	2
Protective tubes	
Inner ⌀ 3.5 mm / Outer ⌀ 6.0 mm	0
Inner ⌀ 6.5 mm / Outer ⌀ 10.0 mm	1
Inner ⌀ 13.0 mm / Outer ⌀ 17.5 mm	2
Inner ⌀ 19.0 mm / Outer ⌀ 23.5 mm	3
Tester	
Base	0

PHOTOELECTRIC MOUNTING BRACKETS AND SPECIAL MOUNTINGS

LXW-C23PA-000

PHOTOELECTRIC SENSOR		L

SENSOR TYPE	
With background suppression	H
Through-beam sensor	L
Diffuse sensor	T
Accessories	X

DEVICE TYPE	
Mounting bracket	W

HOUSING SIZE COMPATIBILITY	
C23PA series	C23PA
DGI, MGI series	DGM
M18PA series	M18PA

INCREMENTAL NUMBER	
Incremental number	**000**
Incremental number	**001**
Incremental number	**002**
Incremental number	**003**

PERFORMANCE	
Standard	A, B

HOUSING MATERIAL	
Stainless steel V4A	G
Plastic	P

MOUNTING BRACKETS

ASU-0001-030

ACCESSORY	A

ACCESSORY TYPE	
Mounting brackets	SU

FIXTURE	
Standard Basic fixture	00
Standard Cylindrical fixture	30

MATERIAL	
Plastic	0
Stainless steel V2A	1
Coated steel	4

DIMENSIONS	
⌀3 mm	030
⌀4 mm	040
⌀5 mm	050
⌀6.5 mm	065
⌀8 mm	080
⌀12 mm	120
⌀18 mm	180
⌀30 mm	300

TYPE	
Without limit stop	1
With limit stop	2
For C44	3
For 4#5#	4
For C1717	5

PHOTOELECTRIC REFLECTORS

LXR-0000-025

PHOTOELECTRIC SENSOR	L

SENSOR TYPE	
Accessories	X

DEVICE TYPE	
Reflector	R
Reflector for UV	U

SHAPE	
Cylindrical reflector	0000
Rectangular reflector	0001

DIMENSIONS	
Cylindrical reflectors	
⌀26 mm	025
⌀46 mm	046
⌀82 mm	084
Rectangular reflectors	
32 × 20 mm	032
60 × 20 mm	062
60 × 41 mm	064

CONTRINEX

ALL OVER THE WORLD

EUROPE
Austria
Belgium
Croatia
Czech Republic
Denmark
Estonia
Finland
France*
Germany*
Great Britain
Greece
Hungary
Ireland
Italy*
Luxembourg
Netherlands
Norway
Poland
Portugal*
Romania
Russian Federation

Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland*
Turkey
Ukraine

AFRICA
Morocco
South Africa

THE AMERICAS
Argentina
Brazil*
Canada
Chile
Mexico*
Peru
United States*

ASIA
China*
India*
Indonesia
Japan*
Korea
Malaysia
Pakistan
Philippines
Singapore
Taiwan
Thailand

AUSTRALASIA
Australia
New Zealand

MIDDLE EAST
Israel
United Arab Emirates

Terms of delivery and right to change design reserved.

*Contrinex subsidiary

HEADQUARTERS
CONTRINEX AG Industrial Electronics
Route du Pâqui 3 – PO Box – CH-1720 Corminboeuf – Switzerland
Tel: +41 26 460 46 46 – **Fax:** +41 26 460 46 40
Internet: www.contrinex.com – **E-mail:** info@contrinex.com

www.contrinex.com

PLUS+Automation
HELPING YOU #MakeSenseofSensors

0121 58 222 58
Sales@PLUSAutomation.co.uk
www.PLUSAutomation.co.uk