

# CONTRINEX

SENSORS SAFETY RFID

## HIGHLIGHTS

### SMART SENSORS

- Measure | Monitor | Configure | Predict

### INDUCTIVE WELD-IMMUNE & SPATTER-RESISTANT ACCESSORIES

- Revolutionary protection for long life

### PHOTOELECTRIC FULL-METAL M12 AND M18 SERIES

- Robust with excellent background suppression

### SAFETY LIGHT CURTAINS EXTENDED SLIM

- Wireless configuration via Bluetooth®

### RFID WITH IO-LINK

- Tough, fast, cost-effective and easily integrated

## PROGRAM OVERVIEW 2021

LIVE SENSOR DATA FOR IoT  IO-Link



ContriApp



SMART SENSOR



WELD-IMMUNE

A  
Swiss  
Company



# CONTRINEX – A WORLD OF SENSORS

## 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



*Contrinex Headquarters, Switzerland*

## GLOBAL PRESENCE



# CONTRINEX PRODUCT RANGES

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## ACCESSORIES

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For special products see Contrinex catalog,  
downloadable from our website: [www.contrinex.com](http://www.contrinex.com)




## 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, under-voltage, LC oscillator failure or installation of the wrong sensor, information is provided directly through  IO-Link to enable fast repair, maintenance and replacement.



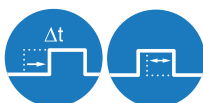
## Detection counter

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 9 different emitting sequences can be selected to pair the emitter with the receiver.



\*Functionalities may vary depending on series and sensor type

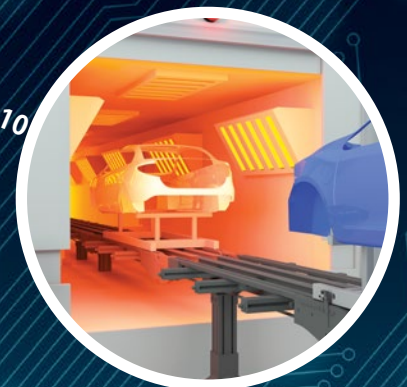
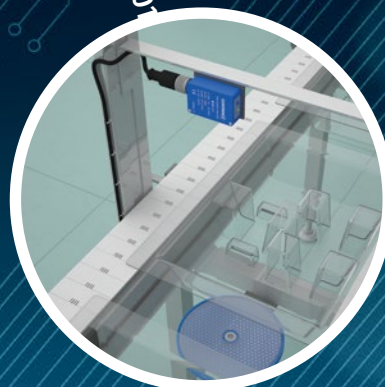


# LIVE SENSOR DATA FOR IoT

## CLOUD ANALYTICS



## IO-Link SENSORS



RFID

## PHOTOELECTRIC SENSORS



## INDUCTIVE SENSORS



## SMART COMMUNICATION WITH CONTRINEX SENSORS

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



# SMART SENSORS



## SMART SENSORS

MEASURE MONITOR CONFIGURE PREDICT

### KEY ADVANTAGES



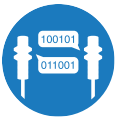
High-Resolution  
Measurement



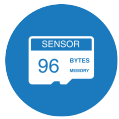
User-Configurable  
Outputs



Embedded Predictive-  
Maintenance Features



Direct Device-to-  
Device  
Communication



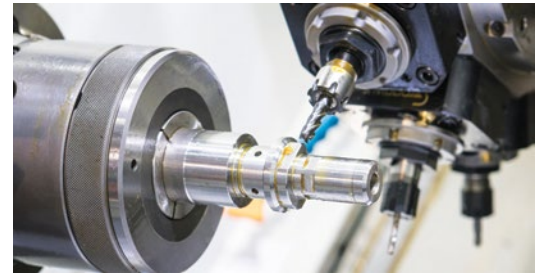
User-Defined  
Memory



Dual Channel



Spindle-cutting machine tool



Metal recycling equipment



Conveyor systems



Robotics for pick-and-place



### INDUSTRIES

Automation, packaging, robotics, automotive, green energy, environment, logistics, machine tools, electronic assembly, food and beverage, textiles, materials handling

### HIGHLIGHTS

- ✓ Multiple sensing modes in a single sensor:
  - ✓ Direct measurement: Distance measurement, lateral position measurement (constant distance), feature detection
  - ✓ Indirect measurement: Angular measurement, lateral position measurement (inclined plane), force measurement, vibration measurement, step counting
- ✓ Exceptional versatility optimizes spares inventory
- ✓ Condition-based self-monitoring minimizes maintenance costs
- ✓ Localized D2D process logic enables sensor-based decision-making
- ✓ Unique embedded sensor ID eliminates installation errors

 IO-Link

Housing size mm	M8*	M12*	M18*	
Smart Sensors (s <sub>n</sub> mm)	0 ... 6	0 ... 10	0 ... 20	

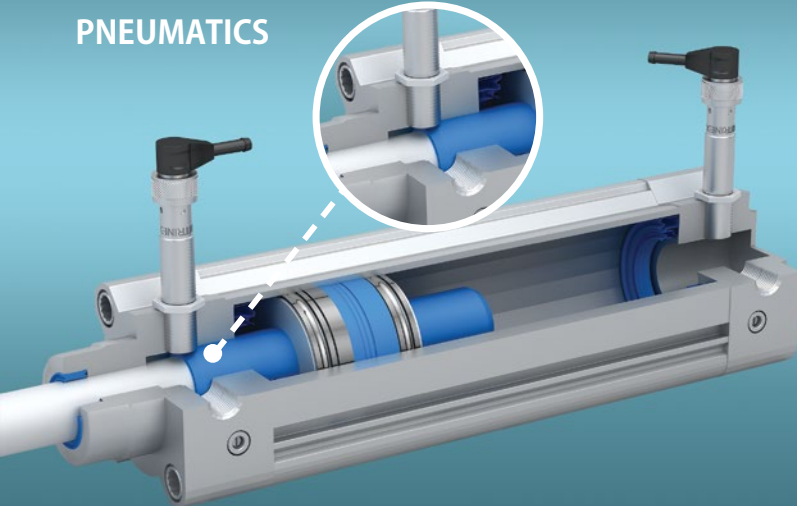


# SMART SENSORS

HIGH-POWERED  
CONNECTED  
INTELLIGENCE

LIVE SENSOR  
DATA FOR IOT

## PNEUMATICS



### SMART TASKS



- High-resolution measurement of lateral piston displacement
- Repeated high-speed displacement measurement at timed intervals



- Monitor temperature, vibration and process cycle count for maintenance purposes
- Local storage of sensor configurations, allowing plug-and-play replacement when needed

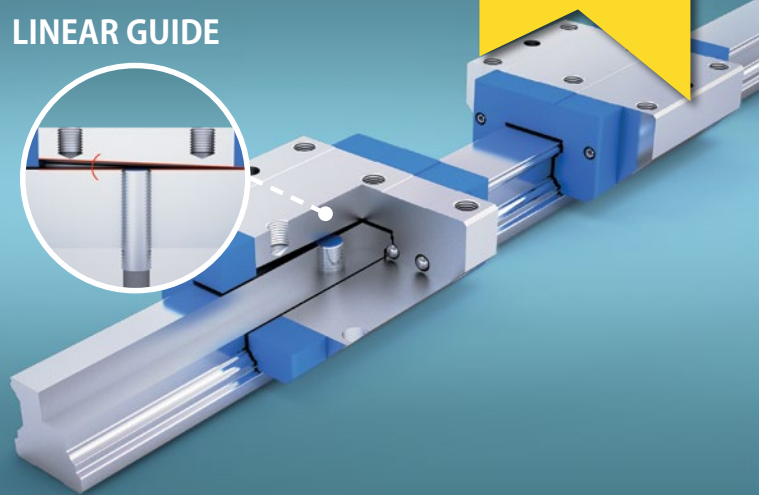


- Generation of velocity gradient using on-board cumulative data store



- High-speed communication with central control system for time-critical events

## LINEAR GUIDE



### SMART TASKS



- Reliable position sensing on high-speed approach
- High-accuracy lateral position measurement during final stage positioning



- IO-Link smart profile simplifies control-system integration



- Sensor configuration is backed-up automatically on the local IO-Link Master

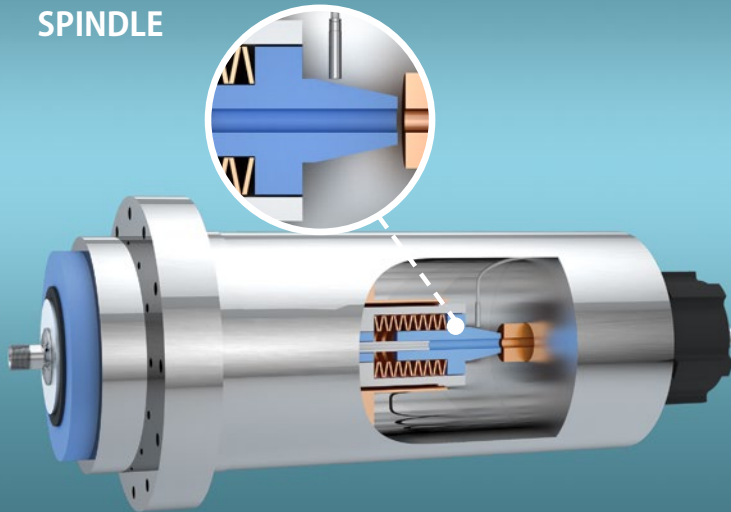


- User-configured setpoints ensure precise window-mode positioning



- Unique embedded sensor ID eliminates installation errors

## SPINDLE



### SMART TASKS



- Precision real-time measurement of drawbar position



- Threshold alarms identify over-temperature and end of service life
- Sensor configuration is backed-up automatically on the local IO-Link Master



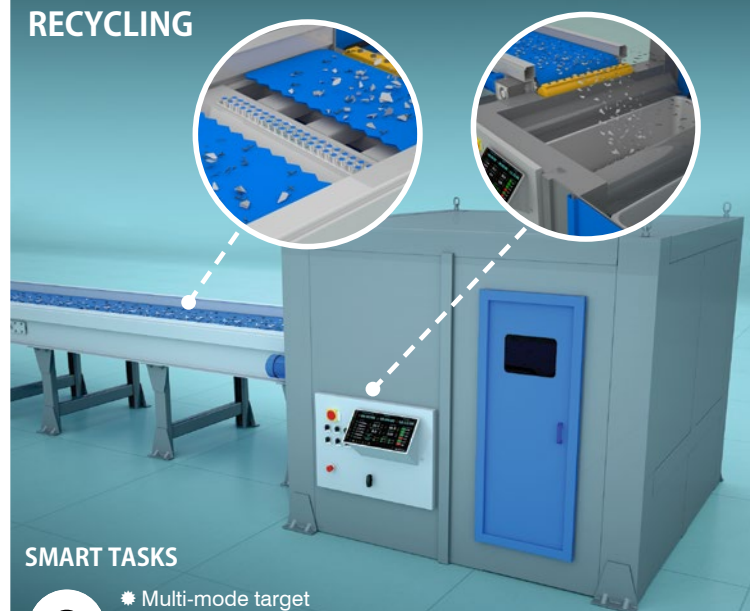
- User-configured setpoints ensure accurate end-of-travel position sensing



- High-speed notification of time-critical events

- Self-test function guards against sensor failure

## RECYCLING



### SMART TASKS



- Multi-mode target recognition at constant target distance



- Unique embedded sensor ID eliminates installation error



- High-speed localized communication with air-knife actuators



- Cumulative cycle/target counting in each of two modes

- Threshold alarms identify over-temperature and end of service life

- Sensor configuration is backed-up automatically on the local IO-Link Master

# INDUCTIVE SENSORS

## EXCELLENCE IN NORMAL ENVIRONMENTS

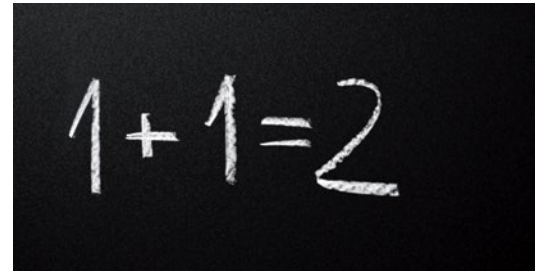
### BASIC

#### KEY ADVANTAGES

- ✓ Exceptional price/performance ratio
- ✓ Excellent accuracy
- ✓ Outstanding switching-point stability
- ✓ Vibration and shock resistant

#### INDUSTRIES

Automotive production and supply, machine tool, energy, packaging, logistics, materials handling, textile, assembly, automation



Textile spinning machine automation



### HIGHLIGHTS

#### C44 SERIES

- ✓ Highly flexible sensor solution
- ✓ Suitable for rough environments, IP68/IP69K impervious
- ✓ Active face mountable in 5 directions
- ✓ Long operating distances
- ✓ Easy click-and-lock mounting



Position detection on crane



#### FULL INOX BASIC

- ✓ One-piece stainless steel housing (sensing face included)
- ✓ Factor 1 on steel and aluminum
- ✓ Outstanding lifetime and robustness due to Condet® technology and Contrinex ASIC
- ✓ Practically indestructible sensor



Wind turbine speed monitoring



#### EXTRA DISTANCE

- ✓ Up to 4-times standard operating distance, proven for more than 20 years across the world's largest installed base
- ✓ Outstanding lifetime and electromagnetic compatibility due to Condist® technology and Contrinex ASIC
- ✓ Special material detection (e.g. carbon fiber)



Presence sensing in automotive factory



IO-Link

Housing size mm		Ø6.5	M8	C8	M12	M18	M30	C44
s <sub>n</sub> mm	Classics	1.5 ... 2	1.5 ... 4	1.5 ... 2	2 ... 8	5 ... 12	10 ... 25	15 ... 40
	Extra Distance	3	3 ... 6	3	6 ... 10	12 ... 20	22 ... 40	–
	Full Inox	–	2	–	3	5	10	–



## FULL FUNCTIONALITY, SMALLEST SIZE MINIATURE

### KEY ADVANTAGES

- ✓ Smallest self-contained inductive sensors with **IO-Link** on the market
- ✓ Ideal for mounting where space is limited
- ✓ Outstanding temperature stability from  $-25^{\circ}\text{C}$  ( $-13^{\circ}\text{F}$ ) to  $+70^{\circ}\text{C}$  ( $+158^{\circ}\text{F}$ ) or  $+85^{\circ}\text{C}$  ( $+185^{\circ}\text{F}$ ) for Full Inox types
- ✓ Sensor weight starting as low as 18 g
- ✓ Electronics vacuum potted for optimum long-term reliability under high stress

### INDUSTRIES

Machine tool, vehicles, assembly, automation, robotics, micromechanics, special purpose machines

### HIGHLIGHTS

#### MINIMINI

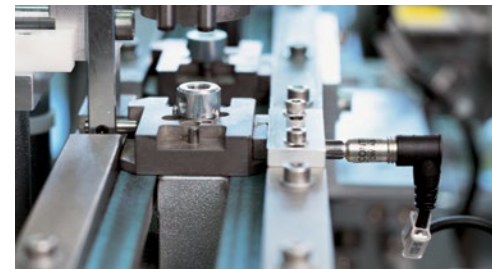
- ✓ Embeddable ultraminiature device
- ✓ Housing length 12 mm, 3 mm diameter, stainless steel V2A
- ✓ Increased operating distance: 1 mm
- ✓ High switching frequency up to 8,000 Hz



Robotics for pick-and-place



Linear drive technology



#### FULL INOX MINIATURE

- ✓ Outstanding lifetime and robustness due to Condet® technology and Contrinex ASIC
- ✓ One-piece stainless steel housing (sensing face included)
- ✓ Long operating distances
- ✓ Factor 1 on steel and aluminum
- ✓ Pressure resistant up to 120 bar (1740 psi)



Machine tool position control



#### EXTRA DISTANCE

- ✓ Long operating distances, proven for more than 20 years across the world's largest installed base
- ✓ Outstanding lifetime and electromagnetic compatibility due to Condist® technology and Contrinex ASIC



Textile spinning machine automation



**IO-Link**

Housing size mm		Ø3	M4	Ø4	M5	C5
s <sub>n</sub> mm	Classics	0.6 ... 1	0.6 ... 1	0.8 ... 1.5	0.8 ... 1.5	0.8 ... 1.5
	Extra Distance	–	–	2.5	2.5	–
	Full Inox	–	–	3	3	–

# INDUCTIVE SENSORS

## EXTREME DURABILITY IN HARSH ENVIRONMENTS

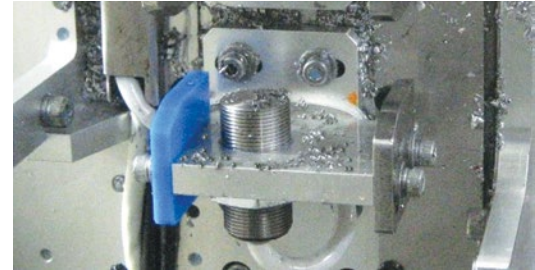
## EXTREME

### KEY ADVANTAGES

- ✓ One-piece stainless-steel housing
- ✓ Mechanically and chemically extremely robust
- ✓ Corrosion resistant
- ✓ IP68 and IP69K, water resistant
- ✓ Pressure resistant up to 100 bar (1,451 psi)
- ✓ Factor 1 on steel and aluminum



Tools for machining metal components



Mixing, lifting and tipping mechanisms



### INDUSTRIES

Automotive production and supply, machine tool, maritime, vehicles, packaging, logistics, materials handling

 IO-Link

Housing size mm	M8	M12	M18	M30	C23
Full Inox (s <sub>n</sub> mm)	3 ... 6	2 ... 15	5 ... 20	10 ... 40	7

## ANALOG OUTPUT FOR DISTANCE CONTROL

## ANALOG OUTPUT

### KEY ADVANTAGES

- ✓ Longest sensing ranges
- ✓ Best temperature stability
- ✓ Excellent repeat accuracy
- ✓ Resolution in  $\mu\text{m}$  range
- ✓ Current or voltage output



Distance monitoring for position control



Drive-belt tension monitoring

### INDUSTRIES

Machine tool, packaging, logistics, materials handling, textile, printing, metal sorting, quality control, vibration monitoring

Housing size mm	C8	M8	M12	M18	M30
Extra Distance (s <sub>n</sub> mm)	0 ... 4	0 ... 4	0 ... 6	0 ... 20	0 ... 40





# INDUCTIVE SENSORS

**PRESSURE RESISTANT UP TO 200 BAR  
(2901 PSI)**

## EXTRA PRESSURE

### KEY ADVANTAGES

- ✓ Pressure resistant up to 200 bar (2,901 psi)
- ✓ Mechanically and chemically rugged
- ✓ Impervious: IP68
- ✓ Gas-tight sensing face
- ✓ Miniature devices

### INDUSTRIES

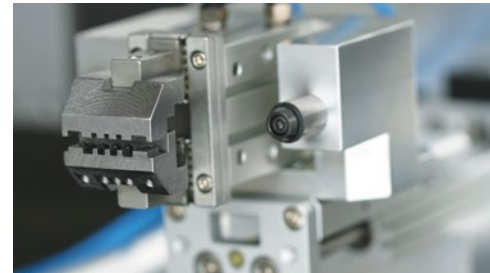
Automotive production and supply, machine tool, energy, pneumatics, lubrication systems, pumps, valves

IO-Link

Housing size mm		Ø4	Ø6.5	M8
s <sub>n</sub> mm	Classics	0.6	–	–
	Extra Distance	–	2.5	2.5



*Micromechanical grippers*



*Pump and valve control*



**PRESSURE RESISTANT UP TO 500 BAR  
(7255 PSI)**

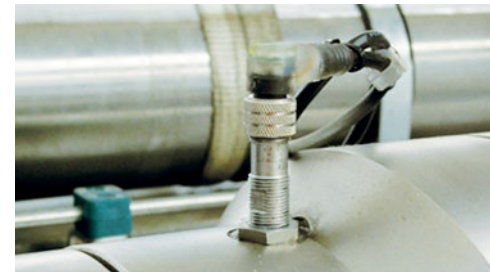
## HIGH PRESSURE

### KEY ADVANTAGES

- ✓ Highest operating (500 bar / 7,255 psi) and peak pressure (1,000 bar / 14,510 psi) on the market
- ✓ Resistant to pressure cycles: 50 times longer lifetime under pressure than the market standard
- ✓ Gas-tight sensing face
- ✓ Large temperature range –25°C (–13°F) ... +100°C (+212°F)



*Hydraulic cylinder control with sensors*



*Valve control for concrete pumps*



### INDUSTRIES

Automotive production and supply, machine tool, energy, maritime, hydraulic and fluid power, concrete pumps, injection molding machines

IO-Link

Housing size mm		M5/P5	M8/P8	M12/P12	M14/P20
s <sub>n</sub> mm	Extra Distance	1	1.5	1.5 ... 2.5	3
	Full Inox	–	–	1.5	–

# INDUCTIVE SENSORS

**TEMPERATURE RESISTANT  
UP TO +120°C (+248°F)**

## EXTRA TEMPERATURE

### KEY ADVANTAGES

- ✓ Temperature resistant up to +120°C (+248°F)
- ✓ Excellent long term reliability
- ✓ Outstanding accuracy

### INDUSTRIES

Automotive production and supply, machine tool, energy, aerospace

 IO-Link

Housing size mm	M5	M8	M12	M18
Classics (s <sub>n</sub> mm)	0.8	4	2...4	5



*Aircraft door monitoring*



*Automotive part sensing*



**TEMPERATURE RESISTANT  
UP TO +230°C (+446°F)**

## HIGH TEMPERATURE

### KEY ADVANTAGES

- ✓ Highest long-term stability due to fully potted electronics
- ✓ Long sensor life
- ✓ Reliable sensing in high temperature applications
- ✓ Compact construction with integral amplifier for temperatures up to +180°C (+356°F)
- ✓ External amplifier module for temperatures up to +230°C (+446°F)



*Automated bakery equipment*



*Paintshop in automotive industry*



### INDUSTRIES

Automotive production and supply, paintshops, surface treatment, bakery equipment

Housing size mm	M8	M12	M18	M30	M50
Classics (s <sub>n</sub> mm)	2	3/4	5	10/15	25



# INDUCTIVE SENSORS

## EASY INSTALLATION AND HIGH SWITCHING FREQUENCY

## 2-WIRE

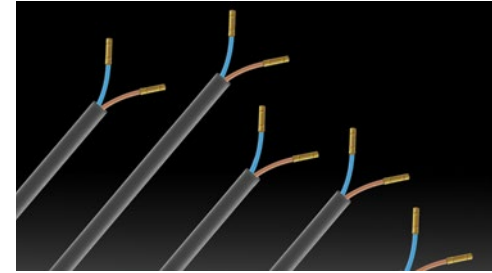
### KEY ADVANTAGES

- ✓ Two-wire sensors for series connection
- ✓ Sizes from Ø3 mm to M30 and 5 × 5 mm
- ✓ DC and AC/DC types
- ✓ NAMUR types with switching frequencies up to 10,000 Hz

### INDUSTRIES

Automotive production and supply, machine tool, packaging, logistics, materials handling, textile

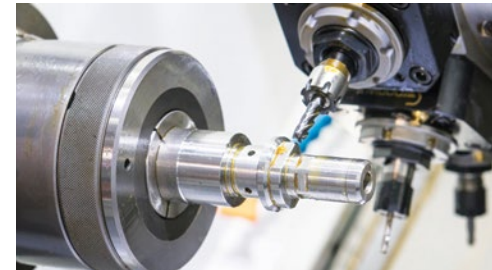
Housing size mm	Ø3	M4	Ø4	M5	C5	Ø6.5	M8	M12	M18	M30
Classics (s <sub>n</sub> mm)	0.6	0.6	0.8	0.8	0.8	1.5	1.5 / 2.5	2 / 4	5 / 8	10 / 15



Automotive part sensing



Spindle-cutting machine tool



## FOR SHIPS, PORTS AND OFFSHORE

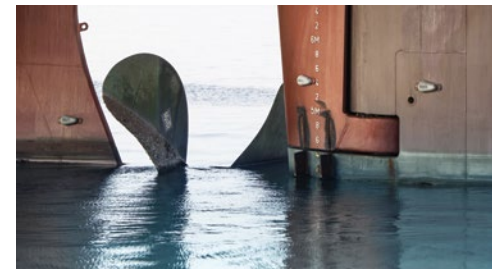
## MARITIME

### KEY ADVANTAGES

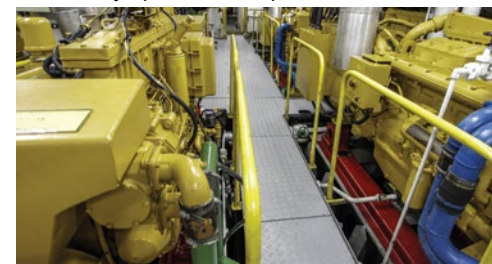
- ✓ GL approved, class DNV-GL-CG-0339
- ✓ Special EMC protection
- ✓ Resistant to corrosion and salt water
- ✓ Impervious, enclosure rating IP68 or IP69K
- ✓ Temperature range –25 ... +85°C (–13 ... +185°F)
- ✓ Full Inox types: one-piece stainless-steel housing (V4A/AISI 316L), factor 1 on steel and aluminum
- ✓ Pressure-resistance available up to 500 bar (800 bar peak)



Wear monitoring, propeller shaft



Machinery spaces in ships



### INDUSTRIES

Maritime, machine tool, energy, vehicles, ships, port and offshore installations

IO-Link							
Housing size mm		M10	M12	M18	M30	P12G	C23
s <sub>n</sub> mm	Full Inox	–	6	10	20	1.5	7
	Classics	0.6	–	–	–	–	–

# INDUCTIVE SENSORS

TOUGHER,  
TRIED-AND-  
TESTED  
LIVE SENSOR  
DATA FOR IoT

REVOLUTIONARY PROTECTION  
FOR LONG LIFE

## WELD-IMMUNE

### KEY ADVANTAGES



#### ANTI-SPATTER COATING

Activstone® coating on all external surfaces resists weld spatter in spot, MIG and MAG applications.



#### WELD-FIELD IMMUNITY

Contrinex sensors resist magnetic interference from medium-frequency weld fields, current up to 15 kA.



#### IMPACT RESISTANCE

With one-piece stainless-steel housings and Condet® technology, Full Inox sensors offer maximum impact resistance.



Welding cell in automotive factory



OEM welding equipment



Automotive production and supply




Welding equipment



### INDUSTRIES

Automotive production and supply, welding equipment

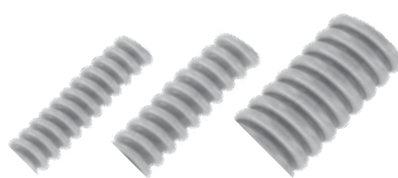
 IO-Link \*available Q2/2021

Housing size mm	M8	M12	M18	M30	C23
Full Inox (s <sub>n</sub> mm)	3	6	10	16	7
*Classics (s <sub>n</sub> mm)	2	4	8	—	—

### ACCESSORIES



Cables



Protective tubes



Mounting brackets



# INDUCTIVE SENSORS

## FOR THE HARSHTEST MACHINING ENVIRONMENTS

### CHIP-IMMUNE

#### KEY ADVANTAGES

- ✓ Detection not influenced by chips of steel, stainless steel, aluminum, brass, copper or titanium
- ✓ Detection of targets made of the above metals
- ✓ Robust, one-piece stainless-steel housing, protection rating IP68 and IP69K
- ✓ Temperature range  $-25 \dots +85^{\circ}\text{C}$  ( $-13 \dots +185^{\circ}\text{F}$ )
- ✓ Size M12, M18 and M30
- ✓ Operating distances up to 12 mm

#### INDUSTRIES

Automotive production and supply, machine tool

 IO-Link

Housing size mm	M12	M18	M30
Full Inox (s <sub>n</sub> mm)	3	5	12



Tools for machining metal parts



Metal recycling equipment



## DOUBLE-SHEET DETECTION IN METALWORKING

### DOUBLE-SHEET

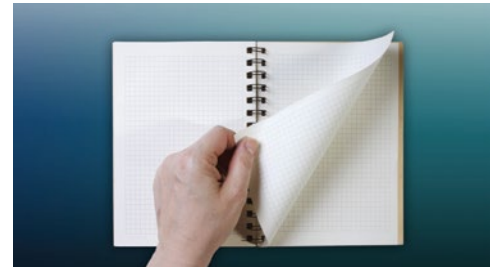
#### KEY ADVANTAGES

- ✓ Double-sheet detection (steel and aluminum) with sensitivity of 0.8–1.2 mm per sheet
- ✓ Full Inox: extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP68 and IP69K
- ✓ Pressure resistant up to 80 bar

#### INDUSTRIES

Automotive production and supply, machine tool, surface treatment, stamping and forming, aluminum industry

Housing size mm	M30
Full Inox (s <sub>n</sub> mm)	4



Robot handling of sheet metal



Double-feed prevention for formed parts



# INDUCTIVE SENSORS

## ECOLAB APPROVED FOR HARSHTEST CLEANING PROCESSES

## WASHDOWN

### KEY ADVANTAGES

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

### INDUSTRIES

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

 IO-Link

Housing size mm		M12	M18	M30
s <sub>n</sub> mm	Full Inox	6 ... 10	10 ... 20	20 ... 40
	Classics	2	–	–



Sorting conveyor for egg packaging



Brewery production equipment

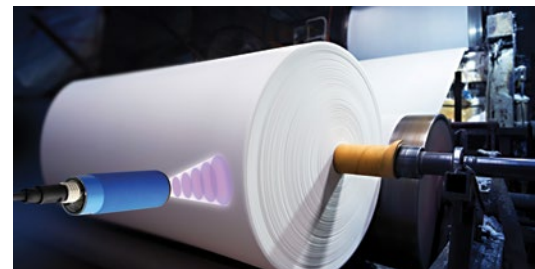


# ULTRASONIC SENSORS

## IDEAL FOR LIQUID OR GRANULAR TARGETS

### KEY ADVANTAGES

- ✓ Precise control of position, distance, height and level
- ✓ Sensing ranges up to 6,000 mm
- ✓ Diffuse and reflex types
- ✓ Robust housings in food-grade stainless steel or plastic, IP67
- ✓ M18 in standard or short housing
- ✓ M30 in standard housing or with large front
- ✓ Various output types



Level monitoring in plastic production



Liquid level sensing in food industry



### INDUSTRIES

Packaging, logistics, materials handling, food and beverage, agriculture,  
filling machines

\*Metal or plastic housing    \*\*Plastic housing

SERIES Housing size mm		M18 short body*	M18 standard body*	M30 standard body*	M30 large head**
s <sub>n</sub> mm	Diffuse	300 / 1,200	900 / 2,000	2,500 / 3,500	6,000
	Reflex	300 / 1,200	900 / 2,000	–	–



# PHOTOELECTRIC SENSORS

WORLD-  
LEADING  
BACKGROUND  
SUPPRESSION

LIVE SENSOR  
DATA FOR IoT

## FIRST-CLASS PERFORMANCE FOR GENERAL USE STANDARD

### KEY ADVANTAGES


- ✓ First-class sensing ranges
- ✓ Outstanding background suppression characteristics
- ✓ Light sources: red, infrared, laser and pinpoint LED

### INDUSTRIES

Automotive production and supply, machine tool, packaging, logistics, materials handling, food and beverage, textile

## HIGHLIGHTS

### C23 SERIES

- ✓ Small plastic housing, 20 × 30 × 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




Textile spinning machine automation



Beverage filling machines



### M18P SERIES

- ✓ Short housing: M18 × 33 mm (cable version), M18 × 37 mm (connector version)
- ✓ Excellent background suppression characteristics with pinpoint LED
- ✓  IO-Link interface available on PNP types
- ✓ Mutual interference immunity
- ✓ Easy flush mounting
- ✓ Easy-to-mount special accessories for right-angle emission












Conveyor systems



 IO-Link

\*available Q4/2021

\*\*available Q3/2021

SERIES	M12M*	1120	M18P	M18M**	1180	C23	3030	4050	C55
Housing size mm	M12	M12	M18	M18	M18	20×30×10	30×30×15	40×50×15	50×50×23
									
$s_n$ mm									
Diffuse	800	300	1,200	1,200	250/600	1,500	600/1,200	1,200	–
Reflex	4,000	1,500	7,000	7,000	2,000	8,000	2,000/4,000	4,000	–
Through-beam	10,000	10,000/50,000	30,000	30,000	20,000/50,000	30,000	6,000/12,000	50,000	–
Background suppression	–	–	250	250	120	300	200	500	5,000

# PHOTOELECTRIC SENSORS

WORLD'S  
SMALLEST  
LIVE SENSOR  
DATA FOR IoT

## SMALLEST ON THE MARKET MINIATURE

### KEY ADVANTAGES

#### D04 / M05 / 0507 series

- ✓ Rugged diffuse or through-beam sensors in steel housing: Ø4 mm, M5 or 5 × 7 × 40 mm
- ✓ Extremely compact self contained photoelectric sensors
- ✓ Accurate target detection due to focused red light beam

#### C12 series

- ✓ Plastic housing, 13 × 21/27 × 7 mm
- ✓ Red pinpoint LED, small visible light spot
- ✓ Long sensing ranges
- ✓ Excellent background suppression up to 120 mm with 3-turn potentiometer

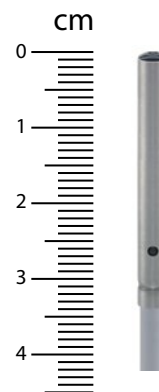
### INDUSTRIES

Packaging, logistics, materials handling, assembly, automation, robotics, precision engineering, semiconductors, electronics, vending machines, miniature conveyors, grippers

### HIGHLIGHTS

#### D04 SERIES

- ✓ Embeddable housing in stainless steel V2A, Ø4 mm
- ✓ Calibrated sensing ranges
- ✓ Teach available with extended type
- ✓ High switching frequency
- ✓ Connection by cable or M8 pigtail
- ✓ Enclosure rating IP67



#### M05 SERIES

- ✓ Embeddable housing in stainless steel V2A, threaded M5
- ✓ Calibrated sensing ranges
- ✓ Teach available with extended type
- ✓ High switching frequency
- ✓ Connection by cable or M8 pigtail
- ✓ Enclosure rating IP67



Micromechanical grippers



PCB component presence check



Detection of small parts



IO-Link

SERIES Housing size mm		D04 Ø4	M05 M5	0507 □5×7×40	C12 □13×21/27×7
s <sub>n</sub> mm	Diffuse	12 / 24 / 60 / 120	12 / 24 / 60 / 120	20 / 50 / 90	–
	Background suppression	–	–	–	15 / 30 / 120
	Reflex	–	–	–	3,000
	Through-beam	600	600	–	2,000



# PHOTOELECTRIC SENSORS

## RELIABLE SHORT AND LONG-RANGE SENSING FIBER-OPTIC

### KEY ADVANTAGES

#### Fiber-optic sensors

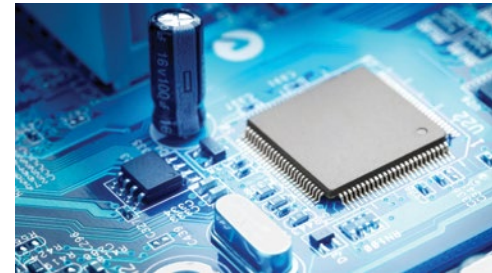
- ✓ Robust 3030 series (30 × 30 × 15 mm)
- ✓ DIN-rail mounted 3060 series (31 × 60 × 10 mm) suitable for multiple-sensor applications
- ✓ Distance setting by potentiometer or teach-in

#### Fibers

- ✓ Large selection of types, including cylindrical light beam, multi-beam, liquid-level monitoring, low-and high-temperature
- ✓ Diffuse or through-beam sensing, axial or radial
- ✓ Synthetic fibers with bending radii from 2 mm, suitable for cutting on-site



Printed circuit board production



Presence sensing by industrial robot



### INDUSTRIES

Packaging, logistics, materials handling, robotics, precision engineering, printed circuit board production, electronics, vending machines, special machinery, quality control

IO-Link

SERIES Housing size mm	3030 □30×30×15	3060 □30×60×10
Fiber-optic amplifier (s <sub>n</sub> mm)	60 / 120	200

## HIGH PRECISION AND DIRECT DIGITAL TRANSMISSION DISTANCE

### KEY ADVANTAGES

#### C23 Distance measuring sensors

- ✓ Two distance measurement ranges: 20 ... 80 mm and 30 ... 200 mm
- ✓ Housing 20 × 34 × 12 mm
- ✓ High precision and repeatability
- ✓ Settable analog range for optimum distance measurement
- ✓ Enclosure rating IP67/IP69K

#### C55 distance measuring sensors

- ✓ Distance measurement up to 5,000 mm
- ✓ Housing 50 × 50 × 23 mm
- ✓ High precision and repeatability
- ✓ Settable analog range for optimum distance measurement
- ✓ Enclosure rating IP67/IP69K, Ecolab approved



Position control in furniture factory



Sensing and measuring shelf space



### INDUSTRIES

Packaging, logistics, materials handling, woodworking industry, quality control, precision engineering, printed circuit board production

IO-Link

SERIES Housing size mm	C23 □20×34×12	C55 □50×50×23
s <sub>n</sub> mm		
Short range	80 / 100 / 200	–
Medium range	–	5,000

# PHOTOELECTRIC SENSORS



**MOST RELIABLE  
TRANSPARENT  
OBJECT  
DETECTION**

**LIVE SENSOR  
DATA FOR IoT**

## OUTSTANDING RELIABILITY AND EASE OF ADJUSTMENT

## TRANSPARENT OBJECT

### KEY ADVANTAGES

- ✓ Light sources: UV and red LED
- ✓ Highly reliable reflex system
- ✓ C23 plastic housing, 20 × 30 × 10 mm
- ✓  **IO-Link** interface available on PNP types
- ✓ Versions available with stability alarm as second output
- ✓ Adjustment by teach or  **IO-Link**
- ✓ Mutual interference immunity
- ✓ Enclosure rating IP67, Ecolab approved

### INDUSTRIES

Packaging, logistics, materials handling, food and beverage, filling machines, pharmaceutical industry

## HIGHLIGHTS

### C23 TRANSPARENT UV

With Contrinex's patented UV technology, these sensors are ideally suited for the presence control of transparent objects.

- ✓ Extremely reliable detection thanks to strong absorption of UV light by plastic and glass material
- ✓ Easy sensor set-up, even for thinnest transparent objects
- ✓ Low environmental sensitivity minimizes threshold adjustments and maximizes uptime
- ✓ Autocollimated, polarized UV light beam eliminates blind zone, allowing detection of targets close to the sensor or through a small notch
- ✓ Sensing range up to 1,200 mm




*Pharmaceutical vial processing*



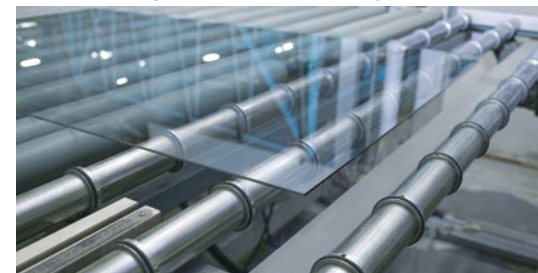
### C23 TRANSPARENT STANDARD

For applications requiring the detection of thicker or larger transparent objects, these sensors provide a highly favorable price-performance ratio.

- ✓ Red polarized light source
- ✓ Calibrated sensing range up to 5,000 mm
- ✓ Sensitivity adjustment via teach button,  **IO-Link** or potentiometer



*Detection of glass sheet on conveyor*



 **IO-Link**

SERIES Housing size mm	C23 UV Light □ 20 × 30 × 10	C23 Red Light □ 20 × 30 × 10
Reflex (s <sub>n</sub> mm)	1,200	5,000



# PHOTOELECTRIC SENSORS

## EXCELLENT RESOLUTION FOR SMALLEST VARIATIONS

## COLOR AND CONTRAST

### KEY ADVANTAGES

- ✓ Rugged housing, 40 × 50 × 15 mm
- ✓ Connector adjustable at 0°, 45° and 90°
- ✓ 5 switching tolerance levels

### INDUSTRIES

Packaging, logistics, materials handling, food and beverage, filling machines, printing, quality control, sorting processes, tobacco industry, wood processing machines

### HIGHLIGHTS

#### COLOR SENSORS

Color sensors utilize energetic-diffuse sensing technology to detect variations in target color, allowing color sorting or color control. A “teach-in” function is used to program up to three separate outputs. Five selectable tolerance levels for each output enable sensors to recognize or ignore even the smallest variations of color.

- ✓ 3 color teach channels with independent outputs
- ✓ High positioning tolerance
- ✓ High switching frequency: up to 4 kHz



*Color sorting on drinks conveyor*



*Detection of anodized products*



#### CONTRAST SENSORS

Contrast sensors are ideal for detecting print marks in printing, labelling and packaging processes. Excellent contrast resolution, a high switching frequency (up to 10 kHz) and five tolerance levels ensure accurate detection and positioning, even when contrast differences are minimal.

- ✓ Detection of very small print marks thanks to a narrow, collimated light spot
- ✓ RGB emission technology with best emission color automatically selected
- ✓ Excellent tolerance to target distance variations
- ✓ High switching frequency: up to 10 kHz



*Detection of marks on cartons*



*Print-mark detection on label machine*



**SERIES**  
Housing size mm

**4050 Color**  
□ 40 × 50 × 15

**4050 Contrast**  
□ 40 × 50 × 15

Diffuse (s<sub>n</sub> mm)

40

12

# PHOTOELECTRIC SENSORS

## FAST DETECTION, COUNTING AND MEASUREMENT

## LIGHT GRIDS

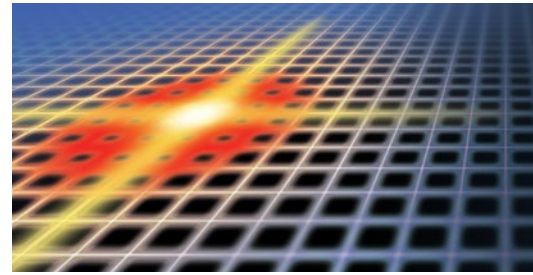
### KEY ADVANTAGES

#### Detection grids

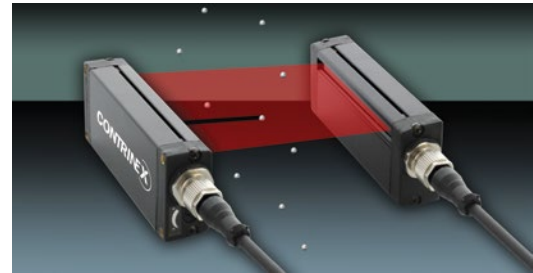
- ✓ Fast response time  
0.8 ms... 4.8 ms
- ✓ Ideal for detection and counting of even the smallest objects
- ✓ Resolution: 0.9 mm, 2 mm, 4 mm, 8 mm or 25 mm
- ✓ Detection height: up to 2,010 mm

#### Measurement grids

- ✓ Ideal for position and dimension control
- ✓ Center beam spacing: 5 mm or 12 mm
- ✓ Analog output 0–10 V or 4–20 mA
- ✓ Measurement height: up to 1,418 mm



Counting of small objects



Carton measurement and sorting



### INDUSTRIES


Packaging, logistics, materials handling, assembly, automation, laundry industry, small parts production, woodworking industry

SERIES Housing size mm		DGI □40×20.5×H	MGI □40×20.5×H
s <sub>n</sub> mm	Detection grids	8,000	–
	Measurement grids	–	4,000

## ROBUST SPACE-SAVING DESIGN OFFERS VERSATILITY AND SIMPLICITY

## FORK SENSORS

### KEY ADVANTAGES

- ✓ High resolution: Ø0.1–0.2 mm
- ✓ High frequency up to 14 kHz
- ✓ 4 sensor modes: Standard, High Resolution, Power, Speed
- ✓  IO-Link v1.1
- ✓ Sensitivity adjustment allowing detection of transparent objects
- ✓ Compact design accommodates photoelectric emitter and receiver in a single housing
- ✓ Push-pull output keeps inventory costs down while allowing exceptional flexibility
- ✓ Robust space-saving housing ensures precise alignment requiring no on-site adjustment



Robotics



Beverage filling machines

### INDUSTRIES

Robotics, packaging, materials handling, logistics, food and beverage

 IO-Link

SERIES Housing size mm	U 10 □25×45×10	U 20 □40×50×10	U 30 □50×60×10	U 40 □60×70×10	U 50 □70×80×10	U 80 □100×80×10	U 100 □120×80×10	U 120 □144×90×12
Through-beam (s <sub>n</sub> mm)	10	20	30	40	50	80	100	120



# SAFETY LIGHT CURTAINS

## EXCELLENT PRICE/PERFORMANCE RATIO

## BASIC STANDARD / SLIM

Light curtains are TÜV, CE and UL-certified according to IEC 61496-1 and -2 and ISO 13849-1. Protective heights range from 142 to 1,827 mm with permanent auto-control and low power consumption. The aluminum housings are slim (26 × 26 mm) or standard (42 × 48 mm) and connection is via an integral 5-pin M12 connector or pigtail.



		RESOLUTION MM	HOUSING	CATEGORY	KEY ADVANTAGES
BASIC		14	STANDARD	Cat. 4	<ul style="list-style-type: none"> <li>✓ Max. operating range 3.5 m</li> <li>✓ Operating temperature –35 ... +60°C</li> <li>✓ IP65, IP67</li> </ul>
		30	STANDARD	Cat. 4	<ul style="list-style-type: none"> <li>✓ Max. operating range 12 m</li> <li>✓ Operating temperature –35 ... +60°C</li> <li>✓ IP65, IP67</li> </ul>
			STANDARD	Cat. 2	<ul style="list-style-type: none"> <li>✓ Max. operating range 12 m</li> <li>✓ Operating temperature 0 ... +50°C</li> <li>✓ IP65, IP67</li> </ul>
			SLIM	Cat. 2	<ul style="list-style-type: none"> <li>✓ No blind zone</li> <li>✓ Flexible mounting and connection</li> <li>✓ Operating temperature 0 ... +55°C</li> <li>✓ Max. operating range 8 m</li> </ul>
		300 400 500	STANDARD	Cat. 4	<ul style="list-style-type: none"> <li>✓ Max. operating range 50 m</li> <li>✓ Operating temperature –35 ... +60°C</li> <li>✓ IP65, IP67</li> </ul>

## WIRELESS CONFIGURATION (Bluetooth®)

## EXTENDED SLIM

Type 4 light curtains from the EXTENDED SLIM range are TÜV, CE and UL certified according to IEC 61496-1/2, IEC 61508-1/2/3 and ISO 13849-1. Protective heights range from 170 to 1610 mm with integrated EDM\*, restart interlock and beam coding. Since EDM includes a relay monitoring function, users can also avoid the cost of wired relays. Wireless configuration is easy via the free Bluetooth® smartphone app. No additional tool or cable is required.

\*External Device Monitoring



EXTENDED		14	SLIM	Cat. 4	<ul style="list-style-type: none"> <li>✓ No blind zone</li> <li>✓ Beam coding (3 channels), EDM, start and restart interlock configurable functions</li> <li>✓ Wireless configuration through Bluetooth®</li> </ul>
		30	SLIM	Cat. 4	<ul style="list-style-type: none"> <li>✓ No blind zone</li> <li>✓ Beam coding (3 channels), EDM, start and restart interlock configurable functions</li> <li>✓ Wireless configuration through Bluetooth®</li> </ul>


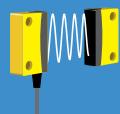

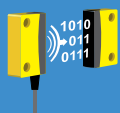
# SAFETY SENSORS AND ACCESSORIES

## NON-CONTACT MONITORING OF DOORS





### MAGNETIC, RFID

MAGNETIC and RFID safety sensors are ideal for monitoring guard doors, hoods or covers. Their compact housings with standard fixing are particularly suitable for washdown applications in the food industry. RFID types are also ideal for multi-sensor applications, such as long assembly lines. Thanks to non-contact operation and coded communication, service life is very long.



		PRINCIPLE	HOUSING MM	CATEGORY	KEY ADVANTAGES
MAGNETIC			36 × 26 × 13	up to Cat. 4	<ul style="list-style-type: none"> <li>✓ Magnetically coded, ISO 14119 type 4</li> <li>✓ Detection through metal plate possible</li> <li>✓ IP6K9K, Ecolab</li> </ul>
			88 × 25 × 13	up to Cat. 4	<ul style="list-style-type: none"> <li>✓ Magnetically coded, ISO 14119 type 4</li> <li>✓ Detection through metal plate possible</li> <li>✓ IP6K9K, Ecolab</li> </ul>
RFID			36 × 26 × 13	Cat. 4	<ul style="list-style-type: none"> <li>✓ RFID coded, ISO 14119 type 4</li> <li>✓ Cascadable up to 30 units</li> <li>✓ EDM and diagnostic function</li> <li>✓ IP6K9K, Ecolab</li> </ul>

### RELAY, MOUNTING BRACKETS

RELAY			22.5 × 99 × 114.5	Cat. 4	<ul style="list-style-type: none"> <li>✓ Performance Level (PL) e and category 4 according to EN/ISO 13849-1</li> <li>✓ Manual or automatic restart</li> <li>✓ Short response time</li> </ul>
MOUNTING BRACKETS			Top/bottom mounting brackets		<ul style="list-style-type: none"> <li>✓ Synthetic mounting brackets</li> <li>✓ Suitable for SLIM light curtains</li> <li>✓ Pair of brackets supplied with each light curtain</li> </ul>
			Side mounting brackets		<ul style="list-style-type: none"> <li>✓ Metal mounting brackets</li> <li>✓ Suitable for SLIM light curtains</li> </ul>
			Side/end mounting brackets		<ul style="list-style-type: none"> <li>✓ Metal mounting brackets</li> <li>✓ Suitable for SLIM light curtains</li> </ul>



## BASIC AND USB SYSTEM

BASIC transponders (tags) and read/write modules (RWMs) provide cost-effective solutions with ISO/IEC 15693-compatible HF components and a proprietary LF system. Data protection is excellent, transfer time is fast and all components use the same ContriNET protocol with RS-485/USB physical layer. For hardware connection to a computer, USB RWMs provide a USB output and integral connector cable (2 m). Alternatively, a separate USB Adaptor enables a computer to communicate with up to 10 daisy-chained RWMs.



			FREQUENCY	HOUSING SIZE MM	READ/ WRITE DISTANCE MM	KEY ADVANTAGES
BASIC	TRANSPONDER			Ø20	0 ... 28	<ul style="list-style-type: none"> <li>✓ HF and LF passive tags, no battery required</li> <li>✓ LF tags embeddable in metal</li> <li>✓ Insensitive to dirt</li> <li>✓ Temperature range –40 ... +125°C (–40 ... +257°F)</li> <li>✓ IP67</li> </ul>
				Ø30	0 ... 29	
				Ø50	0 ... 41	
				Ø9	0 ... 14	
				Ø16	0 ... 30	
				Ø20	0 ... 34	
	RWM			Ø30	0 ... 45	<ul style="list-style-type: none"> <li>✓ ContriNET RS-485 protocol with outstanding fieldbus coverage</li> <li>✓ LF and HF RWMs can be daisy-chained on same network</li> <li>✓ Temperature range –25 ... +80°C (–13 ... +176°F), IP67, integral S12 connector</li> </ul>
				Ø50	0 ... 67	
				M18	0 ... 36	
				M30	0 ... 41	
USB	RWM			M18	0 ... 36	<ul style="list-style-type: none"> <li>✓ ContriNET USB protocol for direct connection to PC (non-networkable)</li> <li>✓ Compatible with ContriNET BASIC support tools and DEMO software; DLL for easy development of custom solutions</li> <li>✓ Temperature range –25 ... +70°C (–13 ... +158°F), IP67, integral USB A male connector</li> </ul>
				M30	0 ... 41	
				M18	0 ... 31	
				M30	0 ... 60	
	INTER-FACE			67×66×28		

## HIGH TEMPERATURE TAGS

Designed for environments up to 180°C or 250°C, HIGH TEMPERATURE tags offer exceptional longevity and a thermal cycling reliability of 1,000 hours (or 1,000 cycles). Tags are insensitive to dirt and provide between 128 and 2,048 Bytes of user memory. As passive devices, no battery or other power source is required. Housings are impervious (IP68 & IP69K).



HIGH TEMP.	TRANSPONDER			Ø26	0 ... 31	<ul style="list-style-type: none"> <li>✓ HF tag RTP-0263-020: –25 ... +180°C (–13 ... +356°F), embeddable in metal</li> </ul>
				Ø50	0 ... 50 / 44 / 42	<ul style="list-style-type: none"> <li>✓ HF tags RTP-0502-0#2: –25 ... +250°C (–13 ... +482°F), 100% silicone-free</li> </ul>

## EXTREME AND WASHDOWN SYSTEM

Read/write modules (RWMs) and embeddable tags from these two ranges feature robust, full-metal, stainless-steel construction. They offer outstanding performance in metallic environments and are insensitive to dirt and metal chips. For the highest mechanical and chemical resistance, WASHDOWN components in food-grade stainless steel (V4A/AISI 316L) are fully sealed and laser welded. They function reliably when immersed in fluids such as water or oil.



			FREQUENCY	HOUSING SIZE MM	READ/ WRITE DISTANCE MM	KEY ADVANTAGES
EXTREME	TRANSPONDER			Ø 10	0 ... 17	<ul style="list-style-type: none"> <li>✓ LF passive tags, no battery required</li> <li>✓ All-metal, stainless-steel housings (V2A/AISI 304) resist corrosion, impact and abrasion</li> <li>✓ Temperature range –40 ... +95°C (–40 ... +203°F)</li> <li>✓ IP68 &amp; IP69K (when embedded in metal)</li> </ul>
				Ø 16	0 ... 19	
				M16	0 ... 13	
				Ø 26	0 ... 26	
				M30	0 ... 23	
	RWM			M18	0 ... 12	<ul style="list-style-type: none"> <li>✓ ContriNET RS-485 protocol with outstanding fieldbus coverage</li> <li>✓ All-metal, stainless-steel housing (V2A/AISI 304) resists corrosion, impact and abrasion</li> <li>✓ Temperature range –25 ... +80°C (–13 ... +176°F), IP68 &amp; IP69K, integral S12 connector</li> </ul>
				M30	0 ... 12	

WASHDOWN	TRANSPONDER			Ø 10	0 ... 13	<ul style="list-style-type: none"> <li>✓ LF passive tags, no battery required</li> <li>✓ All-metal housings in food-grade stainless steel (V4A/AISI 316L) resist saltwater, solvents, corrosion, impacts and abrasion</li> <li>✓ Temperature range –40 ... +125°C (–40 ... +257°F)</li> <li>✓ IP68 &amp; IP69K</li> </ul>
				Ø 16	0 ... 19	
				M16	0 ... 13	
				Ø 26	0 ... 26	
				M30	0 ... 23	
	RWM			M18	0 ... 12	<ul style="list-style-type: none"> <li>✓ ContriNET RS-485 protocol with outstanding fieldbus coverage</li> <li>✓ All-metal housing in food-grade stainless steel (V4A/AISI 316L) resists saltwater, solvents, corrosion, impacts and abrasion</li> <li>✓ Temperature range –40 ... +125°C (–40 ... +257°F), IP68 &amp; IP69K, integral S12 connector</li> </ul>
				M30	0 ... 12	

## IO-Link R/W MODULES

Ideal for Industry 4.0 solutions, IO-Link read/write modules (RWMs) combine two of the key communication standards in one device: ISO 15693 at the read-write head for communication with tags and ISO 61131-9 at the S12 connector for communication with the control system. Their simplified, plug-and-play installation ensures easy, cost-effective integration.



IO-LINK	RWM			M18	0 ... 42	<ul style="list-style-type: none"> <li>✓  IO-Link protocol V1.1 with two operating modes: <ul style="list-style-type: none"> <li>-  IO-Link device: UID, Read, Write, Auto-Read and Auto-Write commands selectable from the RWM process data</li> <li>- Stand-alone SIO: Tag presence / memory data comparison / RWM Alarms</li> </ul> </li> <li>✓ Temperature range –25 ... +80°C (–13 ... +176°F), IP67, integral S12 connector</li> </ul>
				M30	0 ... 60	
				C44	80	





## INDUCTIVE & PHOTOELECTRIC CABLES



CONNECTOR



CABLE CONNECTION END



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	right angle	PUR	2 m	3	OPEN CABLE	—	S08-3FUW-020
M8	3-pole	straight	PVC	2 m	3	OPEN CABLE	—	S08-3FVG-020
M8	3-pole	right angle	PVC	2 m	3	OPEN CABLE	—	S08-3FVW-020
M8	4-pole	straight	PUR	2 m	4	OPEN CABLE	—	S08-4FUG-020
M8	4-pole	right angle	PUR	2 m	4	OPEN CABLE	—	S08-4FUW-020
M8	4-pole	straight	PVC	2 m	4	OPEN CABLE	—	S08-4FVG-020
M8	4-pole	right angle	PVC	2 m	4	OPEN CABLE	—	S08-4FVW-020
M12	4-pole	straight	PUR	2 m	4	OPEN CABLE	—	S12-4FUG-020
M12	4-pole	right angle	PUR	2 m	4	OPEN CABLE	—	S12-4FUW-020
M12	4-pole	straight	PVC	2 m	4	OPEN CABLE	—	S12-4FVG-020
M12	4-pole	right angle	PVC	2 m	4	OPEN CABLE	—	S12-4FVW-020

## ACCESSORIES

## VIEW ACCESSORIES DATASHEETS

[www.contrinex.com/product-range/accessories](http://www.contrinex.com/product-range/accessories)


UNIVERSAL MOUNTING BRACKETS		MECHANICAL STOPS				PHOTOELECTRIC REFLECTORS	SENSOR TESTER
ASU-0001-080	ASU-0001-120	AMS-0001-M08	AMS-0002-M08	AMS-0001-M12	AMS-0002-M12	LXU-0000-084	
PHOTOELECTRIC MOUNTING BRACKETS							
						LXU-0001-064	
LXW-C23PA-000	LXW-C23PA-002	LXW-DGMGA-000	LLW-M18PA-000	LXW-M18PA-001			ATE-0000-010



## WHY CHOOSE US

- ✓ Leader for sensors and systems in the most challenging operating conditions
- ✓ Most reliable sensors on the market with best temperature compensation
- ✓ Large installed base, proven worldwide since 1972
- ✓ Impeccable Swiss quality, certified to international standards
- ✓ Wide **IO-Link** portfolio with over 3000 products available – ready for Industry 4.0

## CUSTOMER FOCUS

- ✓ Global Contrinex sales network
- ✓ International customer services
- ✓ Solution-oriented application support
- ✓ 5 production sites for worldwide availability
- ✓ 3 logistics hubs for fast delivery

## 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  
Slovakia  
Slovenia  
Spain  
Sweden  
**Switzerland\***  
Turkey  
Ukraine

### AFRICA

Morocco  
South Africa

### THE AMERICAS

Argentina  
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Canada  
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