

# General Catalog



## NEW

### INDUCTIVE SENSORS

- Full Inox Basic with IO-Link
- Full Inox Weld-Immune, M8
- Full Inox C23, cubic with IO-Link
- High Temperature, 230°C (440°F)

### PHOTOELECTRIC SENSORS

- Contrast sensor with IO-Link
- C12: Cubic Subminiature
- C23: Cubic with IO-Link
- C23 Distance: Triangulation
- C55 Distance: TOF

### SAFETY

- Type 2 light curtains for hand protection

### RFID

- LF + HF R/W modules in ContriNet
- HF tags for 180°C (356°F), embeddable in metal
- HF tags for 250°C (482°F)
- EtherCat interface



A  
Swiss  
Company

# INTRODUCTION

## CONTRINEX

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

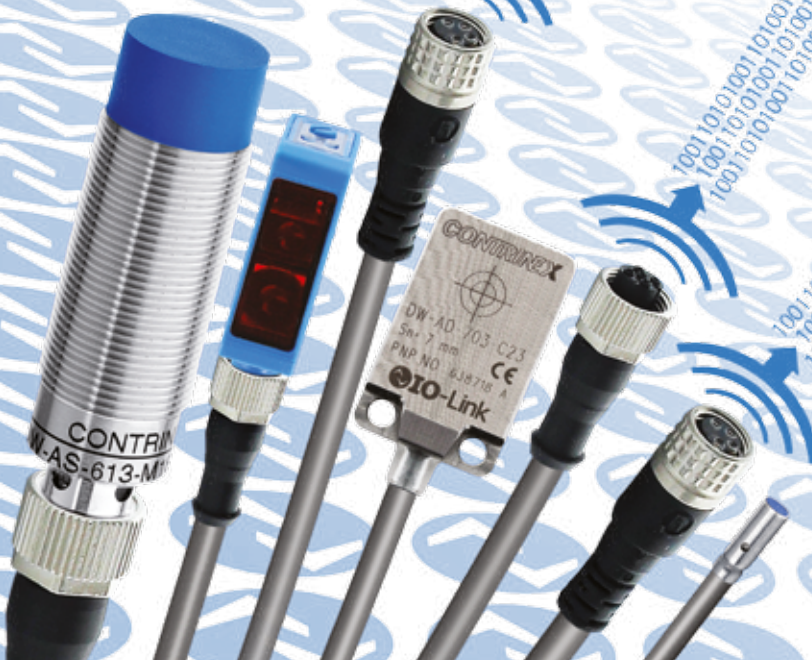
Since its foundation in 1972 by Peter Heimlicher, Dipl Ing ETH, Contrinex has grown from a one-man operation to a multinational group with over 500 employees worldwide. More than 15 subsidiaries cover the core markets in Europe, Asia, North and South America.

### 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
- 8000 products

**Technology leader for sensor intelligence and industrial RFID**

## CONTRINEX - SENSE MORE, DO MORE







# MARKET-LEADING INNOVATION

- 1979** Sensor business starts with self-contained subminiature inductive sensors: Ø4 mm (instead of M8 before)
- 1982** Launch of inductive sensor with patented Condist® technology – market leadership with operating distances 3x standard
- 1986** Launch of Ø3 mm inductive sensors, now market leader for subminiature inductive sensors
- 1996** Market launch of Ø4 mm subminiature photoelectric sensors
- 1999** Launch of world's first inductive sensor with full-metal housing – thanks to patented Condet® technology
- 2005** Integration of Contrinex's excellent performance for inductive sensors in CMOS-ASIC (Application-Specific Integrated Circuit), a proprietary development
- 2007** Launch of RFID products for closed loop industrial applications. First RFID product range with tags and readers in full-metal housing
- 2008** Launch of Safetinex®, the industrial safety product range
- 2009** The smart sensor is born. Launch of next generation ASIC, a "system on a chip", including IO-Link interface
- 2011** Development starts on Contrinex's first ASIC for photoelectric sensors
- 2014** Launch of photoelectric sensor with new generation Contrinex ASIC and IO-Link



*Early inductive sensor produced for own use in 1973 (special version for extreme conditions)*



*ASIC sensor technology*



*Safety product range*



*Subminiature photoelectric sensor*





### SENSORS

#### INDUCTIVE

- BASIC
- MINIATURE
- EXTREME
- EXTRA PRESSURE
- HIGH PRESSURE
- EXTRA TEMPERATURE
- HIGH TEMPERATURE
- WASHDOWN
- ANALOG OUTPUT
- 2-WIRE
- WELD-IMMUNE
- SPECIAL

#### PHOTOELECTRIC

- CYLINDRICAL SUBMINIATURE
- CYLINDRICAL MINIATURE
- CYLINDRICAL SMALL
- CUBIC SUBMINIATURE
- CUBIC MINIATURE
- CUBIC SMALL
- CUBIC COMPACT
- FIBER-OPTIC AMPLIFIERS, FIBERS

#### ULTRASONIC

- MINIATURE
- SMALL
- COMPACT

#### CAPACITIVE

- BASIC
- HIGH PERFORMANCE

### SAFETY

#### LIGHT CURTAINS



- FINGER PROTECTION type 4
- HAND PROTECTION type 4 and type 2
- SAFETY RELAYS
- ACCESS CONTROL type 4

### RFID

#### LOW AND HIGH FREQUENCY

- TRANSPONDERS
- CONTRINET
- USB READ/WRITE MODULES
- HANDHELD DEVICES
- ACCESSORIES
- SOFTWARE
- STARTER KITS

# SENSOR SELECTOR

	INDUCTIVE	PHOTOELECTRIC
		
SENSING DISTANCE	1 mm - 40 mm	1 mm - 50,000 mm
TARGET MATERIAL	Metal only	Any material that reflects light
SENSING SPEED	0.02 - 10 kHz	1 - 5 kHz
ENVIRONMENT	Versions for normal or harsh and dirty environments, with protection class up to IP 68 / IP 69K	For clean environments without dust or steam, with protection class up to IP 67
PROGRAM OVERVIEW	P. 16 - 19	P. 168 - 171
TASKS	<ul style="list-style-type: none"> <li>✓ Presence detection of metal objects</li> <li>✓ Position control of all kinds of metal targets</li> <li>✓ Counting tasks</li> <li>✓ Distance control on end positions</li> <li>✓ Quality control</li> </ul>	<ul style="list-style-type: none"> <li>✓ Sensing of light reflective objects</li> <li>✓ Position control of cartons and other objects on conveyors</li> <li>✓ Detection of small objects over large distances</li> </ul>



# APPLICATIONS

## AUTOMOTIVE MANUFACTURING INDUSTRY

Today, sensors of all types are common in automotive factories around the globe. Highly automated plants with demanding conformity requirements rely heavily on sensor technology to maintain world-class quality standards, particularly where harsh processes such as welding, metal finishing and high-temperature coating are required.

Manufacturing engineers working for automotive manufacturers and for first- and second-tier suppliers expect robust, reliable sensors that deliver accurate, repeatable results with minimal downtime.

### Recommended product ranges:

- Inductive - Full Inox - Extreme
- Inductive - Classics - Basic
- Inductive - Full Inox - Weld-Immune
- Inductive - Extra Distance - Basic



## PACKAGING MACHINES

On the journey from manufacturer to consumer, packaging protects all types of product, including foods, pharmaceuticals, white goods and cosmetics. Although packaging helps bring competitive products to target markets in the best possible condition, costs are often significant, and automation helps minimize the impact.

The packaging industry is highly innovative, using sensors to identify, select and position packaging of all types. Reducing manufacturing costs and ensuring environmental sustainability are key objectives, and sensors for packaging machines are chosen to maximize efficiency while ensuring reliable, repeatable operation.

### Recommended product ranges:

- Photoelectric - Cubic Small
- Photoelectric - Cylindrical Small
- Photoelectric - Cubic Miniature





## MACHINE TOOLS

Machine tools impose harsh operating conditions on the sensors needed to control cutting, forming and joining processes that run continuously in many metalworking factories. Common hazards include cutting fluid, cooling sprays, swarf particles and electromagnetic interference, making sensor selection particularly difficult where world-class performance is essential.

Size is another key factor, as modern tool-holders allow only limited space for the sensors needed to identify and position individual tools during rapid tool-changing. The right sensors contribute to efficient production, without interruption or error.

### Recommended product ranges:

Inductive - Classics - Miniature  
Photoelectric - Cylindrical Subminiature  
Inductive - Extra Distance - Basic



## LOGISTICS

Whatever the logistics system, choosing the right sensors is crucial to achieving the six “rights” of logistics: ensuring that the right goods, in the right quantities, in the right condition, are delivered to the right place, at the right time, for the right cost.

From large-scale containerized shipping to everyday internal logistics, engineers select the right sensor technology for each container, conveyor, palletizer or robot, ensuring reliable, repeatable detection and identification, together with trouble-free operation.

### Recommended product ranges:

Inductive - Extra Distance - Basic  
Photoelectric - Cubic Small  
Inductive - Classics - Basic  
Photoelectric - Cylindrical Small



# APPLICATIONS

## TEXTILE

Machinery manufacturers supplying the textile, leather and clothing industries rely on sensors for efficiency, reliability and precision. World-class accuracy is essential for production of technical textiles and for making the carbon or chemical fibers used in modern, innovative products, often in highly automated factories.

The high-speed machinery used by textile manufacturers must operate continuously and safely, relying on top-quality sensors for all aspects of access and control. The environmental challenges include industrial cleaning routines that test every sensor to the limit of its capability.



### Recommended product ranges:

- Inductive - Classics - Basic
- Inductive - Extra Distance - Basic
- Photoelectric - Cylindrical Small



## FILLING MACHINES

Filling machines are widespread in many industries, including solids handling, chemical, food, beverage and pharmaceutical, often operating continuously around the clock. Industrial sensors detect containers, lids, labels and caps, measure fill levels and more, and play a vital role in keeping automated filling equipment running reliably, accurately and with minimal downtime.

When handling bulk solids or aggressive chemicals, or working in environments that may operate harsh clean-in-place routines, choosing robust, high-quality sensors is essential to maximize operational efficiency and minimize total cost of ownership.



### Recommended product ranges:

- Photoelectric - Cubic Small
- Capacitive - Cylindrical - Basic
- Photoelectric - Cylindrical Small





## GREEN ENERGY AND ENVIRONMENT

The Green Economy relies heavily on technology for its continued advancement, and sensors are a major component of any eco-friendly strategy. Environmental initiatives include wind-, wave- and solar-power generation, industrial and domestic recycling, energy management and development of alternative fuels.

To deliver the green agenda, all of these sectors utilize sensors extensively for reliable detection and identification of materials, accurate measurement of operational parameters and consistent control of processes.

### Recommended product ranges:

Inductive - Full Inox - Washdown

Inductive - Classics - Basic

Inductive - Extra Distance - Basic



## MOBILE EQUIPMENT

Repairing and servicing equipment on site can be difficult and costly at best, and sometimes impossible. In these circumstances, robust, highly reliable sensors are vital for continuous operation in environments that may be challenging in the extreme. Exposure to dirt and dust, impact, vibration, seawater, corrosive chemicals and extremes of temperature and pressure are all part of a regular day's work.

Manufacturers of mobile and portable equipment, including forklifts, agricultural machines, construction plant, aircraft, vehicles and ships, expect exceptional reliability and life-expectancy when selecting fit-and-forget sensors for these demanding applications.

### Recommended product ranges:

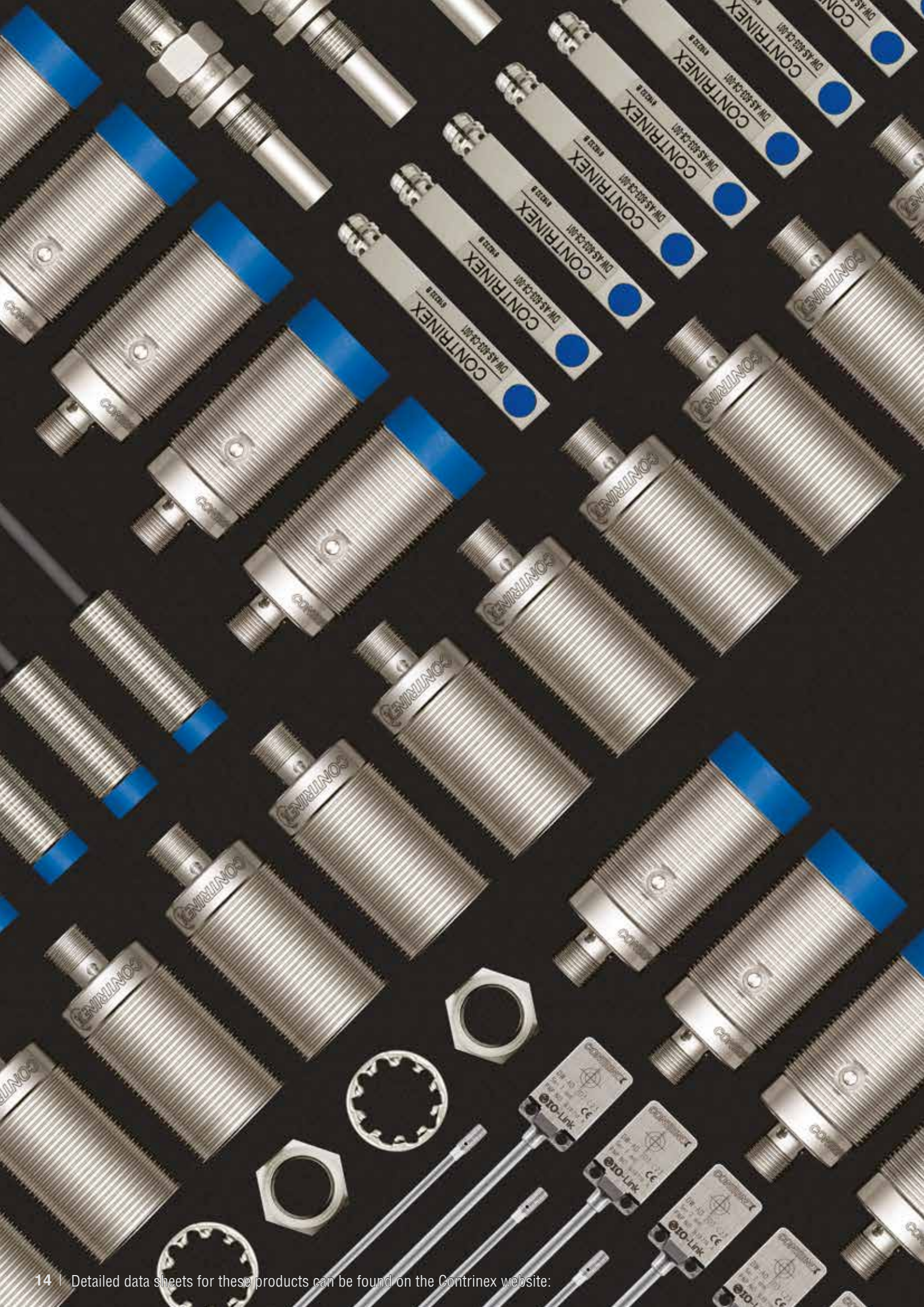
Inductive - Extra Distance - High pressure

Inductive - Full Inox - Extreme

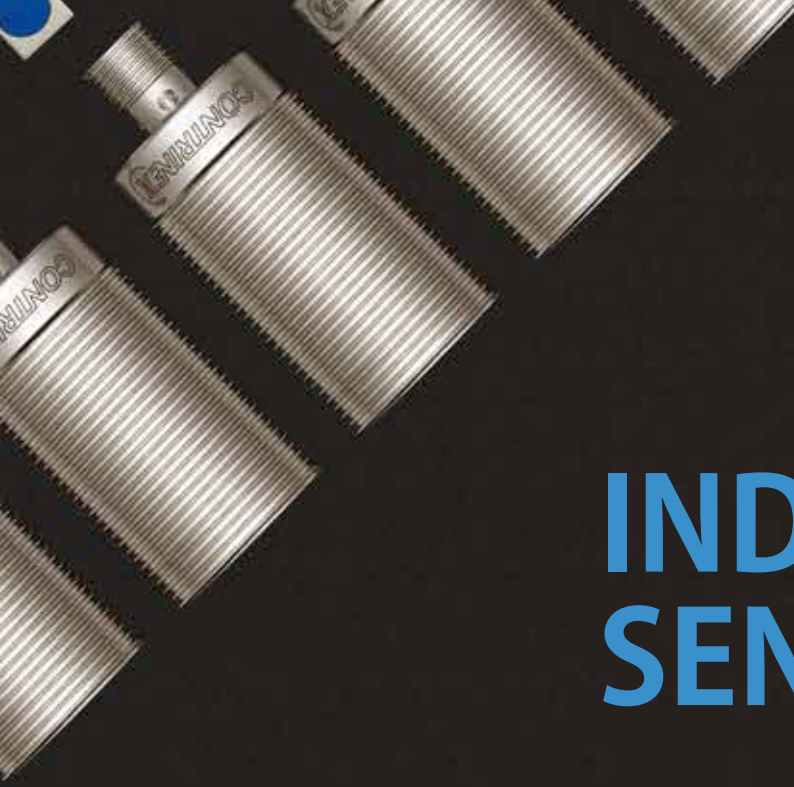
Inductive - Extra Distance - Basic











# INDUCTIVE SENSORS


## HIGHLIGHTS:

- ✓ Smallest self-contained miniature inductive sensors on the market
- ✓ Practically indestructible Full Inox sensors for extreme conditions
- ✓ Weld-Immune Full Inox sensors, M8, M12, M18
- ✓ Full Inox sensors with Factor 1 on steel and aluminum
- ✓ Sensors with 4x standard operating distance
- ✓ Outstandingly durable sensors for high cyclic pressures (peak: 1000 bar / 14510 psi)
- ✓ Highly accurate analog output sensors for distance control
- ✓ Sensors to withstand high temperatures (up to 230°C / 446°F)
- ✓ Ecolab-approved sensors

## NEW:

- ✓ Full Inox Basic with IO-Link
- ✓ Full Inox C23: flat, cubic sensor in stainless steel housing with IO-Link
- ✓ High Temperature: for ambient temperatures up to 230°C (440°F)

# PROGRAM OVERVIEW

FAMILY	HOUSING SIZE	OPERATING DISTANCE	BASIC	MINIATURE	EXTREME	EXTRA PRESSURE up to 100 bar	
 <b>CLASSICS</b> Series 600 1 x S <sub>n</sub> / 2 x S <sub>n</sub>	∅ 3	0.6 ... 1 mm		p. 71-72		p. 95	
	M4	0.6 ... 1 mm		p. 72-73			
	∅ 4	0.8 ... 1.5 mm		p. 73-75		see online	
	M5	0.8 ... 1.5 mm		p. 76-77		p. 95	
	C5	0.8 ... 1.5 mm		p. 78-79			
	∅ 6.5	1.5 ... 2 mm	p. 31-35				
	M8	1.5 ... 4 mm	p. 35-41, 43-44				
	C8	1.5 ... 2 mm	p. 45-46				
	M12	2 ... 8 mm	p. 47-51				
	M18	5 ... 8 mm	p. 54-57				
	M30	10 ... 15 mm	p. 59-61				
	M50	25 mm					
	40 x 40	15 ... 40 mm	p. 65-66				
<b>EXTRA DISTANCE</b> Series 500 3 x S <sub>n</sub> / 4 x S <sub>n</sub>	∅ 4	2.5 mm		p. 75			
	M5 / P5	1 ... 2.5 mm		p. 77			
	∅ 6.5	2.5 ... 3 mm	p. 35			p. 95	
	M8 / P8	1.5 ... 6 mm	p. 42-45			see online	
	C8	2 ... 4 mm	p. 46				
	M12 / P12	1.5 ... 10 mm	p. 50-54				
	M18	12 ... 20 mm	p. 57-59				
	M30	20 ... 40 mm	p. 61-64				
	M14 / P20	3 mm					
<b>FULL INOX</b> Series 700 full-metal housing 	∅ 4	3 mm		p. 75			
	M5	3 mm		p. 78			
	∅ 6,5				coming soon		
	M8	2 ... 6 mm	p. 41		p. 83-84		
	M12 / P12	1.5 ... 15 mm	p. 47-48		p. 84-86		
	M18	5 ... 20 mm	p. 55		p. 86-88		
	M30	3 ... 40 mm	p. 60		p. 88-89		
	C23	7 mm			p. 90		



	HIGH PRESSURE up to 1000 bar peak	EXTRA/HIGH TEMPERATURE -40 to +230°C	WASHDOWN	ANALOG OUTPUT	2-WIRE	WELD-IMMUNE	SPECIAL	
					p. 131			Inductive
					p. 131			Photoelectric
					p. 132			
		p. 107			p. 133			Ultrasonic
					p. 133			
					p. 134, 140			
		p. 107, 111			p.134-135,141-143			Capacitive
		p. 107, 111	p. 117		p.135-136,144-149	see online		
		p. 107, 111			p.136-137,149-153	see online		
		p. 111			p.137-138,154-157	see online		
		p. 112						Safety
						see online		
								RFID
	p. 99							
								Connectivity
	p. 99			p. 123-124				
				p. 123				
	p. 99-101			p. 124-125				
				p. 125-126				Accessories
				p. 126-127				
	p. 101-102							Glossary
						p. 161		
	p. 101		p. 117			p. 161		
			p. 117-118			p. 161		Index
			p. 118				p. 165	

# PROGRAM OVERVIEW

## MINIATURE + BASIC

HOUSING SIZE	OPERATING DISTANCE													PAGE
	5 mm	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	55 mm	60 mm	65 mm	
∅ 3 mm / M4	0.6 mm													71 - 72
	1 mm													72 - 73
∅ 4 mm / M5	0.8 mm													73-74, 76
	1.5 mm													74, 77
	2.5 mm													75, 77
	3 mm													75, 78
C5	0.8 mm													78
	1.5 mm													79
∅ 6.5 mm	1.5 mm													31 - 33
	2 mm													33 - 35
	3 mm													35
M8	1.5 mm													35 - 37
	2 mm													38 - 41
	2.5 mm													41
	3 mm													42
	4 mm													43 - 44
C8	1.5 mm													44 - 45
	2 mm													45
	3 mm													45 - 46
M12	2 mm													46
	3 - 4 mm													47
	6 mm													47 - 50
	8 mm													50 - 51
	10 mm													51 - 53
M18	5 mm													53 - 54
	8 mm													54 - 55
	12 mm													55 - 57
	20 mm													57 - 58
M30	10 mm													58 - 59
	15 mm													59 - 60
	22 mm													61
	40 mm													61 - 62
C44	15 mm													63 - 64
	20 mm													65
	30 mm													65
	40 mm													65

## OTHER RANGES

HOUSING SIZE	OPERATING DISTANCE													PAGE
	5 mm	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	55 mm	60 mm	65 mm	
<b>EXTREME</b>														
M8	3 mm												83	
M8 / M12	6 mm												83 - 85	
M18 / C23	5 ... 7 mm												86 - 87, 90	
M12 / M18	10 mm												85 - 87	
M12	15 mm												86	
M18 / M30	20 mm												88 - 89	
M30	40 mm												89	
<b>EXTRA PRESSURE</b>														
∅ 3 / M5	0.6 ... 0.8 mm												95	
∅ 6.5	2.5 mm												95	
<b>HIGH PRESSURE</b>														
M5 / P5	1 mm												99	
M8 / P8 / M12 / P12	1.5 ... 2.5 mm												99 - 101	
M14 / P20	3.0 mm												101 - 102	
<b>EXTRA/HIGH TEMP.</b>														
M5	0.8 mm												107	
M8	2 ... 4 mm												107, 111	
M12	2 ... 4 mm												107, 111	
M18	5 mm												107, 111	
M30	10 mm												111	
M50	25 mm												112	
<b>WASHDOWN</b>														
M12	2 ... 6 mm												117	
M18	10 mm												117 - 118	
M30	20 mm												118	
<b>ANALOG OUTPUT</b>														
C8 / M8	0 ... 4 mm												123 - 124	
M12	0 ... 6 mm												124 - 125	
M18	0 ... 10 mm												125 - 126	
M18 / M30	0 ... 20 mm												126 - 127	
M30	0 ... 40 mm												127	
<b>2-WIRE</b>														
∅ 3/∅ 4/M4/M5/C5	0.6 ... 0.8 mm												131 - 133	
∅ 6.5	1.5 mm												134, 140	
M8	1.5 ... 2.5 mm												134 - 135, 141 - 143	
M12	2 ... 4 mm												135 - 136, 144 - 149	
M18	5 ... 8 mm												136 - 137, 149 - 153	
M30	10 ... 15 mm												137 - 138, 154 - 157	
<b>WELD-IMMUNE</b>														
M8	3 mm												161	
M12	6 mm												161	
M18	10 mm												161	
<b>SPECIAL</b>														
M30	3 ... 5 mm												165	

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index



# 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 x 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, Wash-down, Weld-immune** and **2-Wire**.

#### EXTRA DISTANCE FAMILY:

##### Increased stability for exceptionally long operating distance

The **Extra Distance** family is based on the patented Condist® oscillator developed by Contrinex. Sensors benefit from **up to 4x the standard** operating distance, keeping them out of harm's way in rugged, industrial environments. Sensor lifetime is therefore increased.

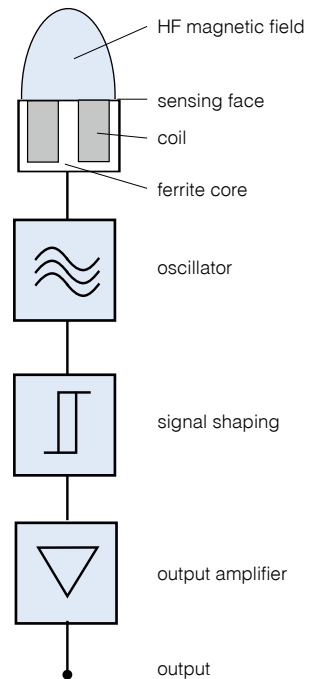


Fig. 1: Conventional inductive sensor technology, as used in the **Classics** family

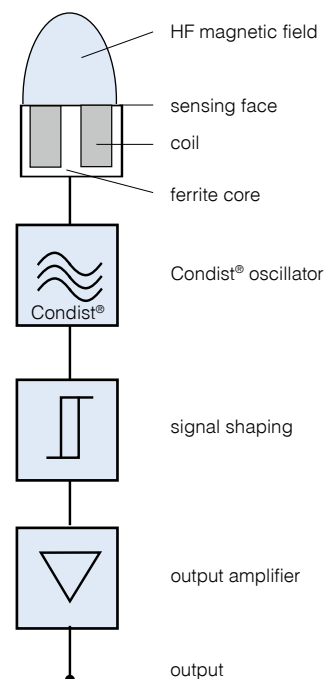


Fig. 2: Contrinex's patented Condist® inductive sensor technology, as used in the **Extra Distance** family

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 patented 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.

Apart from the Condist® oscillator, all other assemblies are equivalent to the **Classics** family. Material dependencies and other properties are also the same as for **Classics** family sensors.

Special attention has been paid to **meets 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.

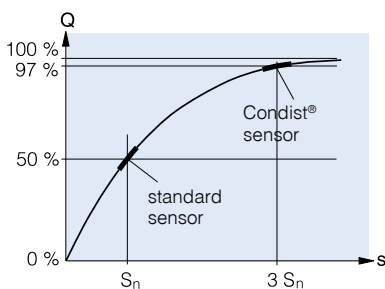


Fig. 3: **Extra Distance** family sensors have a longer operating distance, due to Condist® oscillator technology

## FULL INOX FAMILY:

### All-round stainless steel protection - practically indestructible

The **Full Inox** family is based on Contrinex's patented Condete® 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 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.

Condete® 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 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** technology family includes devices from the **Basic, Miniature, Extreme, High pressure, Washdown, Weld-immune** and **Special** ranges. This technology is used in series 700 devices.

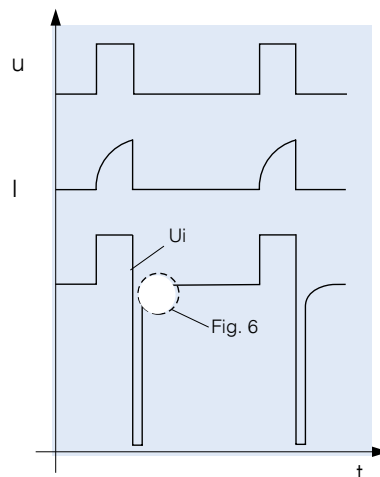


Fig. 5: Evolution of main signals

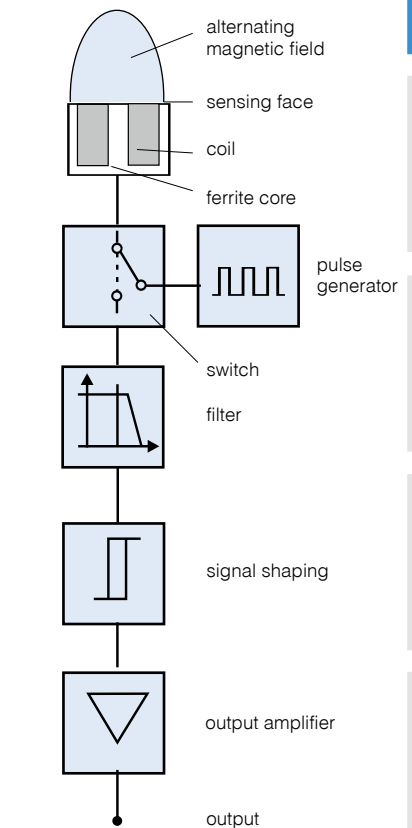


Fig. 4: **Full Inox** family sensors use Condete® pulse generator technology instead of an oscillator

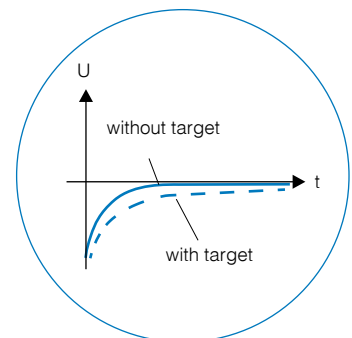


Fig. 6 (detail fig. 5): Effect of a target on the measured signal

# INTRODUCTION

## PRODUCT RANGES

### BASIC

#### First choice in all environments

Contrinex **Basic** range inductive sensors have a worldwide and well-deserved reputation for uncompromising accuracy and exceptional reliability. With best-in-class sensing distances between **1.5 mm** and **40 mm**, the **Basic** range offers fit-and-forget operation, delivering world-class performance and a highly attractive total cost of ownership.

Available in sizes from M8 to M30 and C44, with optional Ø 6.5 plain and 8 mm square-section models, **Basic** range inductive sensors are ideal for general position-sensing and presence-sensing applications in almost any industry. Embeddable or non-embeddable variants are available, with either hard-wired, hermetically sealed connecting cables or integral metal connectors. **Basic** range devices, whether from the **Classics** (Fig. 1), **Extra Distance** (Fig. 2) or **Full Inox** (Fig. 4) technology families, all utilize Contrinex application-specific integrated circuits (ASICs) that ensure highly repeatable results at operating temperatures between -25°C and +70°C.



### MINIATURE

#### Full functionality, smallest size

Size is often a critical constraint when selecting sensors for position- or presence-sensing. The Contrinex **Miniature** range, which includes the smallest self-contained inductive sensors on the market, meets this constraint without compromising on functionality.

Sensors from this range use either **Classics** (Fig. 1), **Extra Distance** (Fig. 2) or **Full Inox** (Fig. 4) technology. **Classics** and **Full Inox Miniature** sensors are IO-Link enabled in PNP NO versions. Available in plain and threaded sizes from Ø 3 to M5 and as a 5 mm square-section type, **Miniature** range inductive sensors are ideal for applications where space is limited, including tool-selection, robotic position-sensing and control of micro-mechanisms.

Extremely robust, thanks to chip-scale package (CSP) technology, a glass-fiber reinforced substrate and vacuum encapsulation, the Contrinex **Miniature** range delivers long-term reliability and maximum uptime, even in the most demanding environments. The low mass and **high switching frequency** of these sensors makes them particularly suitable for high-dynamic applications where inertia is a major consideration.

These embeddable devices are available in 3-wire DC, NPN and PNP versions with a choice of N.O. or N.C. configurations. An LED output state indicator is standard. All the important protection functions are included, such as short-circuit and overload protection, full polarity reversal protection, induction protection, EMC protection, power-on reset, etc.

With a sensing range up to **3 mm**, Contrinex miniature inductive sensors combine world-class quality with a highly attractive total cost of ownership.



### EXTREME

#### Extreme durability in harsh environments

Only the toughest sensors survive the most extreme environments, and **Extreme** range inductive sensors from the **Full Inox** family are ideally equipped for the job. Thanks to one-piece stainless-steel (V2A/ AISI 303) construction and a hermetically sealed cable entry, **Extreme** sensors are corrosion-resistant, impervious to oil, and pressure-resistant to **80 bar**. Rugged, reliable and highly accurate, the **Extreme** range is at home in the most challenging circumstances.



Developed to withstand the harshest industrial operating conditions, **Extreme** sensors are rated to **IP 68** and **IP 69K**, delivering fit-and-forget performance with minimal downtime. With operating distances up to **40 mm**, the **Extreme** range senses both ferrous and non-ferrous materials with **Factor 1** performance, and is available in sizes from M8 to M30 and C23.

## EXTRA PRESSURE

### Pressure resistant up to 100 bar

Dependable, accurate presence- and position-sensing at pressures up to **100 bar** requires world-class performance and build quality. The **Extra pressure** range of pressure-resistant inductive sensors delivers exactly that, operating continuously in permanently pressurized conditions. This makes the range especially suitable for offshore installations, the chemical industry, motor lubrication systems and atomic fuel element monitoring. A stainless-steel housing with bonded ceramic or brazed sapphire sensing face and protection class **IP 68** guarantees robustness and exceptional reliability in miniature packages sized from **Ø 3** to **M8**.



The **Extra pressure** range is also ideal for high-vacuum environments and satellite applications, offering fit-and-forget capability and a sealed cable-entry that ensures no loss of service or interruptions to production.

Sensors from this range use either **Classics** (Fig. 1), **Extra Distance** (Fig. 2) or **Full Inox** (Fig. 4) technology and have equivalent electrical properties. For optimum impermeability, LED and connector versions are not available in this range.

Sensors from the **Extra pressure** range detect parts at sensing distances up to **2.5 mm**, and offer a highly attractive total cost of ownership.

## HIGH PRESSURE

### Resistant to pressure and dynamic stress up to 500 bar (peak 1000 bar)

For reliable, accurate sensing in the most demanding pneumatic and hydraulic applications, Contrinex offers a unique range of **High pressure** sensors with permanent operating pressures of **100 ... 500 bar** and peak pressures up to **1000 bar**.

Suitable for operating temperatures up to 100°C and resistant to more than 1 million pressure cycles, their IP 68 and IP 69K protection and oil impermeability make them the robust, reliable choice for the hydraulic industry. Fit-and-forget operation virtually eliminates sensor replacement costs. Exceptional performance and world-class quality are assured in sizes from M5 to M18.

Contrinex **High pressure** sensors are available in either **Extra Distance** (Fig. 2) or **Full Inox** (Fig 4) versions. Both of these patented technologies ensure durability without compromising on usable operating distance. Sensor construction is simple and robust, with the whole electronic unit, ferrite core and coil included, safely on the **no-pressure side**. Sealed connection is by means of either flexible PU cable or an integral connector.

Fig. 7 shows an **Extra Distance** version. The stainless steel housing is heat shrunk onto the ceramic disk, making the sensor mechanically resistant, **exceptionally impervious**, and outstanding for applications with **high dynamic pressure stress**, such as piston-control applications. With operating distances of up to 3 mm, they are gas-tight and meet protection class **IP 68**.

Versions from the **Full Inox** family have a practically indestructible pressure- and corrosion-resistant one-piece stainless steel housing (V4A / AISI 316L / DIN 1.4404). They provide excellent detection of all metals with good conductivity, both ferromagnetic and non-ferromagnetic. These corrosion resistant sensors are suitable for the harshest conditions and meet protection classes **IP 68 & IP 69K**.

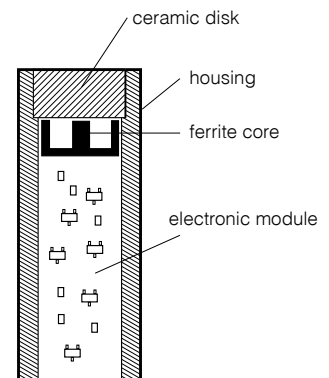


Fig. 7

Conversion of temperature	
Celsius	Fahrenheit
-40	-40
-25	-13
0	+32
+70	+158
+100	+212
+120	+248
+180	+356
+230	+446

Conversion of pressure	
Bar	PSI
1	14.5
80	1160
100	1451
500	7255
1000	14510

# INTRODUCTION

## EXTRA TEMPERATURE

### Temperature resistant up to 120°C

Inductive sensors from the **Extra temperature** range offer the ideal solution for position- and presence-sensing applications at temperatures from as low as minus 40°C up to 120°C. Industrial processes often generate heat, resulting in temperatures that would damage a standard sensor, but the stainless-steel construction and robust electronics of Contrinex **Extra temperature** sensors ensure reliable, accurate operation and minimal downtime, even in the most demanding environments.

Sensors from this range use either conventional **Classics** (Fig. 1) or all-metal **Full Inox** (Fig. 4) technology. Individually compensated for repeatable, highly accurate operation across the full operating temperature range, **Extra temperature** inductive sensors accommodate sensing distances up to 25 mm, minimizing the risk of collision damage.

Available in sizes from M5 to M18, the **Extra temperature** range delivers best-in-class performance at elevated temperatures in the harsh environments of the automotive, molding and metal-processing industries.



## HIGH TEMPERATURE

### Temperature resistant up to 180°C (230°C with external amplifier)

Contrinex **High temperature** inductive sensors are designed for continuous operation at temperatures from 0°C up to 180°C (up to 230°C with remote electronics). The range is ideal for the harshest environments, including automotive paint shops, metal-treatment plants and glass manufacturing.

**High temperature** sensors use conventional **Classics** (Fig. 1) technology. Embeddable, non-embeddable and quasi-embeddable versions are available. For temperatures up to 180°C, sensors feature built-in amplifiers and connection by means of a 2 m silicone or Teflon cable is standard. For 230°C types, the amplifiers are built into an M12 stainless-steel housing, which is connected by means of a standard 3 m Teflon cable, and thus removed from the hot area. Stainless steel construction and sensing distances up to 25 mm minimize the risk of mechanical damage during operation, ensuring maximum plant availability and a highly attractive total cost of ownership. Contrinex high-temperature sensors are available in sizes from M8 to M50.



## WASHDOWN

### Ecolab approved for strictest production hygiene

**Washdown** inductive sensors are certified to operate continuously and reliably in the harsh conditions of the food, beverage and pharmaceutical industries, ensuring uninterrupted production. With **Ecolab** approval and rated to **IP 68** and **IP 69K**, they are pressure resistant up to **80 bar**, **food safe** and **corrosion resistant**.



**Washdown** sensors are available in conventional **Classics** (Fig. 1) technology, size M12, or **Full Inox** (Fig. 4) technology, sizes M12, M18 and M30. **Full Inox** types have a totally impervious one-piece housing in stainless-steel (V4A / AISI 316L), including the sensing face. They are therefore highly resistant to the corrosive chemicals used for clean-in-place or wash-down processes. With Factor 1 on steel and aluminum and extended sensing ranges up to 40 mm, **Full Inox** technology minimizes the possibility of impact damage - a common hazard in confined operating spaces.

**Washdown** sensors meet the increasingly demanding sensing needs of the food, beverage and pharmaceutical industries, delivering best-in-class performance with an attractive total cost of ownership.



## ANALOG OUTPUT

### Continuous analog output for precision control

Engineers needing a reliable, repeatable, highly accurate means of measuring the position of a target object should look no further than Contrinex **Analog output** inductive sensors. This range of sensors has been developed on the platform of **Extra Distance** (Fig. 2) technology for excellent temperature stability, repeat accuracy, and the best long-range sensing capability on the market. With a measurement range of **zero to 40 mm** and detection accuracy on the micron scale, the **Analog output** sensor range is ideally suited for measuring linear, angular and rotational position (Fig. 8). They offer world-class performance and an attractive total cost of ownership in applications from vibration monitoring and end-position approach regulation, to position monitoring, metal sorting and sheet-metal forming.

**Analog output** inductive sensors are available in sizes from M8 to M30, with the option of an 8 mm square-section model. Voltage outputs are included for all sizes, while sizes M12 and above feature both voltage and current outputs.

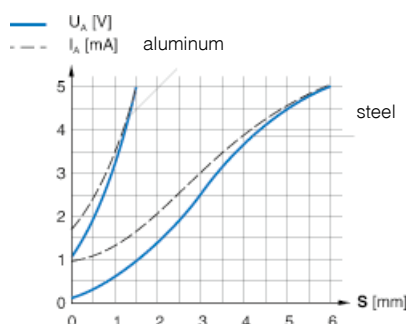


Fig. 8

## WELD-IMMUNE

### Immune to magnetic fields and resistant to weld spatter

Contrinex **Weld-immune** inductive sensors are ideal for the hostile working environments found in automotive factories and other industrial welding plants. The range includes sensors from two technology platforms: **Classics** (Fig. 1) and **Full Inox** (Fig. 4).

**Classics** devices, with protection class IP 67, are available either in PTFE-coated cylindrical brass housings or a PBTP 40 x 40 mm cubic form. They resist solder and the strong magnetic fields present during industrial welding processes. They have identical operating distances on steel and non-ferrous metals.

**Weld-immune** sensors built on the **Full Inox** platform have a long operating distance and Factor 1 on steel and aluminum. One-piece, stainless-steel (V2A / AISI 303) construction makes these sensors the most durable on the market, ensuring minimal down-time. These practically indestructible sensors withstand the welding environment for years, resisting electromagnetic fields, welding spatter, cleaning and impacts.

All **Weld-immune** sensors are embeddable and have an integral S12 connector. Best-in-class sensing ranges of up to **15 mm** eliminate the risk of collision - a frequent hazard when operating in close proximity to moving machine parts.

Developed for extreme accuracy throughout the welding cycle, **Weld-immune** sensors continuously detect part presence and machine position to ensure optimal equipment utilization and prevent errors in production. These sensors provide excellent repeatability at temperatures between  $-25^{\circ}\text{C}$  and  $+70^{\circ}\text{C}$ .



## 2-WIRE

### Easy installation and high switching frequency

The **2-Wire** range of DC, AC/DC and NAMUR sensors is constructed on the Classics (Fig. 1) technology platform and includes sizes from  $\text{Ø}3$  to M30, plus a 5 x 5 mm square-section type. Devices are available for embeddable or non-embeddable mounting and connection is by means of cable or connector. With a sensing range up to 15 mm, Contrinex **2-Wire** sensors ensure optimal equipment utilization.

## SPECIAL RANGE

### Designed to meet special technical requirements

For **double-sheet** detection, sensors from the **Full Inox** (Fig. 4) family are used. Its patented inductive technology enables discrimination between one and two conductive metal sheets of a defined thickness, achieving sensitivity of 0.8 - 1.2 mm per sheet. This discrimination aids in the prevention of double feeds into blanking and forming processes which ultimately saves damage to tooling. The one-piece, stainless-steel construction of these sensors makes them the most durable on the market. They withstand the impacts that are a common hazard in double-sheet detection applications close to moving sheet metal, ensuring minimal down-time.

## IO-LINK FUNCTIONALITY\* WITH INDUCTIVE SENSORS

### Data monitoring:

- 1 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:

- 2 The operating state of the sensor is checked. In case of wire break, under-voltage, LC oscillator break or installation of the wrong sensor, information is provided directly through IO-Link to enable fast repair, maintenance and replacement.

### NO/NC selection:

- 3 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.

### Switching timer:

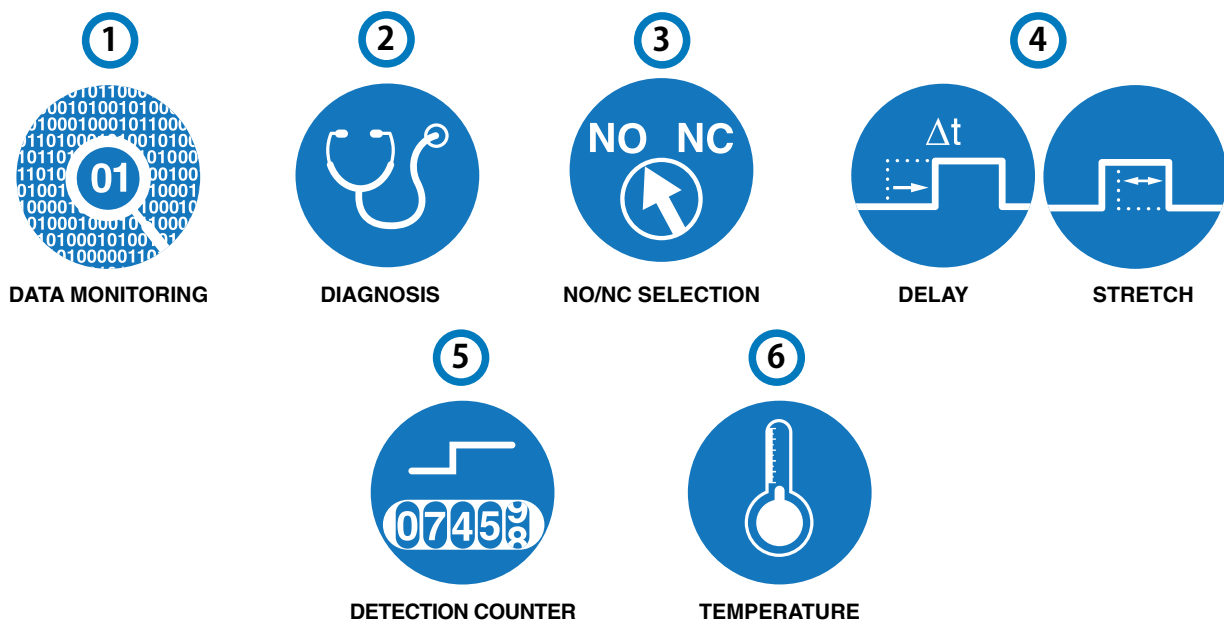
- 4 The timing of output switching can be configured. Depending on the needs of an application, output switching can be delayed or the duration stretched through programming.

### Detection counter:

- 5 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:

- 6 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.



\* Functionalities may vary depending on series and sensor type



1 + 1 = 2





FIRST CHOICE IN ALL ENVIRONMENTS

# BASIC

## INDUCTIVE SENSORS

### KEY ADVANTAGES

#### Classics, Extra Distance and Full Inox

- ✓ High quality ASIC sensors
- ✓ IO-Link (Classics and Full Inox)
- ✓ Exceptional price-performance ratio
- ✓ Excellent accuracy
- ✓ Outstanding temperature compensation
- ✓ Vibration and shock resistant
- ✓ Long operating distance

#### Full Inox

- ✓ Extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 80 bar

RANGE OVERVIEW	Housing size	Classics	Extra Distance	Full Inox
BASIC	∅ 6.5 mm	p. 31-35	p. 35	
	M8	p. 35-41, 43-44	p. 42-45	p. 41
	C8	p. 45-46	p. 46	
	M12	p. 47-51	p. 50-54	p. 47-48
	M18	p. 54-57	p. 57-59	p. 55
	M30	p. 59-61	p. 61-64	p. 60
	C44	p. 65-66		

FAMILY

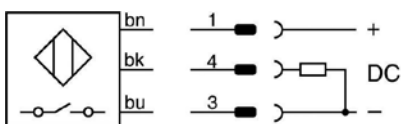
HOUSING SIZE MM

OPERATING DISTANCE MM

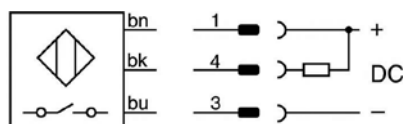
# INDUCTIVE

## WIRING DIAGRAMS

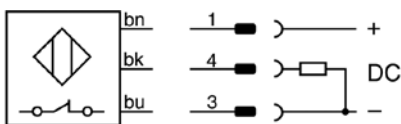
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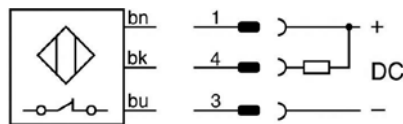
NPN NO



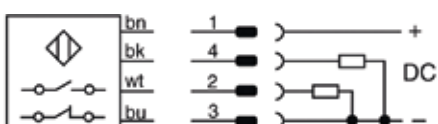
PNP NC



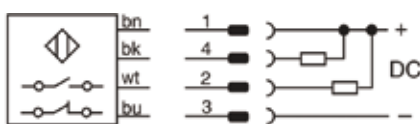
NPN NC



PNP Changeover



NPN Changeover



## DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range





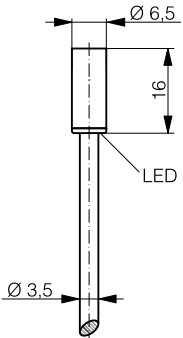
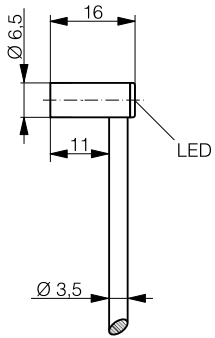
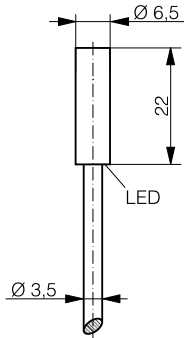
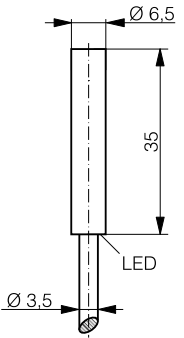
Output current

PNP NO

NPN NO

Other types available

# BASIC

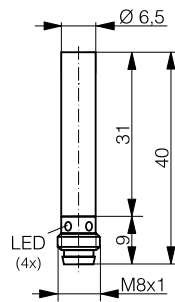
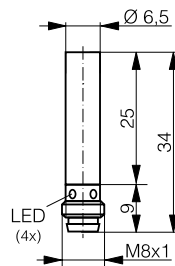
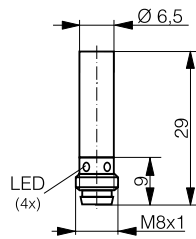
CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5	
1.5	1.5	1.5	1.5	Photoelectric
				
				Capacitive
				RFID
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	
PVC cable	PVC cable	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	
5000 Hz	5000 Hz	5000 Hz	5000 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	Index
<b>DW-AD-603-065-120</b>	<b>DW-AD-603-065-400</b>	<b>DW-AD-603-065-121</b>	<b>DW-AD-603-065</b>	
<b>DW-AD-601-065-120</b>	<b>DW-AD-601-065-400</b>	<b>DW-AD-601-065-121</b>	<b>DW-AD-601-065</b>	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC, length 30 mm	



# BASIC





## INDUCTIVE

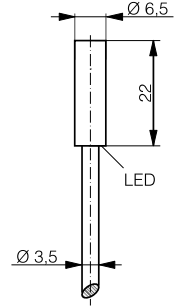
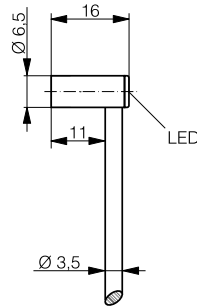
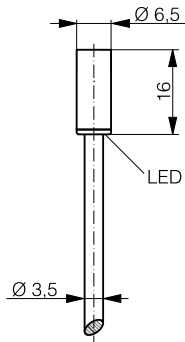
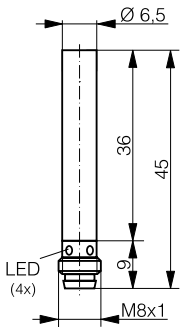
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 6.5	Ø 6.5	Ø 6.5
OPERATING DISTANCE MM	1.5	1.5	1.5



DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	Connector S8	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-603-065-129</b>	<b>DW-AS-603-065-123</b>	<b>DW-AS-603-065-124</b>
NPN NO	<b>DW-AS-601-065-129</b>	<b>DW-AS-601-065-123</b>	<b>DW-AS-601-065-124</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

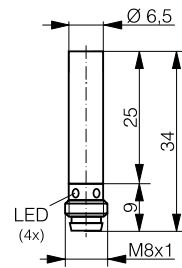
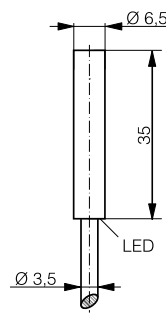
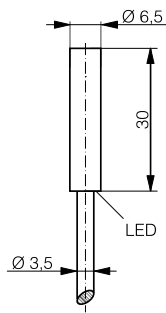
CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5	
1.5	2	2	2	Photoelectric
				
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Glossary
Connector S8	PVC cable	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	Index
Embeddable	Embeddable	Embeddable	Embeddable	
5000 Hz	5000 Hz	5000 Hz	5000 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AS-603-065-001</b>	<b>DW-AD-623-065-120</b>	<b>DW-AD-623-065-400</b>	<b>DW-AD-623-065-121</b>	
<b>DW-AS-601-065-001</b>	<b>DW-AD-621-065-120</b>	<b>DW-AD-621-065-400</b>	<b>DW-AD-621-065-121</b>	
PNP NC, NPN NC, S12	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	



# BASIC

## INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 6.5	Ø 6.5	Ø 6.5
OPERATING DISTANCE MM	2	2	2

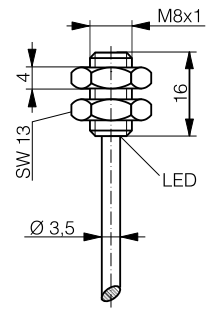
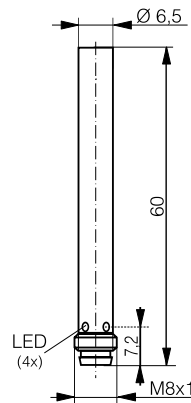
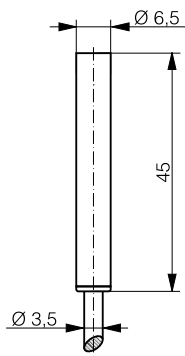
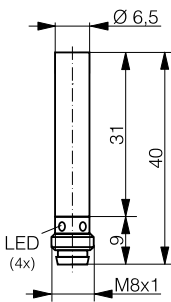


DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-623-065-122</b>	<b>DW-AD-623-065</b>	<b>DW-AS-623-065-123</b>
NPN NO	<b>DW-AD-621-065-122</b>	<b>DW-AD-621-065</b>	<b>DW-AS-621-065-123</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC length 29 mm



# BASIC

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	CLASSICS	Inductive
Ø 6.5	Ø 6.5	Ø 6.5	M8	
2	3	3	1.5	



Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

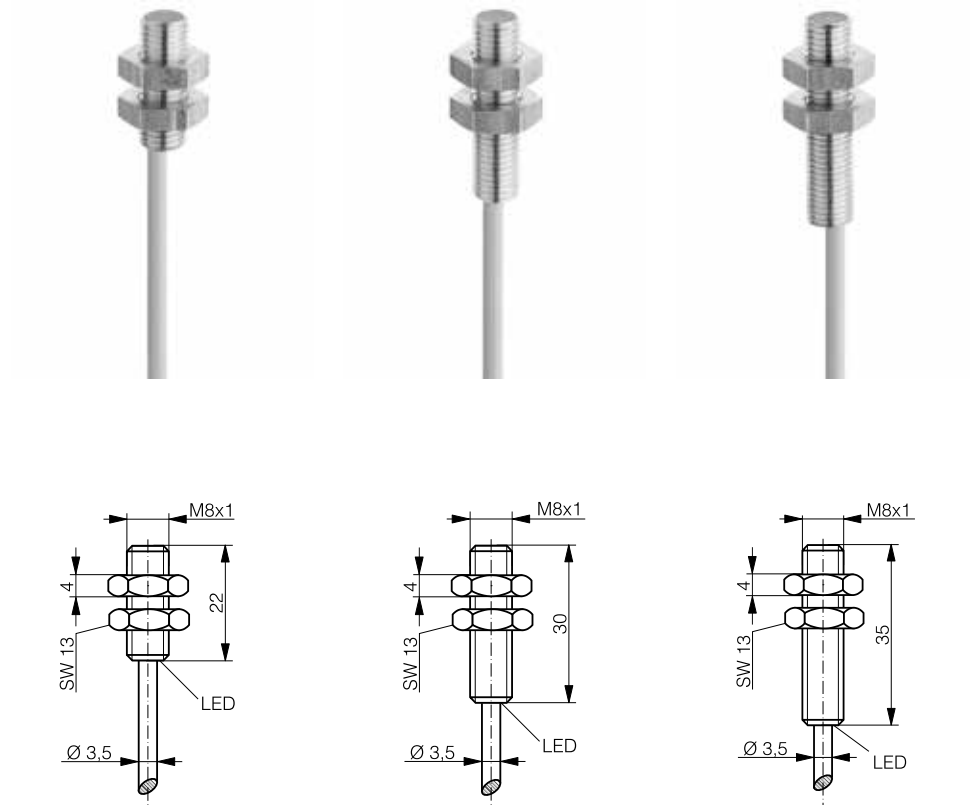
Index

Stainless steel V2A	Chrome-plated brass	Chrome-plated brass	Stainless steel V2A	
Connector S8	PVC cable	Connector S8	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Quasi-embeddable	Quasi-embeddable	Embeddable	
5000 Hz	1000 Hz	1000 Hz	5000 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AS-623-065-124</b>	<b>DW-AD-503-065</b>	<b>DW-AS-503-065-001</b>	<b>DW-AD-603-M8-120</b>	
<b>DW-AS-621-065-124</b>	<b>DW-AD-501-065</b>	<b>DW-AS-501-065-001</b>	<b>DW-AD-601-M8-120</b>	
PNP NC, NPN NC length 45 mm, S12	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

# BASIC

## INDUCTIVE

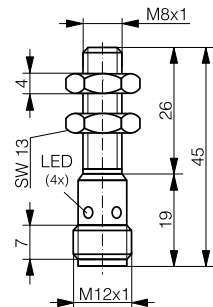
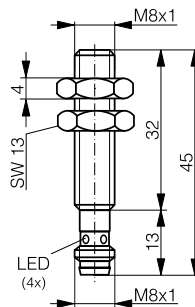
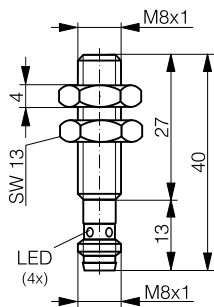
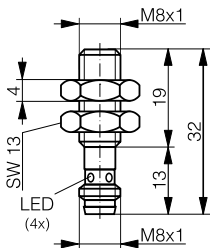
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M8	M8	M8
OPERATING DISTANCE MM	1.5	1.5	1.5



DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-603-M8-121</b>	<b>DW-AD-603-M8-122</b>	<b>DW-AD-603-M8</b>
NPN NO	<b>DW-AD-601-M8-121</b>	<b>DW-AD-601-M8-122</b>	<b>DW-AD-601-M8</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	
1.5	1.5	1.5	1.5	



Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S8	Connector S8	Connector S8	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 Hz	5000 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-603-M8-123</b>	<b>DW-AS-603-M8-124</b>	<b>DW-AS-603-M8-001</b>	<b>DW-AS-603-M8</b>
<b>DW-AS-601-M8-123</b>	<b>DW-AS-601-M8-124</b>	<b>DW-AS-601-M8-001</b>	<b>DW-AS-601-M8</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC, length 39 mm



# BASIC

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE

M8

M8

M8

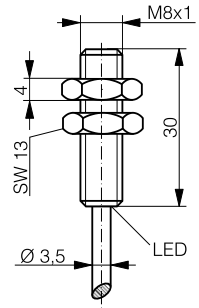
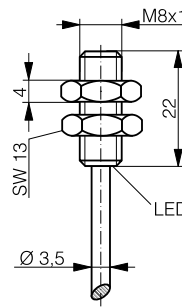
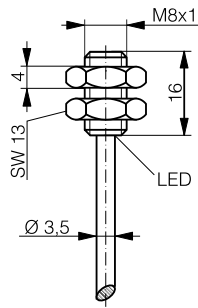
OPERATING DISTANCE MM

2

2

2

INDUCTIVE

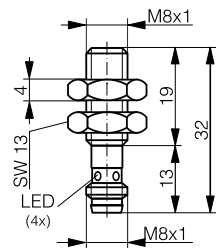
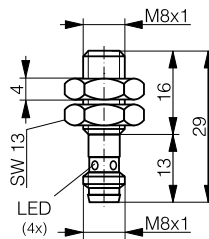
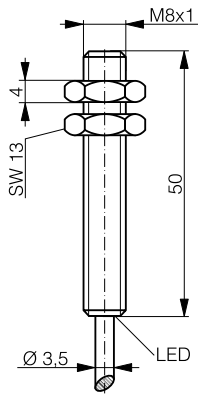
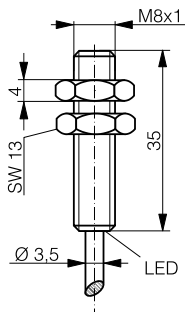


DATA

DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-623-M8-120</b>	<b>DW-AD-623-M8-121</b>	<b>DW-AD-623-M8-122</b>
NPN NO	<b>DW-AD-621-M8-120</b>	<b>DW-AD-621-M8-121</b>	<b>DW-AD-621-M8-122</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	
2	2	2	2	



Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

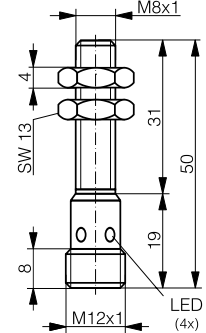
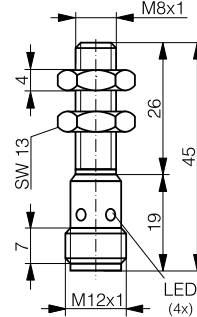
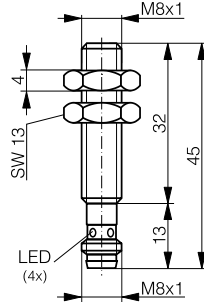
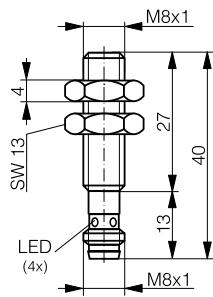
Index

Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PVC cable	PVC cable	Connector S8	Connector S8
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 Hz	5000 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-623-M8</b>	<b>DW-AD-623-M8-177</b>	<b>DW-AS-623-M8-129</b>	<b>DW-AS-623-M8-123</b>
<b>DW-AD-621-M8</b>	<b>DW-AD-621-M8-177</b>	<b>DW-AS-621-M8-129</b>	<b>DW-AS-621-M8-123</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

## INDUCTIVE

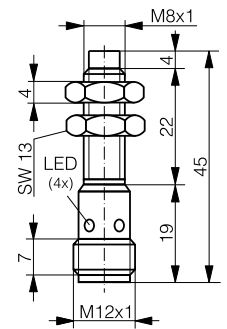
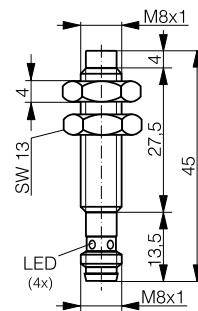
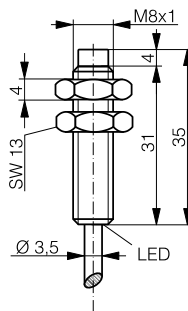
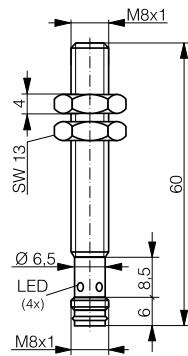
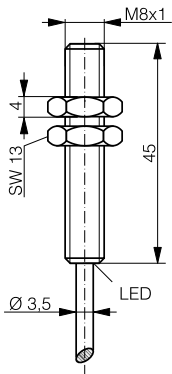
FAMILY	CLASSICS	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M8	M8	M8	M8
OPERATING DISTANCE MM	2	2	2	2



DATA				
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	Connector S8	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-623-M8-124</b>	<b>DW-AS-623-M8-001</b>	<b>DW-AS-623-M8</b>	<b>DW-AS-623-M8-193</b>
NPN NO	<b>DW-AS-621-M8-124</b>	<b>DW-AS-621-M8-001</b>	<b>DW-AS-621-M8</b>	<b>DW-AS-621-M8-193</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

FULL INOX	FULL INOX	CLASSICS	CLASSICS	CLASSICS
M8	M8	M8	M8	M8
2	2	2.5	2.5	2.5



Inductive  
Photoelectric  
Ultrasonic  
Capacitive  
Safety  
RFID  
Connectivity  
Accessories  
Glossary  
Index

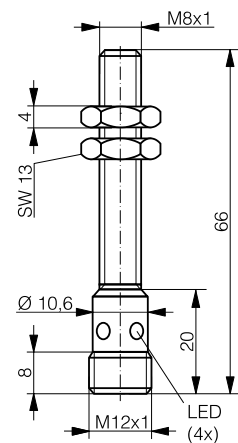
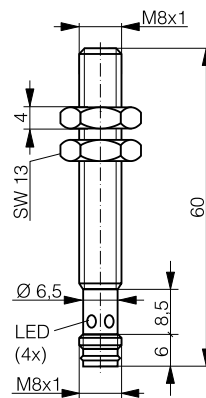
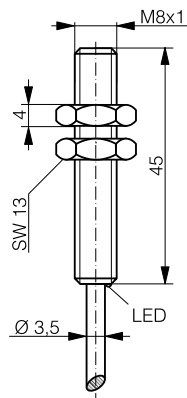
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S8	PVC cable	Connector S8	Connector S12
IP 68	IP 68 / IP 69K	IP 67	IP 67	IP 67
Embeddable	Embeddable	Non-embeddable	Non-embeddable	Non-embeddable
100 Hz	100 Hz	4500 Hz	4500 Hz	4500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-703-M8-BAS</b>	<b>DW-AS-703-M8-001-BAS</b>	<b>DW-AD-613-M8</b>	<b>DW-AS-613-M8-001</b>	<b>DW-AS-613-M8</b>
<b>DW-AD-701-M8-BAS</b>	<b>DW-AS-701-M8-001-BAS</b>	<b>DW-AD-611-M8</b>	<b>DW-AS-611-M8-001</b>	<b>DW-AS-611-M8</b>
		PNP NC, NPN NC, lengths 22 & 30 mm	PNP NC, NPN NC, lengths 32 & 40 mm	PNP NC, NPN NC



# BASIC

## INDUCTIVE

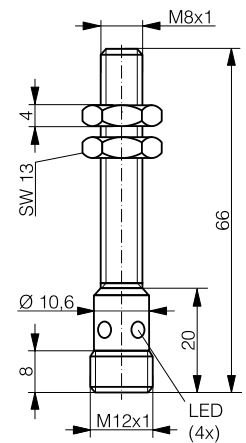
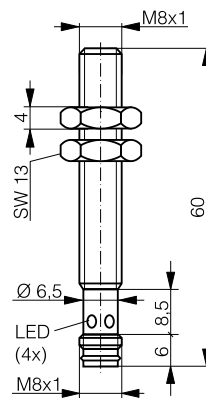
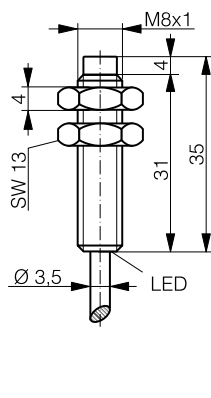
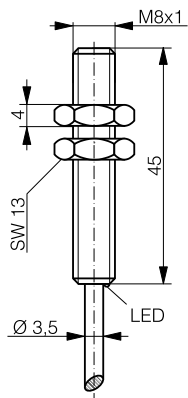
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M8	M8	M8
OPERATING DISTANCE MM	3	3	3



DATA			
Housing material	Chrome-plated nickel silver	Chrome-plated nickel silver	Chrome-plated nickel silver
Connection	PVC cable	Connector S8	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1000 Hz	1000 Hz	1000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-503-M8</b>	<b>DW-AS-503-M8-001</b>	<b>DW-AS-503-M8</b>
NPN NO	<b>DW-AD-501-M8</b>	<b>DW-AS-501-M8-001</b>	<b>DW-AS-501-M8</b>
Other types available	PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

EXTRA DISTANCE	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M8	M8	M8	M8	
4	4	4	4	

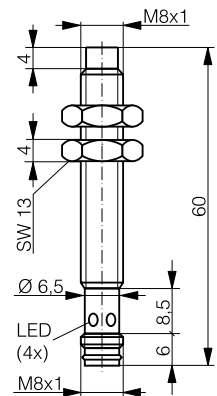
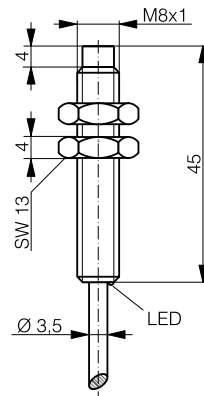
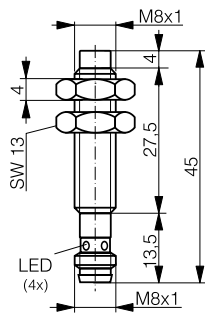


				Accessories
Chrome-plated nickel silver	Stainless steel V2A	Chrome-plated nickel silver	Chrome-plated nickel silver	
PVC cable	PVC cable	Connector S8	Connector S12	
IP 67	IP 67	IP 67	IP 67	Glossary
Embeddable	Non-embeddable	Embeddable	Embeddable	
500 Hz	3500 Hz	500 Hz	500 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	Index
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AD-523-M8</b>	<b>DW-AD-633-M8</b>	<b>DW-AS-523-M8-001</b>	<b>DW-AS-523-M8</b>	
<b>DW-AD-521-M8</b>	<b>DW-AD-631-M8</b>	<b>DW-AS-521-M8-001</b>	<b>DW-AS-521-M8</b>	
PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

# BASIC

## INDUCTIVE

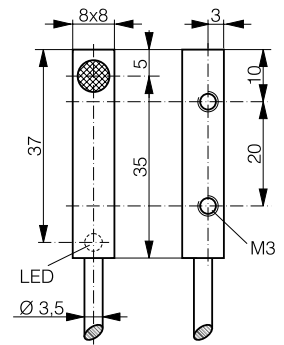
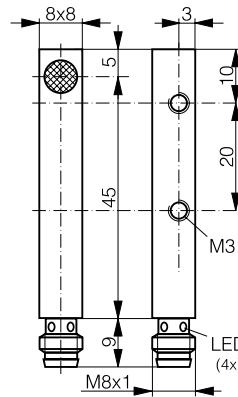
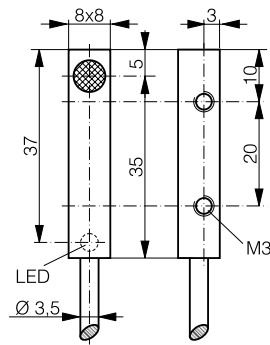
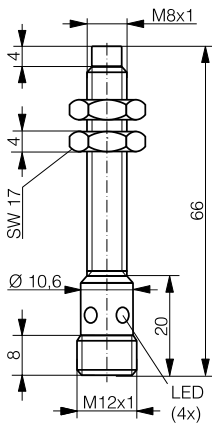
FAMILY	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M8	M8	M8
OPERATING DISTANCE MM	4	6	6



DATA			
Housing material	Stainless steel V2A	Chrome-plated brass	Chrome-plated brass
Connection	Connector S8	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	3500 Hz	500 Hz	500 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-633-M8-001</b>	<b>DW-AD-513-M8</b>	<b>DW-AS-513-M8-001</b>
NPN NO	<b>DW-AS-631-M8-001</b>	<b>DW-AD-511-M8</b>	<b>DW-AS-511-M8-001</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC

# BASIC

EXTRA DISTANCE	CLASSICS	CLASSICS	CLASSICS
M8	□ 8 x 8	□ 8 x 8	□ 8 x 8
6	1.5	1.5	2



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

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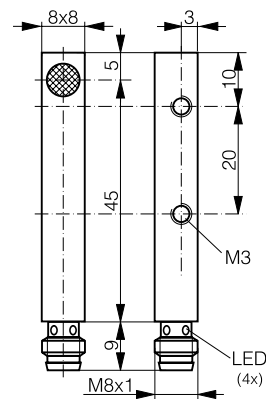
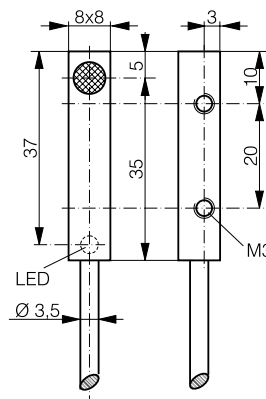
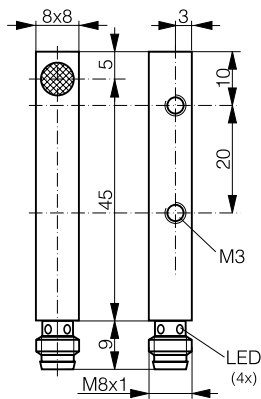
EXTRA DISTANCE	CLASSICS	CLASSICS	CLASSICS
Chrome-plated brass	Zamak	Zamak	Zamak
Connector S12	PVC cable	Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Embeddable	Embeddable	Embeddable
500 Hz	3500 Hz	3500 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-513-M8</b>	<b>DW-AD-603-C8</b>	<b>DW-AS-603-C8-001</b>	<b>DW-AD-623-C8</b>
<b>DW-AS-511-M8</b>	<b>DW-AD-601-C8</b>	<b>DW-AS-601-C8-001</b>	<b>DW-AD-621-C8</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC



# BASIC

## INDUCTIVE

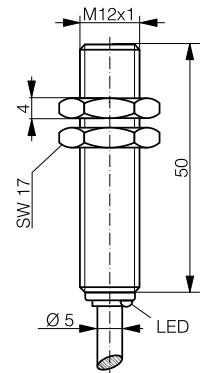
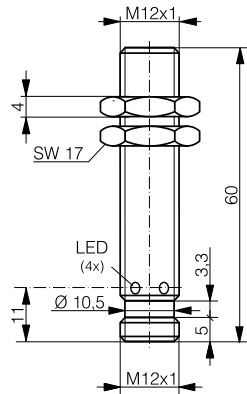
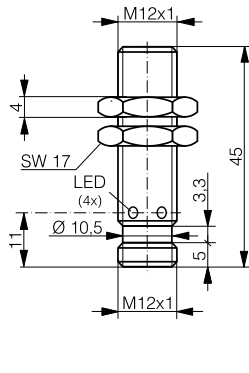
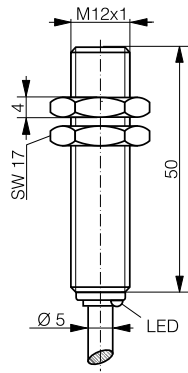
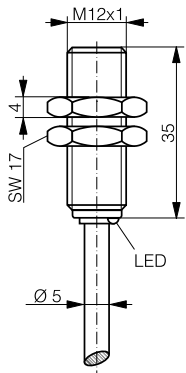
FAMILY	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	□ 8 x 8	□ 8 x 8	□ 8 x 8
OPERATING DISTANCE MM	2	3	3



DATA			
Housing material	Zamak	Zamak	Zamak
Connection	Connector S8	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	5000 Hz	1000 Hz	1000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-623-C8-001</b>	<b>DW-AD-503-C8</b>	<b>DW-AS-503-C8</b>
NPN NO	<b>DW-AS-621-C8-001</b>	<b>DW-AD-501-C8</b>	<b>DW-AS-501-C8</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	FULL INOX
M12	M12	M12	M12	M12
2	2	2	2	3



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

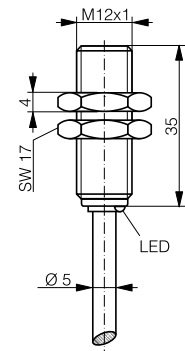
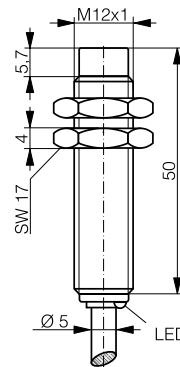
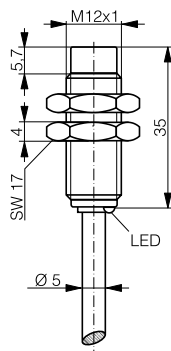
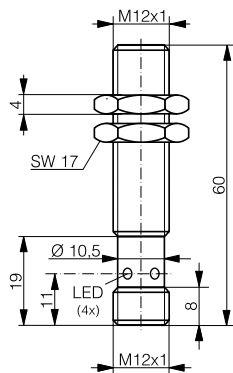
Index

Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Stainless steel V2A
PVC cable	PVC cable	Connector S12	Connector S12	PUR cable
IP 67	IP 67	IP 67	IP 67	IP 68
Embeddable	Embeddable	Embeddable	Embeddable	Embeddable
3000 Hz	3000 Hz	3000 Hz	3000 Hz	100 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-603-M12-120</b>	<b>DW-AD-603-M12</b>	<b>DW-AS-603-M12-120</b>	<b>DW-AS-603-M12</b>	<b>DW-AD-703-M12-BAS</b>
<b>DW-AD-601-M12-120</b>	<b>DW-AD-601-M12</b>	<b>DW-AS-601-M12-120</b>	<b>DW-AS-601-M12</b>	<b>DW-AD-701-M12-BAS</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

# BASIC

## INDUCTIVE

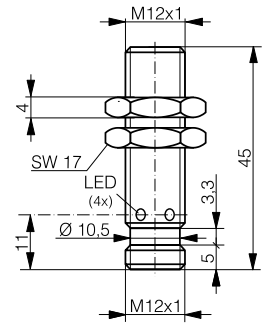
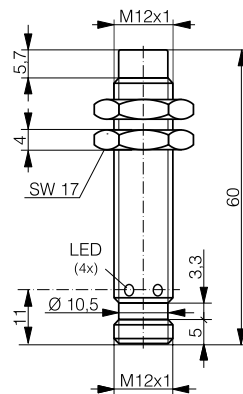
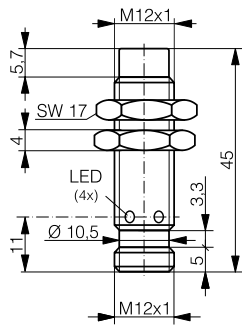
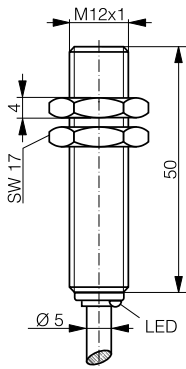
FAMILY	FULL INOX	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M12	M12	M12	M12
OPERATING DISTANCE MM	3	4	4	4



DATA	FULL INOX	CLASSICS	CLASSICS	CLASSICS
Housing material	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	Connector S12	PVC cable	PVC cable	PVC cable
Degree of protection	IP 68 & IP 69K	IP 67	IP 67	IP 67
Mounting	Embeddable	Non-embeddable	Non-embeddable	Embeddable
Max. switching frequency	100 Hz	2000 Hz	2000 Hz	2500 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-703-M12-BAS</b>	<b>DW-AD-613-M12-120</b>	<b>DW-AD-613-M12</b>	<b>DW-AD-623-M12-120</b>
NPN NO	<b>DW-AS-701-M12-BAS</b>	<b>DW-AD-611-M12-120</b>	<b>DW-AD-611-M12</b>	<b>DW-AD-621-M12-120</b>
Other types available		PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12	M12	M12	M12
4	4	4	4



Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
PVC cable	Connector S12	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-embeddable	Embeddable
2500 Hz	2000 Hz	2000 Hz	2500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-623-M12</b>	<b>DW-AS-613-M12-120</b>	<b>DW-AS-613-M12</b>	<b>DW-AS-623-M12-120</b>
<b>DW-AD-621-M12</b>	<b>DW-AS-611-M12-120</b>	<b>DW-AS-611-M12</b>	<b>DW-AS-621-M12-120</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

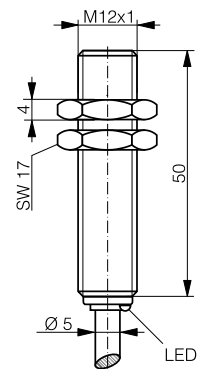
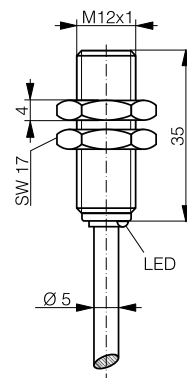
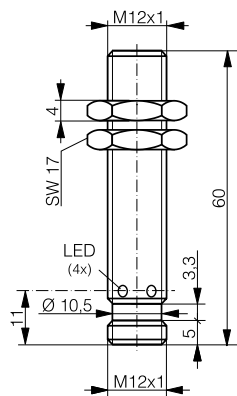
Inductive
Photoelectric
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# BASIC

## INDUCTIVE

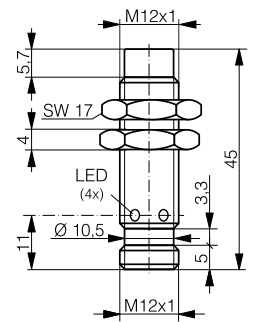
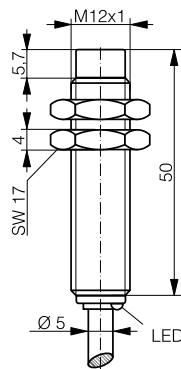
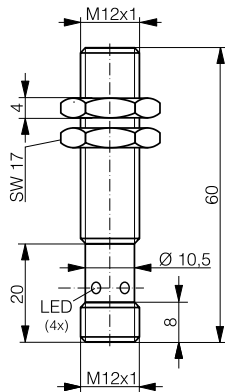
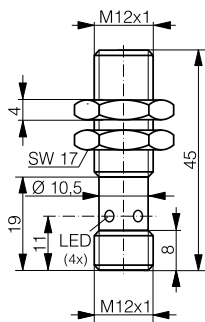
FAMILY	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M12	M12	M12
OPERATING DISTANCE MM	4	6	6



DATA			
Housing material	Nickel-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	2500 Hz	800 Hz	800 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-623-M12</b>	<b>DW-AD-503-M12-120</b>	<b>DW-AD-503-M12</b>
NPN NO	<b>DW-AS-621-M12</b>	<b>DW-AD-501-M12-120</b>	<b>DW-AD-501-M12</b>
PNP NC	DW-AS-624-M12		
Other types available	NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

EXTRA DISTANCE	EXTRA DISTANCE	CLASSICS	CLASSICS	Inductive
M12	M12	M12	M12	
6	6	8	8	



Photoelectric

Ultrasonic

Capacitive

Safety

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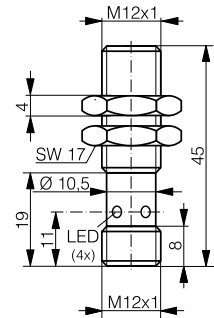
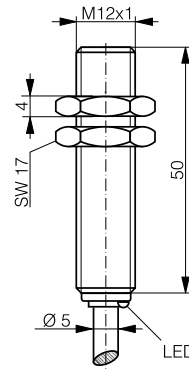
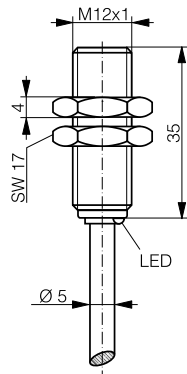
Index

Chrome-plated brass	Chrome-plated brass	Nickel-plated brass	Nickel-plated brass
Connector S12	Connector S12	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Non-embeddable	Non-embeddable
800 Hz	800 Hz	1400 Hz	1400 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-503-M12-120</b>	<b>DW-AS-503-M12</b>	<b>DW-AD-633-M12</b>	<b>DW-AS-633-M12-120</b>
<b>DW-AS-501-M12-120</b>	<b>DW-AS-501-M12</b>	<b>DW-AD-631-M12</b>	<b>DW-AS-631-M12-120</b>
	DW-AS-504-M12	DW-AD-634-M12	DW-AS-634-M12-120
PNP NC, NPN NC	NPN NC	NPN NC, length 35 mm	NPN NC, length 60 mm

# BASIC

## INDUCTIVE

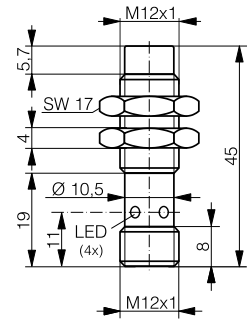
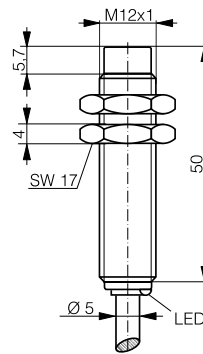
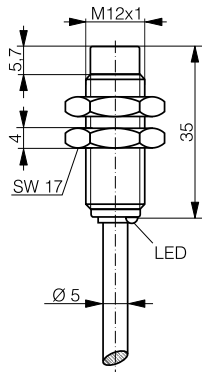
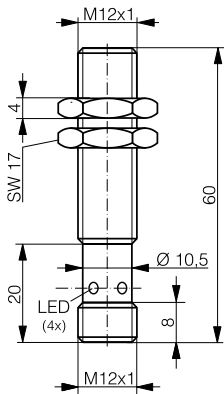
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M12	M12	M12
OPERATING DISTANCE MM	8	8	8



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	400 Hz	400 Hz	400 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-523-M12-120</b>	<b>DW-AD-523-M12</b>	<b>DW-AS-523-M12-120</b>
NPN NO	<b>DW-AD-521-M12-120</b>	<b>DW-AD-521-M12</b>	<b>DW-AS-521-M12-120</b>
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M12	M12	M12	M12
8	10	10	10



Inductive
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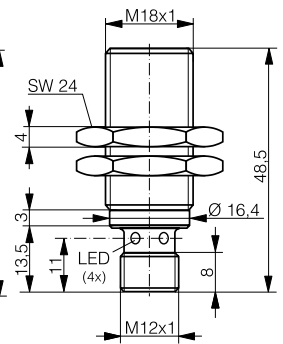
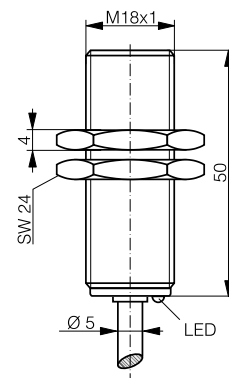
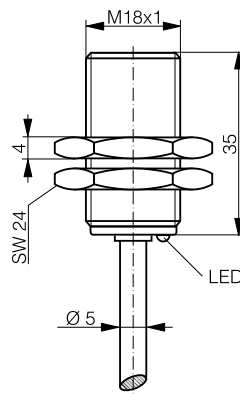
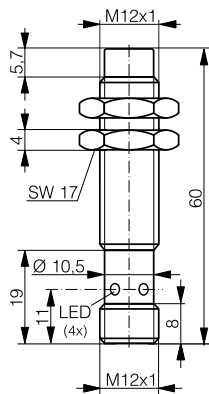
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
400 Hz	400 Hz	400 Hz	400 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-523-M12</b>	<b>DW-AD-513-M12-120</b>	<b>DW-AD-513-M12</b>	<b>DW-AS-513-M12-120</b>
<b>DW-AS-521-M12</b>	<b>DW-AD-511-M12-120</b>	<b>DW-AD-511-M12</b>	<b>DW-AS-511-M12-120</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC



# BASIC

## INDUCTIVE

FAMILY	EXTRA DISTANCE	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M12	M18	M18	M18
OPERATING DISTANCE MM	10	5	5	5



DATA				
Housing material	Chrome-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	Connector S12	PVC cable	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Embeddable	Embeddable	Embeddable
Max. switching frequency	400 Hz	2000 Hz	2000 Hz	2000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F	-25...+70°C/-13...+158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-513-M12</b>	<b>DW-AD-603-M18-120</b>	<b>DW-AD-603-M18</b>	<b>DW-AS-603-M18-120</b>
NPN NO	<b>DW-AS-511-M12</b>	<b>DW-AD-601-M18-120</b>	<b>DW-AD-601-M18</b>	<b>DW-AS-601-M18-120</b>
PNP NC	DW-AS-514-M12		DW-AD-604-M18	
Other types available	NPN NC	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	FULL INOX	FULL INOX	CLASSICS	CLASSICS
M18	M18	M18	M18	M18
5	5	5	8	8



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

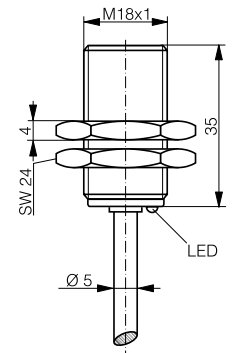
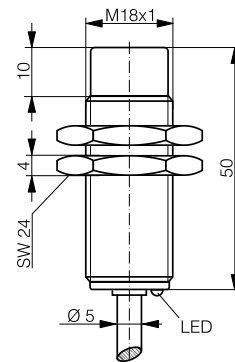
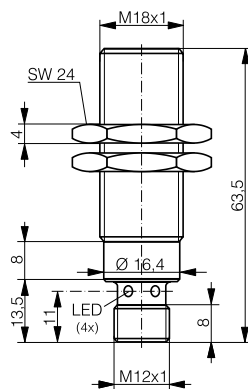
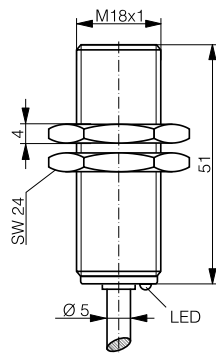
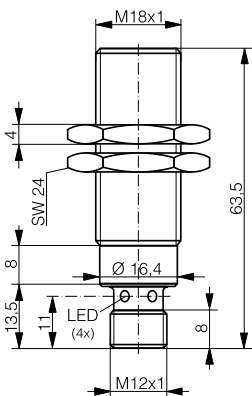
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Nickel-plated brass	Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass
Connector S12	PUR cable	Connector S12	PVC cable	PVC cable
IP 67	IP 68	IP 68 & IP 69K	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Non-embeddable	Quasi-embeddable
2000 Hz	100 Hz	100 Hz	2000 Hz	1500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-603-M18-002</b>	<b>DW-AD-703-M18-BAS</b>	<b>DW-AS-703-M18-BAS</b>	<b>DW-AD-613-M18</b>	<b>DW-AD-623-M18-120</b>
<b>DW-AS-601-M18-002</b>	<b>DW-AD-701-M18-BAS</b>	<b>DW-AS-701-M18-BAS</b>	<b>DW-AD-611-M18</b>	<b>DW-AD-621-M18-120</b>
DW-AS-604-M18-002				
NPN NC			PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE

M18

M18

M18

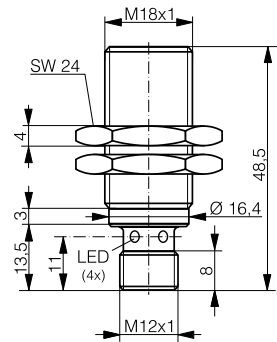
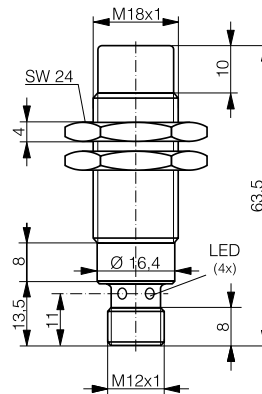
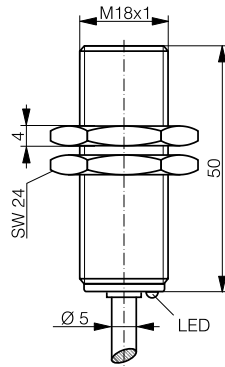
OPERATING DISTANCE MM

8

8

8

INDUCTIVE

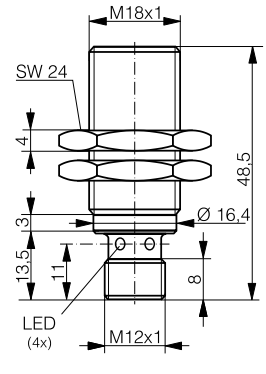
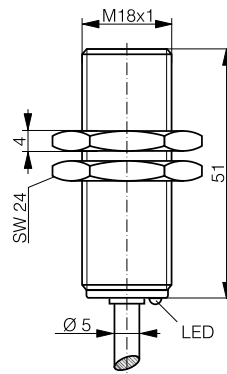
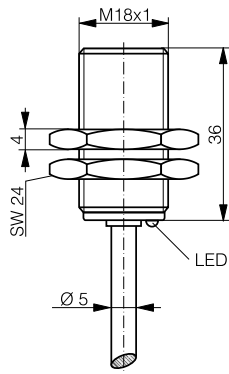
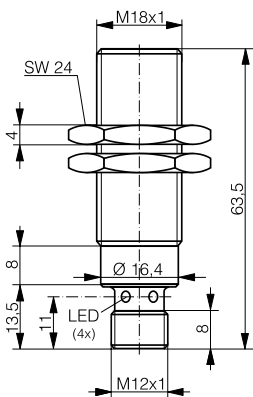


DATA

Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	PVC cable	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Quasi-embeddable	Non-embeddable	Embeddable
Max. switching frequency	1500 Hz	2000 Hz	1500 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-623-M18</b>	<b>DW-AS-613-M18-002</b>	<b>DW-AS-623-M18-120</b>
NPN NO	<b>DW-AD-621-M18</b>	<b>DW-AS-611-M18-002</b>	<b>DW-AS-621-M18-120</b>
PNP NC		DW-AS-614-M18-002	
Other types available	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

# BASIC

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M18	M18	M18	M18
8	12	12	12



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

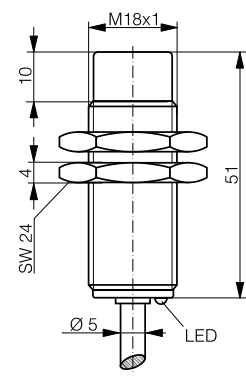
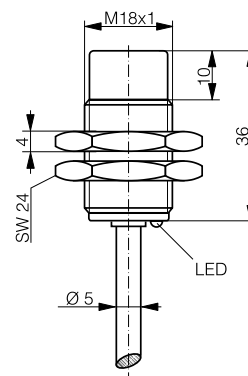
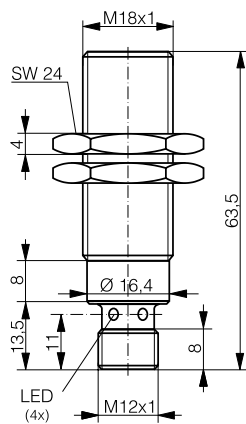
Index

Nickel-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
1500 Hz	500 Hz	500 Hz	500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-623-M18-002</b>	<b>DW-AD-503-M18-120</b>	<b>DW-AD-503-M18</b>	<b>DW-AS-503-M18-120</b>
<b>DW-AS-621-M18-002</b>	<b>DW-AD-501-M18-120</b>	<b>DW-AD-501-M18</b>	<b>DW-AS-501-M18-120</b>
DW-AS-624-M18-002			
NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# BASIC

## INDUCTIVE

FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M18	M18	M18
OPERATING DISTANCE MM	12	20	20



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Quasi-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	500 Hz	200 Hz	200 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-503-M18-002</b>	<b>DW-AD-513-M18-120</b>	<b>DW-AD-513-M18</b>
NPN NO	<b>DW-AS-501-M18-002</b>	<b>DW-AD-511-M18-120</b>	<b>DW-AD-511-M18</b>
PNP NC	DW-AS-504-M18-002		DW-AD-514-M18
Other types available	NPN NC	PNP NC, NPN NC	NPN NC

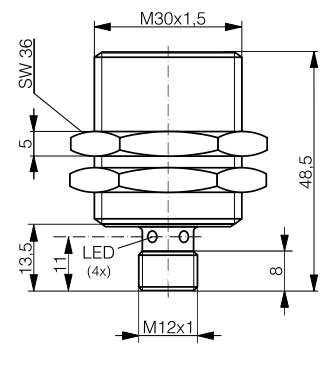
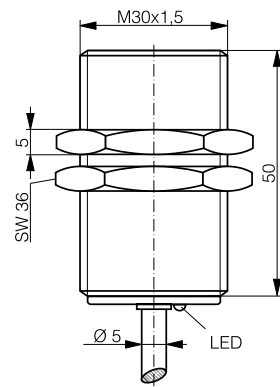
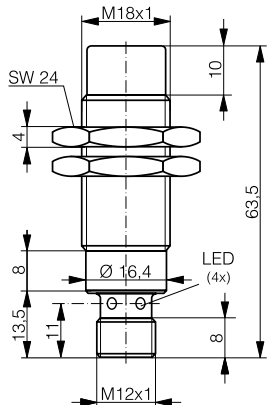
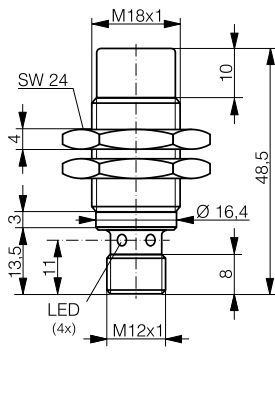


# BASIC

EXTRA DISTANCE	EXTRA DISTANCE	CLASSICS	CLASSICS	Inductive
M18	M18	M30	M30	
20	20	10	10	



Photoelectric  
Ultrasonic  
Capacitive



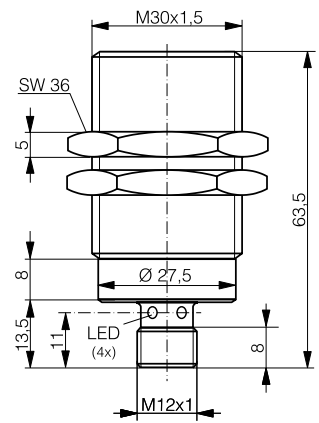
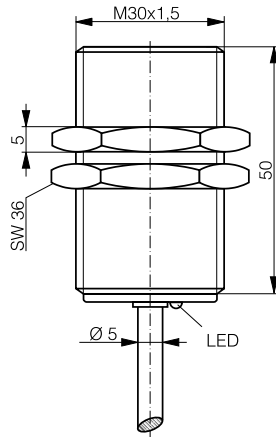
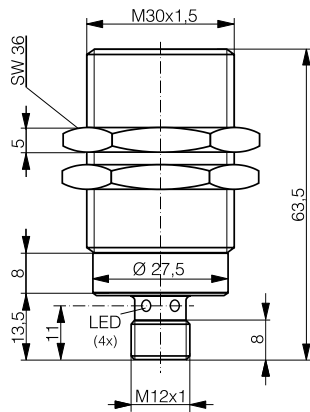
Safety  
RFID

EXTRA DISTANCE	EXTRA DISTANCE	CLASSICS	CLASSICS	Connectivity
Chrome-plated brass	Chrome-plated brass	Nickel-plated brass	Nickel-plated brass	
Connector S12	Connector S12	PVC cable	Connector S12	
IP 67	IP 67	IP 67	IP 67	Accessories
Non-embeddable	Non-embeddable	Embeddable	Embeddable	
200 Hz	200 Hz	1200 Hz	1200 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	Glossary
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AS-513-M18-120</b>	<b>DW-AS-513-M18-002</b>	<b>DW-AD-603-M30</b>	<b>DW-AS-603-M30-120</b>	Index
<b>DW-AS-511-M18-120</b>	<b>DW-AS-511-M18-002</b>	<b>DW-AD-601-M30</b>	<b>DW-AS-601-M30-120</b>	
	DW-AS-514-M18-002			
PNP NC, NPN NC	NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

# BASIC

## INDUCTIVE

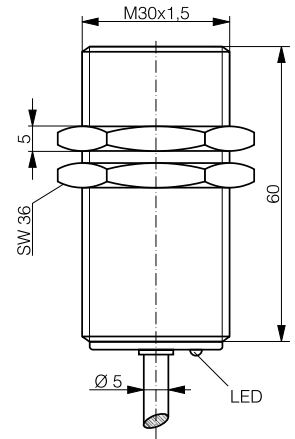
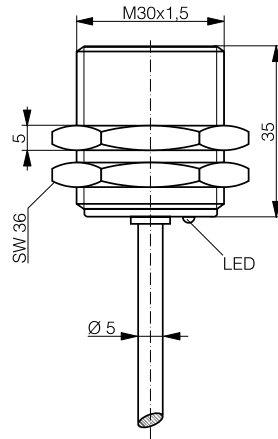
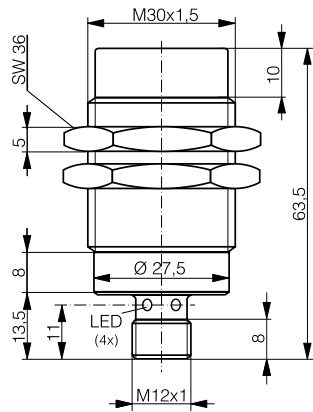
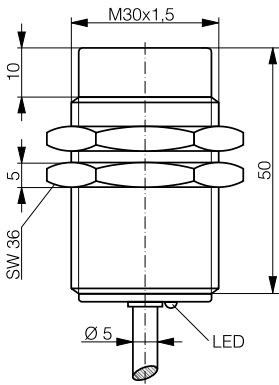
FAMILY	CLASSICS	FULL INOX	FULL INOX
HOUSING SIZE	M30	M30	M30
OPERATING DISTANCE MM	10	10	10



DATA			
Housing material	Nickel-plated brass	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	PUR cable	Connector S12
Degree of protection	IP 67	IP 68	IP 68 & IP 69K
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1200 Hz	50 Hz	50 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-603-M30-002</b>	<b>DW-AS-703-M30-BAS</b>	<b>DW-AD-703-M30-BAS</b>
NPN NO	<b>DW-AS-601-M30-002</b>	<b>DW-AS-701-M30-BAS</b>	<b>DW-AD-701-M30-BAS</b>
PNP NC			
Other types available	PNP NC, NPN NC		

# BASIC

CLASSICS	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M30	M30	M30	M30	
15	15	22	22	



Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

Nickel-plated brass	Nickel-plated brass	Chrome-plated brass	Chrome-plated brass	
PVC cable	Connector S12	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Non-embeddable	Non-embeddable	Quasi-embeddable	Quasi-embeddable	
700 Hz	700 Hz	200 Hz	200 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AD-613-M30</b>	<b>DW-AS-613-M30-002</b>	<b>DW-AD-503-M30-120</b>	<b>DW-AD-503-M30</b>	
<b>DW-AD-611-M30</b>	<b>DW-AS-611-M30-002</b>	<b>DW-AD-501-M30-120</b>	<b>DW-AD-501-M30</b>	
			DW-AD-504-M30	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	

# BASIC

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE

M30

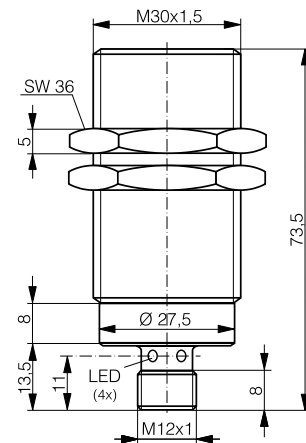
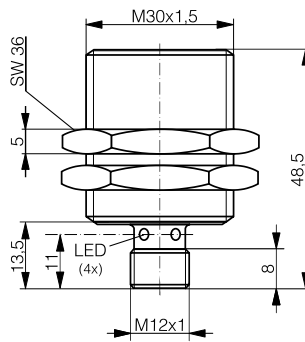
M30

OPERATING DISTANCE MM

22

22

INDUCTIVE



## DATA

Housing material

Chrome-plated brass

Chrome-plated brass

Connection

Connector S12

Connector S12

Degree of protection

IP 67

IP 67

Mounting

Quasi-embeddable

Quasi-embeddable

Max. switching frequency

200 Hz

200 Hz

Supply voltage range

10 ... 30 VDC

10 ... 30 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

≤ 200 mA

≤ 200 mA

PNP NO

**DW-AS-503-M30-120**

**DW-AS-503-M30-002**

NPN NO

**DW-AS-501-M30-120**

**DW-AS-501-M30-002**

PNP NC

DW-AS-504-M30-002

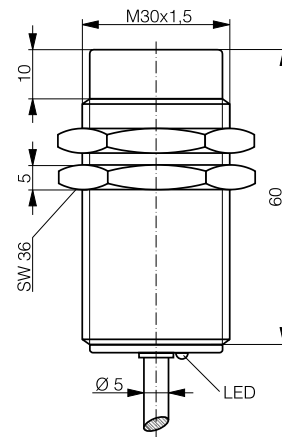
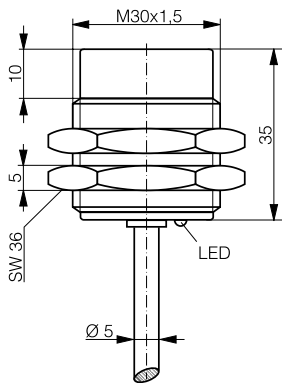
Other types available

PNP NC, NPN NC

NPN NC

# BASIC

EXTRA DISTANCE	EXTRA DISTANCE
M30	M30
40	40



Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable
IP 67	IP 67
Non-embeddable	Non-embeddable
100 Hz	100 Hz
10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA
<b>DW-AD-513-M30-120</b>	<b>DW-AD-513-M30</b>
<b>DW-AD-511-M30-120</b>	<b>DW-AD-511-M30</b>
PNP NC, NPN NC	PNP NC, NPN NC

- Inductive
- Photoelectric
- Ultrasonic
- Capacitive
- Safety
- RFID
- Connectivity
- Accessories
- Glossary
- Index



# BASIC

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE MM

M30

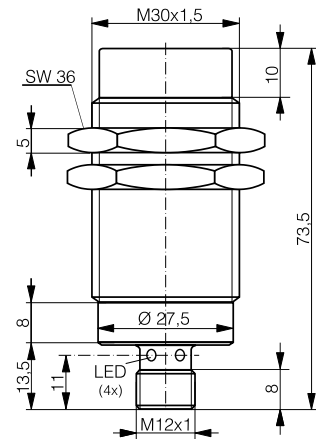
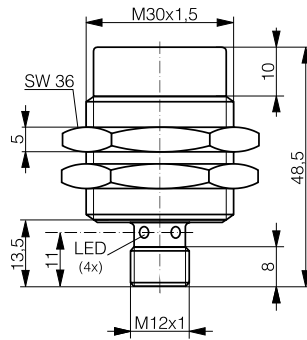
M30

OPERATING DISTANCE MM

40

40

INDUCTIVE



DATA

Housing material

Chrome-plated brass

Chrome-plated brass

Connection

Connector S12

Connector S12

Degree of protection

IP 67

IP 67

Mounting

Non-embeddable

Non-embeddable

Max. switching frequency

100 Hz

100 Hz

Supply voltage range

10 ... 30 VDC

10 ... 30 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

≤ 200 mA

≤ 200 mA

PNP NO

**DW-AS-513-M30-120**

**DW-AS-513-M30-002**

NPN NO

**DW-AS-511-M30-120**

**DW-AS-511-M30-002**

PNP NC

DW-AS-514-M30-002

PNP NO + NC

NPN NO + NC

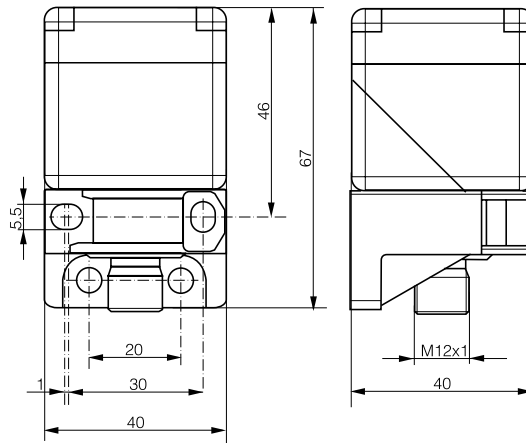
Other types available

PNP NC, NPN NC

NPN NC

# BASIC

CLASSICS	CLASSICS	CLASSICS
□ 40 x 40	□ 40 x 40	□ 40 x 40
15	20	30



PA GF	PA GF	PA GF
Connector S12	Connector S12	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Non-embeddable
100 Hz	100 Hz	100 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-60A-C44</b>	<b>DW-AS-62A-C44</b>	<b>DW-AS-61A-C44</b>
<b>DW-AS-60B-C44</b>	<b>DW-AS-62B-C44</b>	<b>DW-AS-61B-C44</b>

- Inductive
- Photoelectric
- Ultrasonic
- Capacitive
- Safety
- RFID
- Connectivity
- Accessories
- Glossary
- Index

# BASIC

FAMILY

CLASSICS

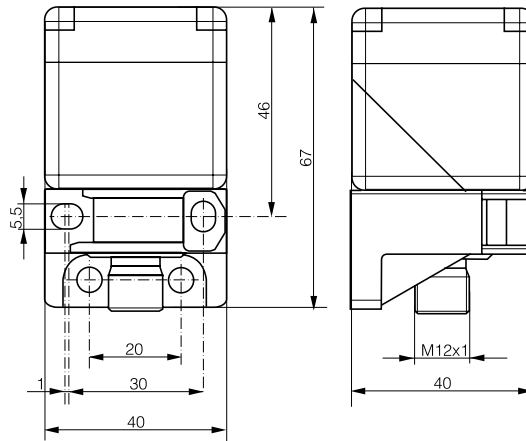
HOUSING SIZE MM

□ 40 x 40

OPERATING DISTANCE MM

40

INDUCTIVE



## DATA

Housing material	PA GF
Connection	Connector S12
Degree of protection	IP 68 / IP 69K
Mounting	Non-embeddable
Max. switching frequency	100 Hz
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +85°C / -13 ... +185°F
Output current	≤ 200 mA
PNP NO + NC	<b>DW-AS-63A-C44</b>
NPN NO + NC	<b>DW-AS-63B-C44</b>
Other types available	







FULL FUNCTIONALITY, SMALLEST SIZE

# MINIATURE INDUCTIVE SENSORS

## KEY ADVANTAGES

### Classics, Extra Distance and Full Inox

- ✓ High quality ASIC sensors with IO-Link interface
- ✓ Smallest self-contained inductive sensors on the market
- ✓ Outstanding temperature stability from -25°C (-13°F) to +70°C (+158°F)
- ✓ High switching frequency up to 5000 Hz
- ✓ Electronics vacuum potted for optimum long-term reliability under high stress

### Full Inox

- ✓ Extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 80 bar

RANGE OVERVIEW	Housing size	Classics	Extra Distance	Full Inox
MINIATURE	∅ 3 mm	p. 71-72		
	M4	p. 72-73		
	∅ 4 mm	p. 73-75	p. 75	p. 75
	M5	p. 76-77	p. 77	p. 78
	C5	p. 78-79		

FAMILY

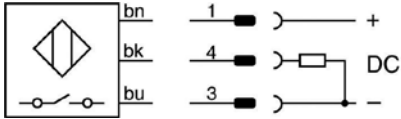
HOUSING SIZE MM

OPERATING DISTANCE MM

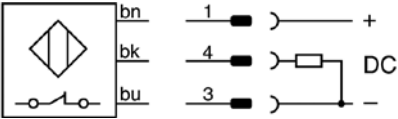
# INDUCTIVE

## WIRING DIAGRAMS

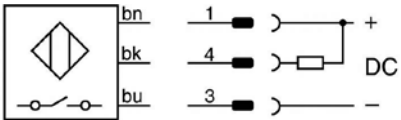
PNP NO



PNP NC



NPN NO

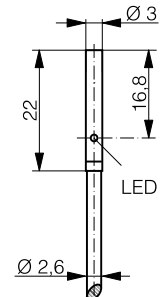
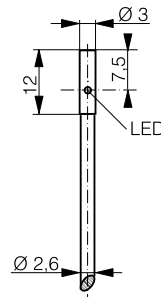
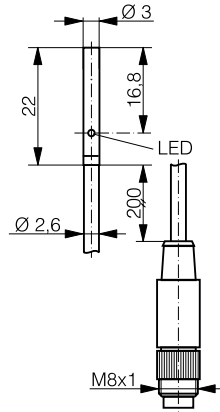
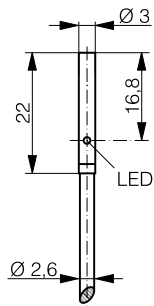


## DATA

Housing material
Connection
Degree of protection
Mounting
Max. switching frequency
Supply voltage range
Ambient temperature range
Output current
PNP NO
NPN NO
PNP NC
Other types available

# MINIATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 3	Ø 3	Ø 3	Ø 3
0.6	0.6	1	1



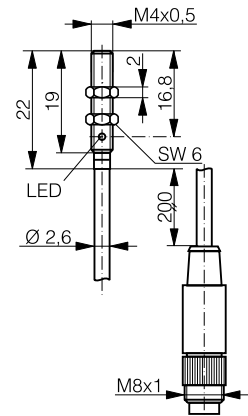
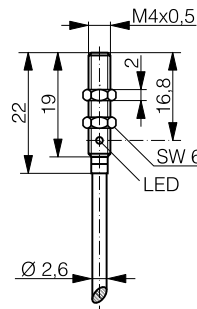
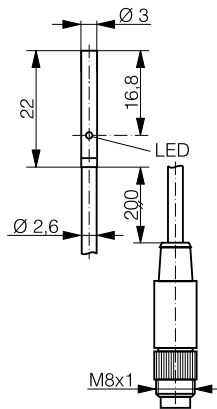
Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
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Accessories
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Index

Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable / Connector S8	PUR cable	PUR cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 Hz	8000 Hz	3000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
<b>DW-AD-603-03</b>	<b>DW-AV-603-03-276</b>	<b>DW-AD-623-03-960</b>	<b>DW-AD-623-03</b>
<b>DW-AD-601-03</b>	<b>DW-AV-601-03-276</b>	<b>DW-AD-621-03-960</b>	<b>DW-AD-621-03</b>
DW-AD-604-03			
NPN NC	PNP NC, NPN NC		PNP NC, NPN NC

# MINIATURE

## INDUCTIVE

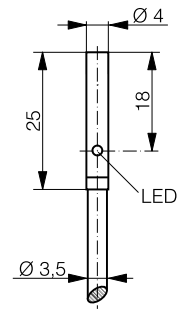
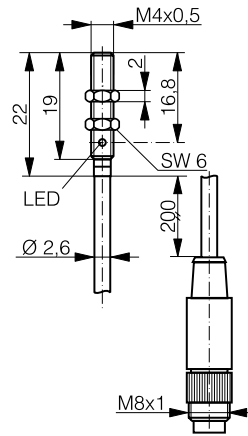
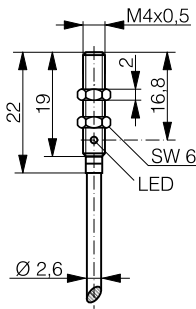
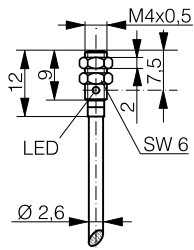
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 3	M4	M4
OPERATING DISTANCE MM	1	0.6	0.6



DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PUR cable / Connector S8	PUR cable	PUR cable / Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	3000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 100 mA
PNP NO	<b>DW-AV-623-03-276</b>	<b>DW-AD-603-M4</b>	<b>DW-AV-603-M4-276</b>
NPN NO	<b>DW-AV-621-03-276</b>	<b>DW-AD-601-M4</b>	<b>DW-AV-601-M4-276</b>
PNP NC		DW-AD-604-M4	
Other types available	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

# MINIATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M4	M4	M4	Ø 4
1	1	1	0.8



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable	PUR cable / Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
8000 Hz	3000 Hz	3000 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 200 mA
<b>DW-AD-623-M4-960</b>	<b>DW-AD-623-M4</b>	<b>DW-AV-623-M4-276</b>	<b>DW-AD-603-04</b>
<b>DW-AD-621-M4-960</b>	<b>DW-AD-621-M4</b>	<b>DW-AV-621-M4-276</b>	<b>DW-AD-601-04</b>
			DW-AD-604-04
	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC



# MINIATURE

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 4

Ø 4

Ø 4

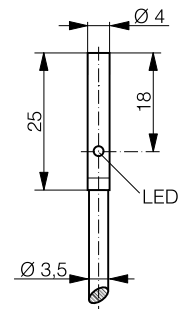
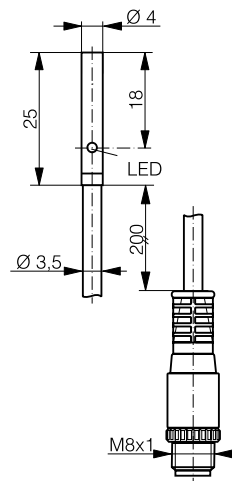
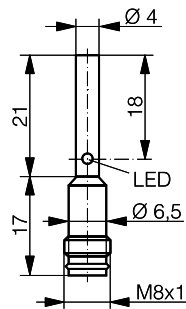
OPERATING DISTANCE MM

0.8

0.8

1.5

INDUCTIVE

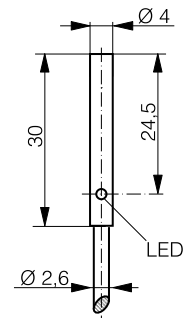
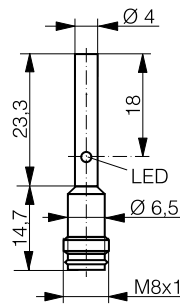
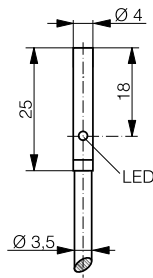
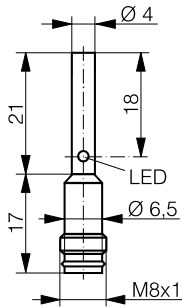


DATA

Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	PVC cable / Connector S8	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	3000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-603-04</b>	<b>DW-AV-603-04-236</b>	<b>DW-AD-623-04</b>
NPN NO	<b>DW-AS-601-04</b>	<b>DW-AV-601-04-236</b>	<b>DW-AD-621-04</b>
PNP NC			DW-AD-624-04
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

# MINIATURE

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	FULL INOX
Ø 4	Ø 4	Ø 4	Ø 4
1.5	2.5	2.5	3



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

Stainless steel V2A	Nickel silver	Nickel silver	Stainless steel V2A
Connector S8	PVC cable	Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Non-embeddable
3000 Hz	800 Hz	800 Hz	1200 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-623-04</b>	<b>DW-AD-503-04</b>	<b>DW-AS-503-04</b>	<b>DW-AD-713-04</b>
<b>DW-AS-621-04</b>	<b>DW-AD-501-04</b>	<b>DW-AS-501-04</b>	<b>DW-AD-711-04</b>
		DW-AS-504-04	
PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	

# MINIATURE

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

M5

M5

M5

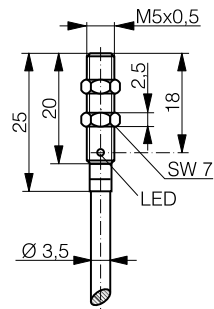
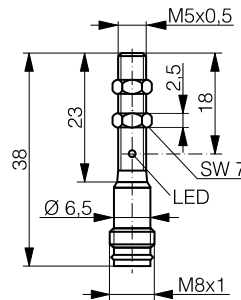
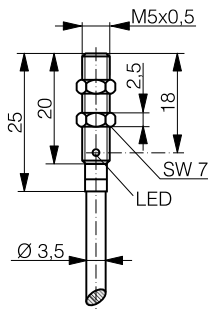
OPERATING DISTANCE MM

0.8

0.8

1.5

INDUCTIVE



## DATA

Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	Connector S8	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	3000 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-603-M5</b>	<b>DW-AS-603-M5</b>	<b>DW-AD-623-M5</b>
NPN NO	<b>DW-AD-601-M5</b>	<b>DW-AS-601-M5</b>	<b>DW-AD-621-M5</b>
PNP NC	DW-AD-604-M5	DW-AS-604-M5	DW-AD-624-M5
Other types available	NPN NC	NPN NC	NPN NC

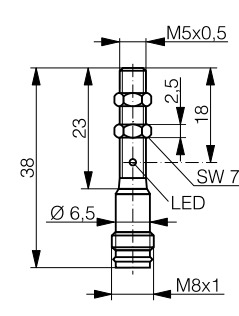
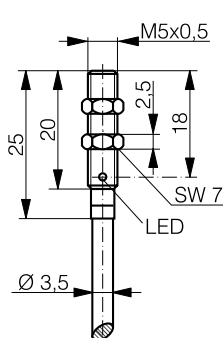
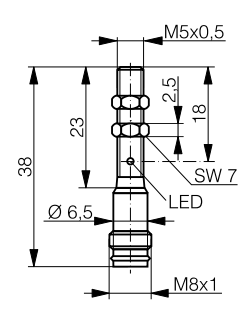
CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M5	M5	M5	
1.5	2.5	2.5	



Photoelectric

Ultrasonic

Capacitive



Safety

RFID

Connectivity

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	Accessories
Stainless steel V2A	Nickel silver	Nickel silver	
Connector S8	PVC cable	Connector S8	
IP 67	IP 67	IP 67	Glossary
Embeddable	Embeddable	Embeddable	
3000 Hz	800 Hz	800 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	Index
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-AS-623-M5</b>	<b>DW-AD-503-M5</b>	<b>DW-AS-503-M5</b>	Index
<b>DW-AS-621-M5</b>	<b>DW-AD-501-M5</b>	<b>DW-AS-501-M5</b>	
DW-AS-624-M5	DW-AD-504-M5	DW-AS-504-M5	
NPN NC	NPN NC	NPN NC	

# MINIATURE

FAMILY

FULL INOX

CLASSICS

HOUSING SIZE MM

M5

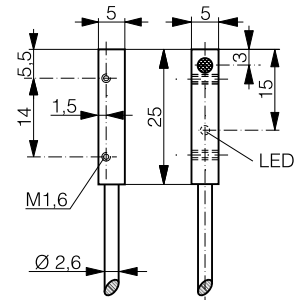
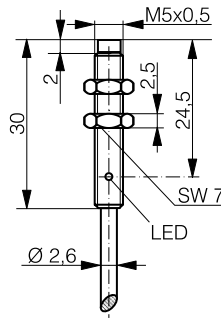
□ 5 x 5

OPERATING DISTANCE MM

3

0.8

INDUCTIVE



## DATA

Housing material

Stainless steel V2A

Chrome-plated brass

Connection

PVC cable

PUR cable

Degree of protection

IP 67

IP 67

Mounting

Non-embeddable

Embeddable

Max. switching frequency

1200 Hz

5000 Hz

Supply voltage range

10 ... 30 VDC

10 ... 30 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

≤ 200 mA

≤ 200 mA

PNP NO

**DW-AD-713-M5**

**DW-AD-603-C5**

NPN NO

**DW-AD-711-M5**

**DW-AD-601-C5**

PNP NC

DW-AD-604-C5

Other types available

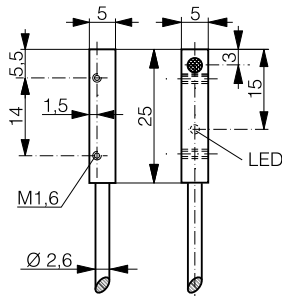
NPN NC

# MINIATURE

CLASSICS

□ 5 x 5

1.5



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

Chrome-plated brass

PUR cable

IP 67

Embeddable

3000 Hz

10 ... 30 VDC

-25 ... +70°C / -13 ... +158°F

≤ 200 mA

**DW-AD-623-C5**

**DW-AD-621-C5**

DW-AD-624-C5

NPN NC





# EXTREME DURABILITY IN HARSH ENVIRONMENTS

# EXTREME

# INDUCTIVE SENSORS

## KEY ADVANTAGES

- ✓ Mechanically and chemically extremely robust
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 80 bar (1160 psi)

### RANGE OVERVIEW

### Housing size

### Full Inox

## EXTREME

M8

p. 83-84

M12

p. 84-86

M18

p. 86-88

M30

p. 88-89

C23

p. 90

FAMILY

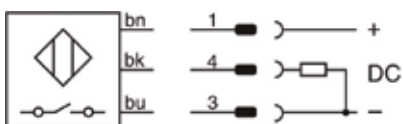
HOUSING SIZE

OPERATING DISTANCE MM

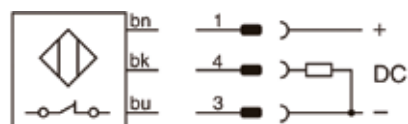
# INDUCTIVE

## WIRING DIAGRAMS

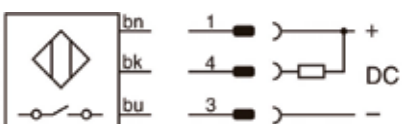
PNP NO



PNP NC



NPN NO



## DATA

Sensing face material

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

PNP NO

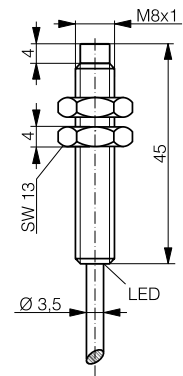
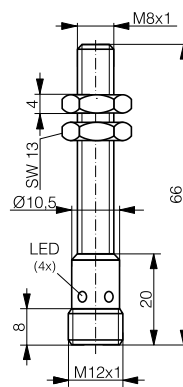
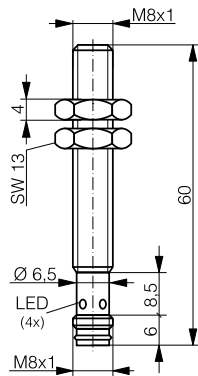
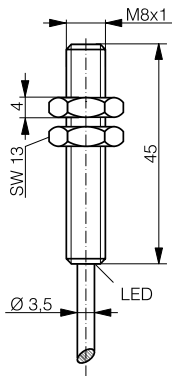
NPN NO

PNP NC

Other types available

# EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX	Inductive
M8	M8	M8	M8	
3	3	3	6	



Photoelectric  
Ultrasonic  
Capacitive  
Safety  
RFID

				Connectivity
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	
PUR cable	Connector S8	Connector S12	PUR cable	
IP 68	IP 67	IP 67	IP 68	
Embeddable	Embeddable	Embeddable	Non-embeddable	Glossary
1000 Hz	1000 Hz	1000 Hz	700 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	Index
<b>DW-AD-703-M8</b>	<b>DW-AS-703-M8-001</b>	<b>DW-AS-703-M8</b>	<b>DW-AD-713-M8</b>	
<b>DW-AD-701-M8</b>	<b>DW-AS-701-M8-001</b>	<b>DW-AS-701-M8</b>	<b>DW-AD-711-M8</b>	
DW-AD-704-M8			DW-AD-714-M8	
NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	

# EXTREME

FAMILY

FULL INOX

FULL INOX

FULL INOX

HOUSING SIZE

M8

M8

M12

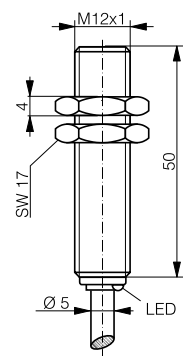
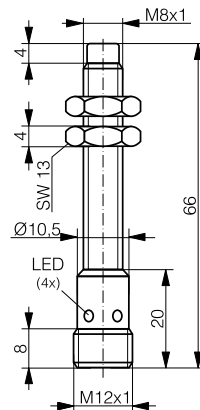
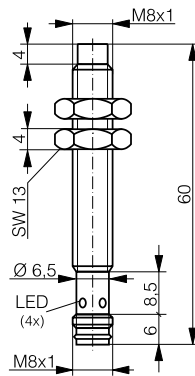
OPERATING DISTANCE MM

6

6

2

INDUCTIVE



DATA

Sensing face material

Stainless steel V2A

Stainless steel V2A

Stainless steel V2A

Housing material

Stainless steel V2A

Stainless steel V2A

Stainless steel V2A

Connection

Connector S8

Connector S12

PUR cable

Degree of protection

IP 67

IP 67

IP 68 / IP 69K

Mounting

Non-embeddable

Non-embeddable

Embeddable

Max. switching frequency

700 Hz

700 Hz

850 Hz

Supply voltage range

10 ... 30 VDC

10 ... 30 VDC

10 ... 30 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

≤ 200 mA

≤ 200 mA

≤ 200 mA

PNP NO

**DW-AS-713-M8-001**

**DW-AS-713-M8**

**DW-AD-703-M12-303**

NPN NO

**DW-AS-711-M8-001**

**DW-AS-711-M8**

**DW-AD-701-M12-303**

PNP NC

Other types available

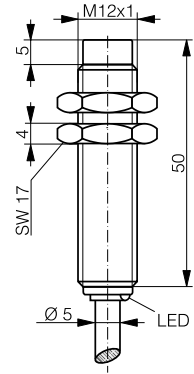
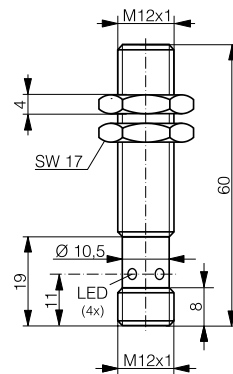
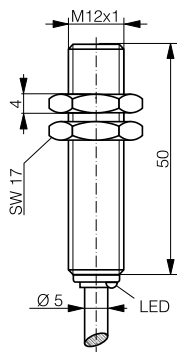
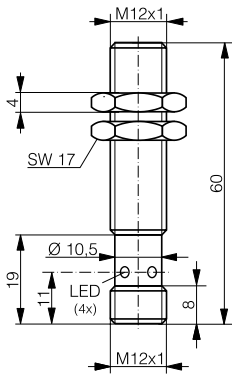
PNP NC, NPN NC

PNP NC, NPN NC

PNP NC, NPN NC

# EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX
M12	M12	M12	M12
2	6	6	10



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	PUR cable	Connector S12	PUR cable
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	Non-embeddable
850 Hz	600 Hz	600 Hz	400 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-703-M12-303</b>	<b>DW-AD-703-M12</b>	<b>DW-AS-703-M12</b>	<b>DW-AD-713-M12</b>
<b>DW-AS-701-M12-303</b>	<b>DW-AD-701-M12</b>	<b>DW-AS-701-M12</b>	<b>DW-AD-711-M12</b>
		DW-AS-704-M12	
PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
Connectivity
Accessories
Glossary
Index



# EXTREME

FAMILY

FULL INOX

FULL INOX

FULL INOX

HOUSING SIZE

M12

M12

M18

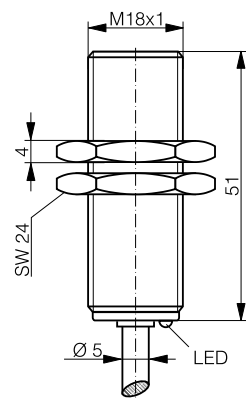
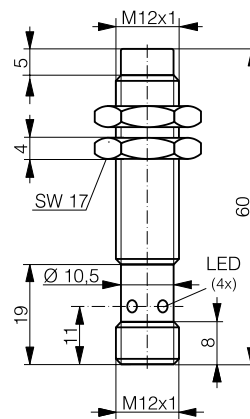
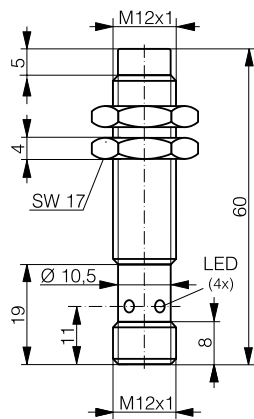
OPERATING DISTANCE MM

10

15

5

INDUCTIVE

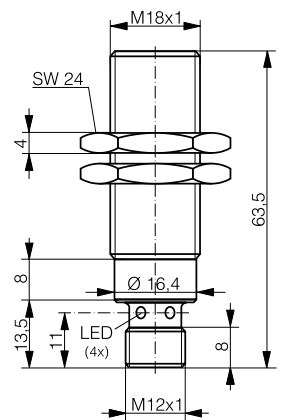
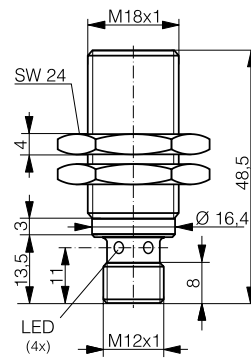
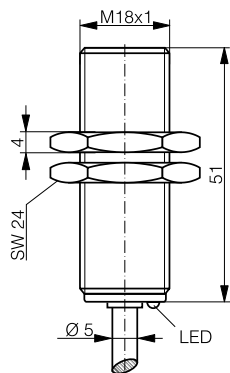
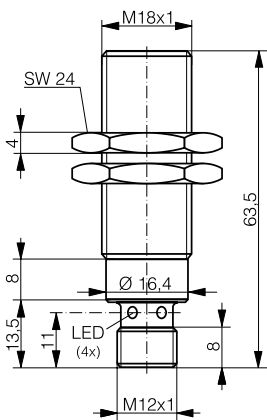


DATA

Sensing face material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	Connector S12	PUR cable
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Non-embeddable	Non-embeddable	Embeddable
Max. switching frequency	400 Hz	220 Hz	500 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-713-M12</b>	<b>DW-AS-733-M12</b>	<b>DW-AD-703-M18-303</b>
NPN NO	<b>DW-AS-711-M12</b>	<b>DW-AS-731-M12</b>	<b>DW-AD-701-M18-303</b>
PNP NC			
Other types available	PNP NC, NPN NC		PNP NC, NPN NC

# EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX
M18	M18	M18	M18
5	10	10	10



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	PUR cable	Connector S12	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	Embeddable
500 Hz	200 Hz	200 Hz	200 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-703-M18-303</b>	<b>DW-AD-703-M18</b>	<b>DW-AS-703-M18-120</b>	<b>DW-AS-703-M18-002</b>
<b>DW-AS-701-M18-303</b>	<b>DW-AD-701-M18</b>	<b>DW-AS-701-M18-120</b>	<b>DW-AS-701-M18-002</b>
	DW-AD-704-M18		DW-AS-704-M18-002
PNP NC, NPN NC	NPN NC	PNP NC, NPN NC	NPN NC

Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
Connectivity
Accessories
Glossary
Index

# EXTREME

FAMILY

FULL INOX

FULL INOX

FULL INOX

HOUSING SIZE

M18

M18

M30

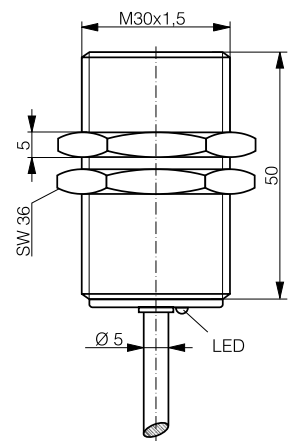
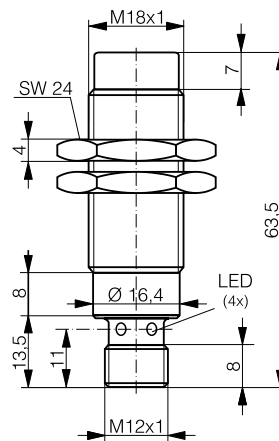
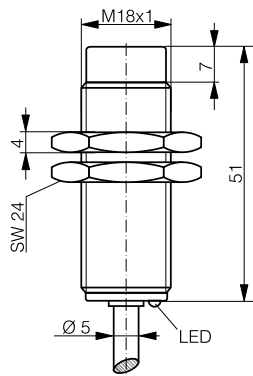
OPERATING DISTANCE MM

20

20

20

INDUCTIVE

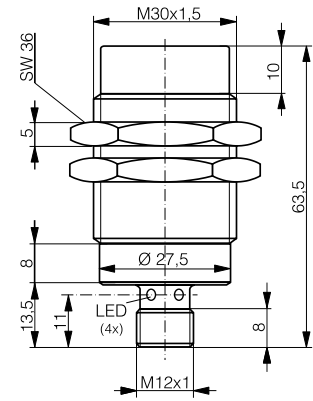
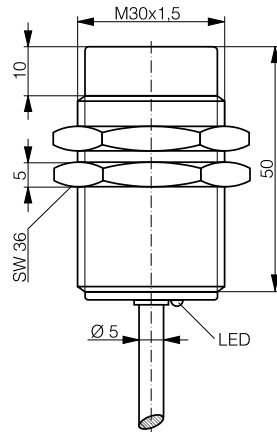
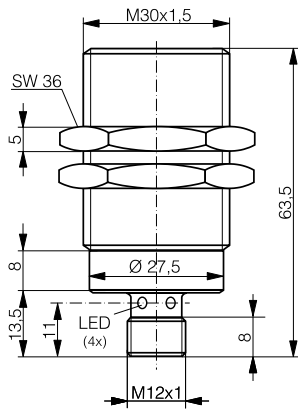


DATA

Sensing face material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PUR cable	Connector S12	PUR cable
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Non-embeddable	Non-embeddable	Embeddable
Max. switching frequency	200 Hz	200 Hz	100 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-713-M18</b>	<b>DW-AS-713-M18-002</b>	<b>DW-AD-703-M30</b>
NPN NO	<b>DW-AD-711-M18</b>	<b>DW-AS-711-M18-002</b>	<b>DW-AD-701-M30</b>
PNP NC			DW-AD-704-M30
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

# EXTREME

FULL INOX	FULL INOX	FULL INOX
M30	M30	M30
20	40	40



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

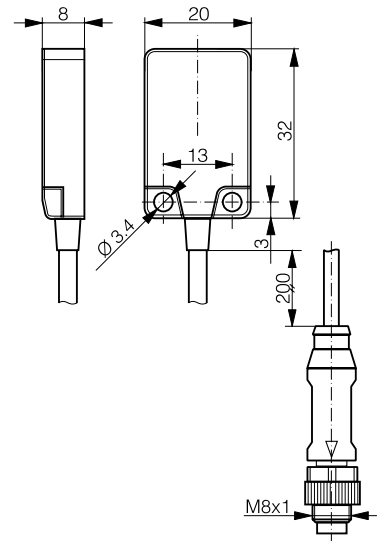
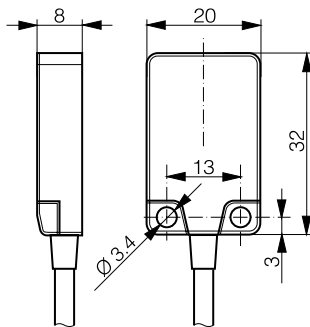
Index

Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	PUR cable	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Non-embeddable	Non-embeddable
100 Hz	90 Hz	90 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-703-M30-002</b>	<b>DW-AD-713-M30</b>	<b>DW-AS-713-M30-002</b>
<b>DW-AS-701-M30-002</b>	<b>DW-AD-711-M30</b>	<b>DW-AS-711-M30-002</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# EXTREME

## INDUCTIVE

FAMILY	FULL INOX	FULL INOX
HOUSING SIZE	C23	C23
OPERATING DISTANCE MM	7	7



DATA		
Housing material	Stainless steel V2A	Stainless steel V2A
Connection	PUR cable	Pigtail
Degree of protection	IP 68 & IP 69K	IP 68 & IP 69K
Mounting	Embeddable	Embeddable
Max. switching frequency	180 Hz	180 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
Output current	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AD-703-C23</b>	<b>DW-AV-703-C23-276</b>
NPN NO	<b>DW-AD-701-C23</b>	<b>DW-AV-701-C23-276</b>
Other types available		





PRESSURE



**PRESSURE RESISTANT UP TO 100 BAR (1451 PSI)**

# EXTRA PRESSURE

## INDUCTIVE SENSORS

### KEY ADVANTAGES

- ✓ Pressure resistant up to 100 bar (1451 psi)
- ✓ Mechanically and chemically rugged
- ✓ Impervious: IP 68
- ✓ Gas-tight sensing face
- ✓ Miniature devices

RANGE OVERVIEW	Housing size	Classics	Extra Distance
EXTRA PRESSURE	∅ 3 mm	p. 95	
	M5	p. 95	
	∅ 6.5 mm		p. 95

FAMILY

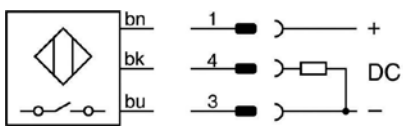
HOUSING SIZE MM

OPERATING DISTANCE MM

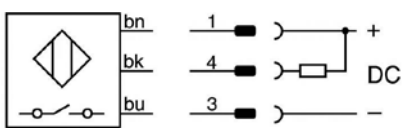
# INDUCTIVE

## WIRING DIAGRAMS

PNP NO



NPN NO



## DATA

Sensing face material

Operating pressure

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

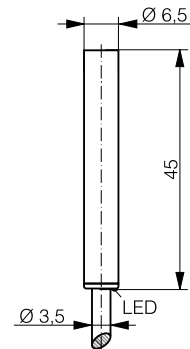
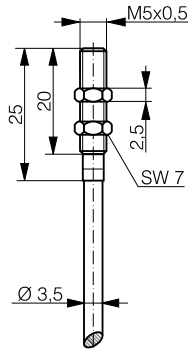
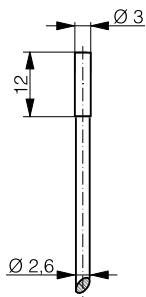
PNP NO

NPN NO

Other types available

# EXTRA PRESSURE

CLASSICS	CLASSICS	EXTRA DISTANCE
Ø 3	M5	Ø 6.5
0.8	0.6	2.5



Ceramic ZrO <sub>2</sub>	Sapphire	Ceramic ZrO <sub>2</sub>
200 bar	20 bar	20 bar
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable	PUR cable
IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable
8000 Hz	5000 Hz	1000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-623-03E-961</b>	<b>DW-AD-603-M5E</b>	<b>DW-AD-503-065E</b>
<b>DW-AD-621-03E-961</b>	<b>DW-AD-601-M5E</b>	<b>DW-AD-501-065E</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

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

# HIGH PRESSURE INDUCTIVE SENSORS

## KEY ADVANTAGES

- ✓ Highest operating (500 bar / 7255 psi) and peak pressure (1000 bar / 14510 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)

RANGE OVERVIEW	Housing size	Extra Distance	Full Inox
<b>HIGH PRESSURE</b>	M5 / P5	p. 99	
	M8 / P8	p. 99	
	M12 / P12	p. 99-101	p. 101
	M14 / P20	p. 101-102	



FAMILY

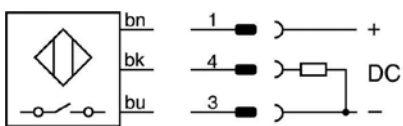
HOUSING SIZE

OPERATING DISTANCE MM

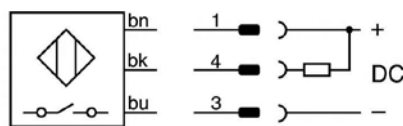
# INDUCTIVE

## WIRING DIAGRAMS

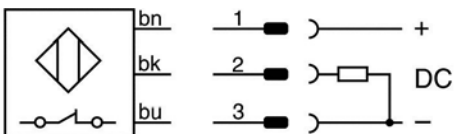
PNP NO



NPN NO



PNP NC



## DATA

Sensing face material

Operating pressure

Peak pressure

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

PNP NO

NPN NO

PNP NO ( $S_n = 1.5$  mm)

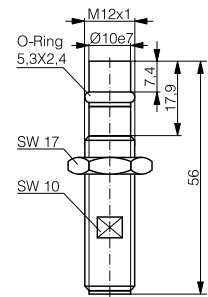
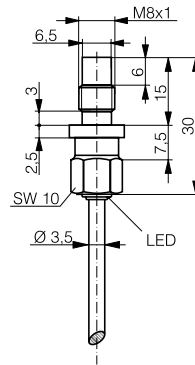
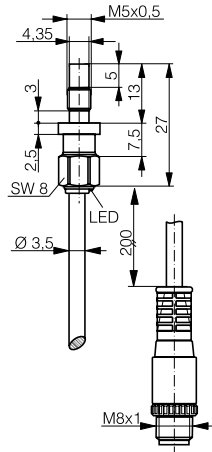
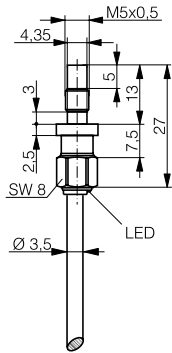
PNP NC ( $S_n = 1.5$  mm)

PNP NO ( $S_n = 2.5$  mm)

Other types available

# HIGH PRESSURE

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M5 (P5)	M5 (P5)	M8 (P8)	M12 (P12)
1	1	1.5	1.5 / 2.5



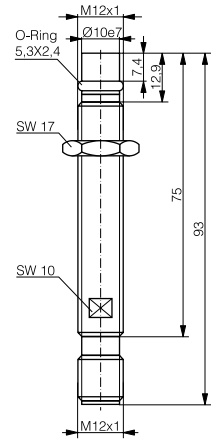
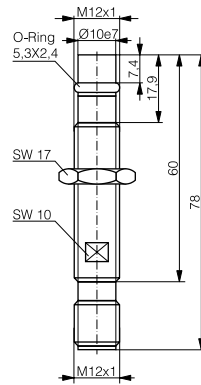
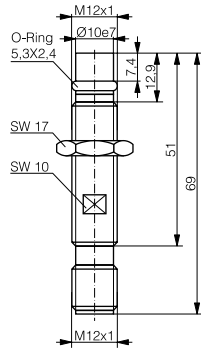
Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
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Accessories
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Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>
500 bar	500 bar	500 bar	500 bar
1000 bar	1000 bar	1000 bar	1000 bar
Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L	Stainless steel V2A
PUR cable	PUR cable / Connector S8	PUR cable	Connector S12
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
1000 Hz	1000 Hz	800 Hz	600 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +80°C / -13 ... +176°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-503-P5</b>	<b>DW-AV-503-P5-276</b>	<b>DW-AD-503-P8</b>	<b>DW-AS-503-P12-630</b>
<b>DW-AD-501-P5</b>	<b>DW-AV-501-P5-276</b>	<b>DW-AD-501-P8</b>	<b>DW-AS-504-P12-630</b>
			<b>DW-AS-523-P12-630</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NO, NPN NC

# HIGH PRESSURE

INDUCTIVE

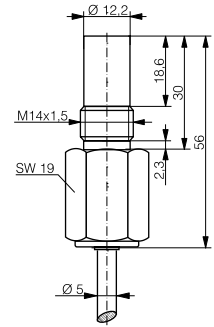
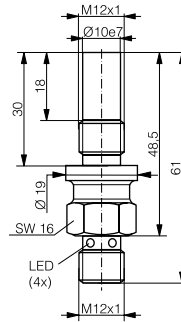
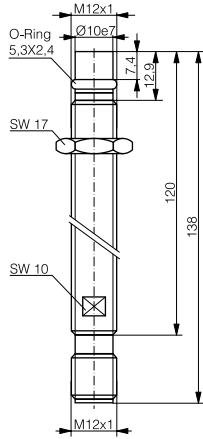
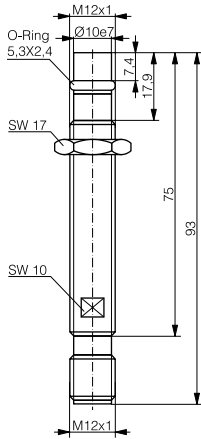
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M12 (P12)	M12 (P12)	M12 (P12)
OPERATING DISTANCE MM	1.5	1.5	1.5



DATA			
Sensing face material	Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>
Operating pressure	500 bar	500 bar	500 bar
Peak pressure	1000 bar	1000 bar	1000 bar
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	Connector S12	Connector S12
Degree of protection	IP 68	IP 68	IP 68
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	600 Hz	600 Hz	600 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +80°C / -13 ... +176°F	-25 ... +80°C / -13 ... +176°F	-25 ... +80°C / -13 ... +176°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-AS-503-P12</b>	<b>DW-AS-503-P12-627</b>	<b>DW-AS-503-P12-621</b>
NPN NO	<b>DW-AS-501-P12</b>	<b>DW-AS-501-P12-627</b>	<b>DW-AS-501-P12-621</b>
Other types available	PNP NC, NPN NC, 2.5 mm operating distance	PNP NC, NPN NC, 2.5 mm operating distance	PNP NC, NPN NC, 2.5 mm operating distance

# HIGH PRESSURE

EXTRA DISTANCE	EXTRA DISTANCE	FULL INOX	EXTRA DISTANCE
M12 (P12)	M12 (P12)	M12 (P12)	M14 (P20)
1.5	1.5	1.5	3



Inductive
Photoelectric
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Ceramic ZrO <sub>2</sub>	Ceramic ZrO <sub>2</sub>	Stainless steel V4A / AISI 316L	Ceramic ZrO <sub>2</sub>
500 bar	500 bar	500 bar	500 bar
1000 bar	1000 bar	800 bar	1000 bar
Stainless steel V2A	Stainless steel V2A	Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L
Connector S12	Connector S12	Connector S12	PUR cable
IP 68	IP 68	IP 68 / IP 69K	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	600 Hz	850 Hz	500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +80°C / -13 ... +176°F	-25 ... +80°C / -13 ... +176°F	-25 ... +85°C / -13 ... +185°F	-25 ... +80°C / -13 ... +176°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-503-P12-635</b>	<b>DW-AS-503-P12-622</b>	<b>DW-LS-703-P12G</b>	<b>DW-AD-503-P20</b>
<b>DW-AS-501-P12-635</b>	<b>DW-AS-501-P12-622</b>	<b>DW-LS-701-P12G</b>	<b>DW-AD-501-P20</b>
PNP NC, NPN NC, 2.5 mm operating distance	PNP NC, NPN NC, 2.5 mm operating distance	PNP NC, NPN NC	PNP NC, NPN NC

# HIGH PRESSURE

FAMILY

EXTRA DISTANCE

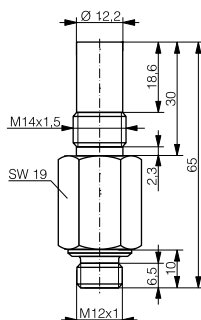
HOUSING SIZE

M14 (P20)

OPERATING DISTANCE MM

3

INDUCTIVE

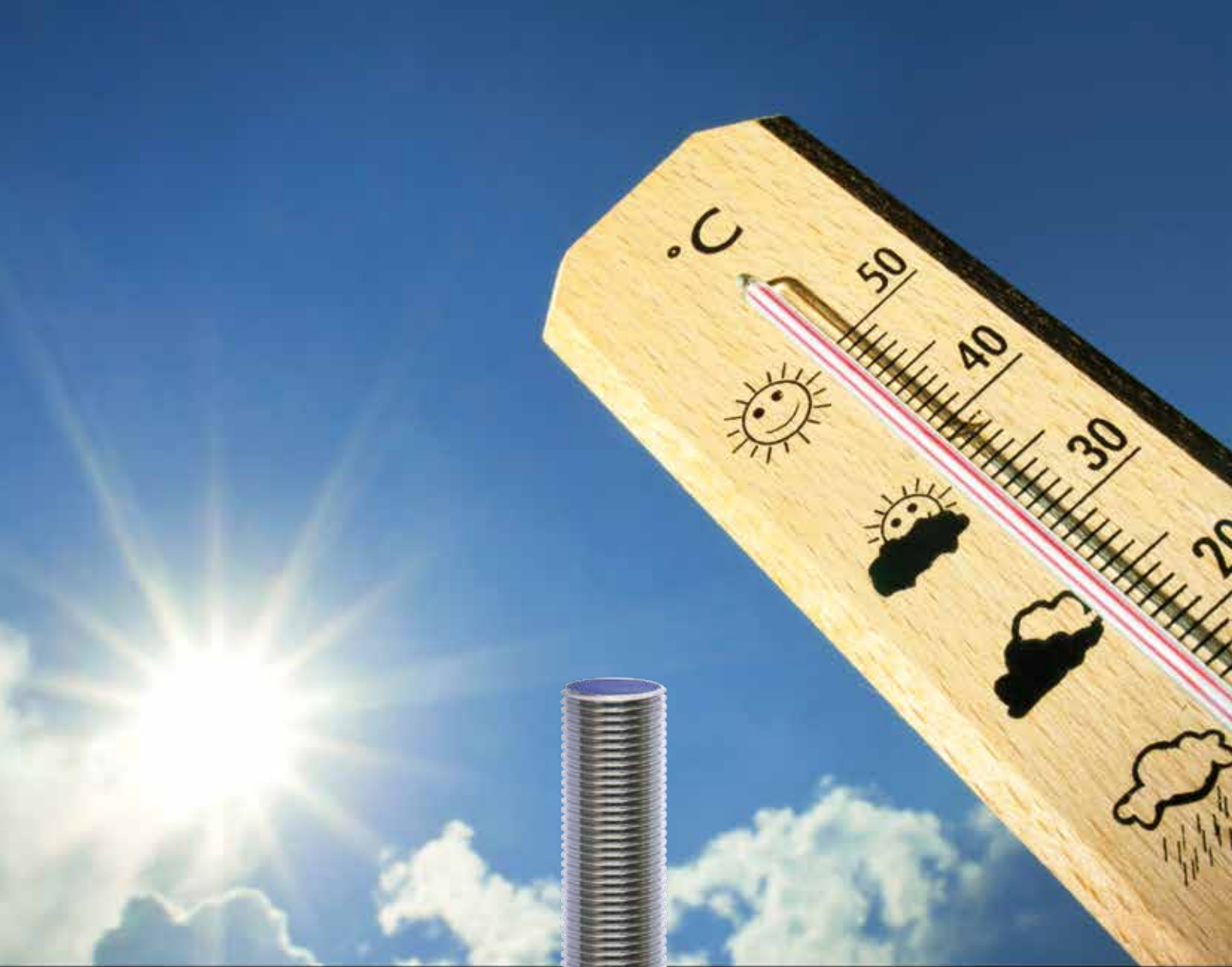


## DATA

Sensing face material	Ceramic ZrO <sub>2</sub>
Operating pressure	500 bar
Peak pressure	1000 bar
Housing material	Stainless steel V4A / AISI 316L
Connection	Connector S12
Degree of protection	IP 68
Mounting	Embeddable
Max. switching frequency	500 Hz
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +80°C / -13 ... +176°F
Output current	≤ 200 mA
PNP NO	<b>DW-AS-503-P20</b>
NPN NO	<b>DW-AS-501-P20</b>
Other types available	PNP NC, NPN NC







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

# EXTRA TEMPERATURE INDUCTIVE SENSORS

## KEY ADVANTAGES

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

RANGE OVERVIEW	Housing size	Classics
EXTRA TEMPERATURE	M5	p. 107
	M8	p. 107
	M12	p. 107
	M18	p. 107

FAMILY

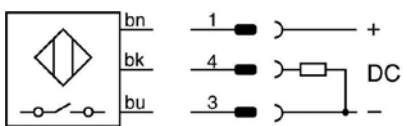
HOUSING SIZE

OPERATING DISTANCE MM

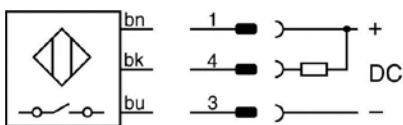
# INDUCTIVE

## WIRING DIAGRAMS

PNP NO



NPN NO



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

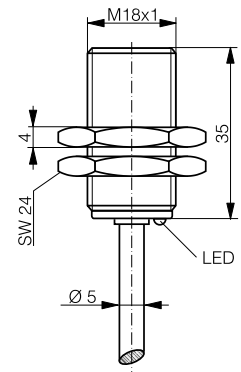
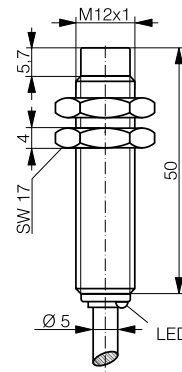
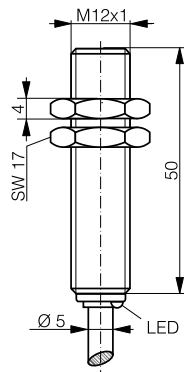
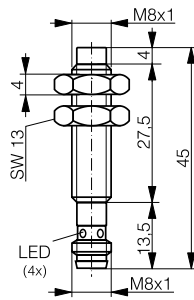
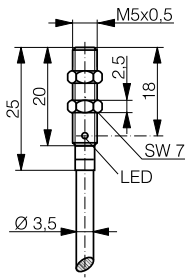
PNP NO

NPN NO

Other types available

# EXTRA TEMPERATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	CLASSICS
M5	M8	M12	M12	M18
0.8	4	2	4	5



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

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Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Silicone cable 2 m	Connector S8	PVC cable 6 m	PVC cable 5 m	PUR cable 2 m
IP 67	IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Embeddable	Non-embeddable	Embeddable
5000 Hz	3500 Hz	3000 Hz	2000 Hz	2000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25...+120°C / -13...+248°F	0...+85°C / +32 ...+185°F	-25...+100°C / -13...+212°F	-25...+100°C / -13...+212°F	-40...+100°C / -40...+212°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AD-603-M5-735</b>	<b>DW-AS-633-M8-732</b>	<b>DW-AD-603-M12-734</b>	<b>DW-AD-613-M12-733</b>	<b>DW-AD-603-M18-718</b>
<b>DW-AD-601-M5-735</b>				





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



# HIGH TEMPERATURE INDUCTIVE SENSORS

## KEY ADVANTAGES

- ✓ Models with external electronics for temperatures of up to +230°C (+446°F)
- ✓ Models with integrated electronics for temperatures of up to +180°C (+356°F)
- ✓ Excellent long term reliability

### RANGE OVERVIEW

### Housing size

### Classics

## HIGH TEMPERATURE

M8	p. 111
M12	p. 111
M18	p. 111
M30	p. 111
M50	p. 112

FAMILY

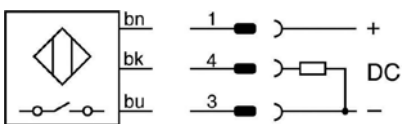
HOUSING SIZE

OPERATING DISTANCE MM

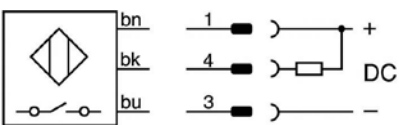
# INDUCTIVE

## WIRING DIAGRAMS

PNP NO



NPN NO



## DATA

Amplifier

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

PNP NO

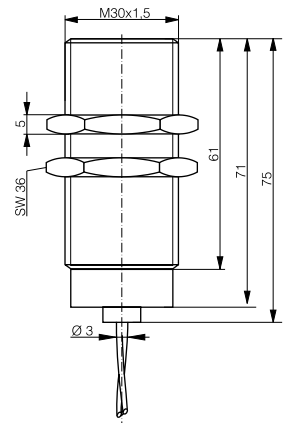
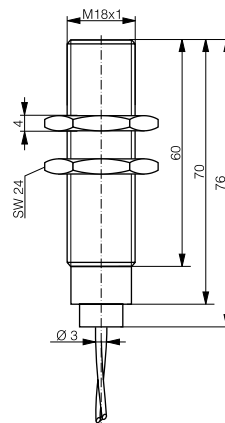
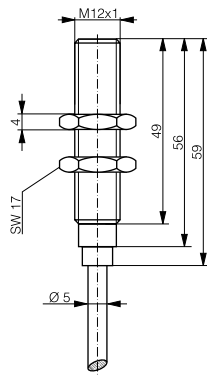
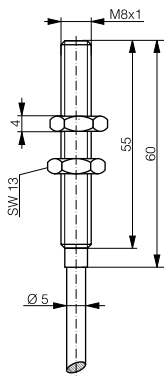
NPN NO

Other types available



# HIGH TEMPERATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M12	M18	M30
2	3	5	10



Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

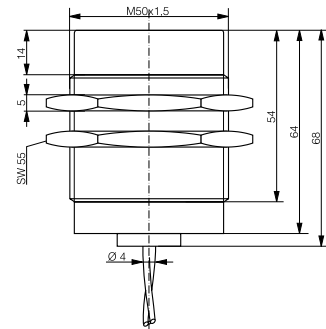
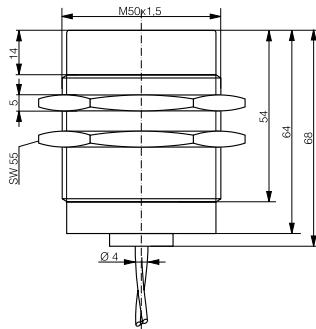
Index

Built-in	Built-in	Built-in	Built-in
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Silicone cable 2 m	Silicone cable 2 m	Teflon cable 2 m	Teflon cable 2 m
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	500 Hz	400 Hz	200 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
0 ... +140°C / +32 ... +280°F	0 ... +150°C / +32 ... +300°F	0 ... +180°C / +32 ... +350°F	0 ... +180°C / +32 ... +350°F
120 mA (≤ 100°C) / 80 mA (> 100°C)	120 mA (≤ 100°C) / 70 mA (> 100°C)	≤ 150 mA	≤ 150 mA
<b>DW-HD-623-M8-100</b>	<b>DW-HD-603-M12-200</b>	<b>DW-HD-603-M18-310</b>	<b>DW-HD-603-M30-310</b>
<b>DW-HD-621-M8-100</b>	<b>DW-HD-601-M12-200</b>	<b>DW-HD-601-M18-310</b>	<b>DW-HD-601-M30-310</b>
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

# HIGH TEMPERATURE

## INDUCTIVE

FAMILY	CLASSICS	CLASSICS
HOUSING SIZE	M50	M50
OPERATING DISTANCE MM	25	25



DATA		
Amplifier	External	External
Housing material	Stainless steel V2A	Stainless steel V2A
Connection	Teflon cable 5 m	Teflon cable 20 m
Degree of protection	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable
Max. switching frequency	150 Hz	150 Hz
Supply voltage range	10 ... 30 VDC (amplifier)	10 ... 30 VDC (amplifier)
Ambient temperature range	-40 ... +230°C / -40 ... +440°F	0 ... +230°C / + 32 ... +440°F
Output current	≤ 200 mA (amplifier)	≤ 200 mA (amplifier)
PNP NO	<b>DW-HD-613-M50-511</b>	<b>DW-HD-613-M50-503</b>
Other types available	For other cable lengths please ask	For other cable lengths please ask





# ECOLAB APPROVED FOR HARSHTEST CLEANING PROCESSES

# WASHDOWN

# INDUCTIVE SENSORS

### KEY ADVANTAGES

- ✓ Corrosion resistant
- ✓ Food safe
- ✓ IP 68 / IP 69K protection
- ✓ IO-Link interface
- ✓ Extremely rugged Full Inox types:  
one-piece stainless-steel housing, factor 1 on steel and  
aluminum, Ecolab approved

RANGE OVERVIEW	Housing size	Classics	Full Inox
WASHDOWN	M12	p. 117	p. 117
	M18		p. 117-118
	M30		p. 118

FAMILY

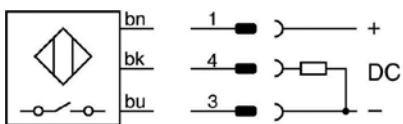
HOUSING SIZE

OPERATING DISTANCE MM

# INDUCTIVE

## WIRING DIAGRAM

PNP NO



DATA

Operating pressure

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range





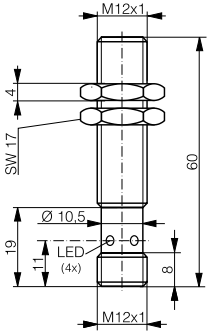
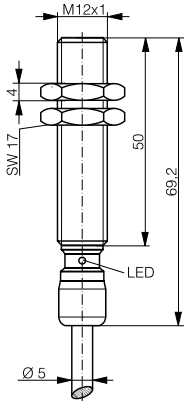
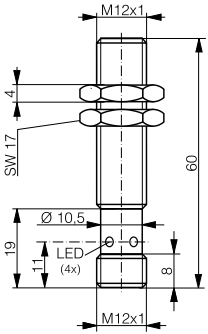
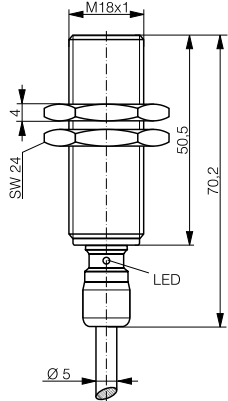
Output current

PNP NO

Other types available



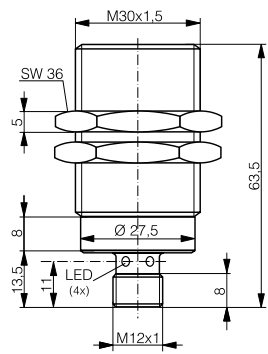
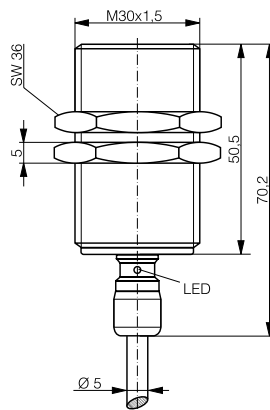
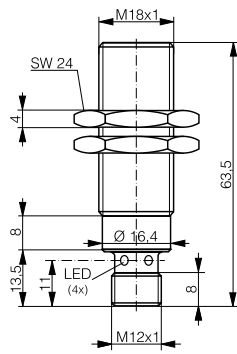
# WASHDOWN

CLASSICS	FULL INOX	FULL INOX	FULL INOX	Inductive
M12	M12	M12	M18	Photoelectric
2	6	6	10	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
-	80 bar	80 bar	60 bar	
PPS/Stainless steel V4A	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	
Connector S12	TPE-S cable	Connector S12	TPE-S cable	
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	
Embeddable	Embeddable	Embeddable	Embeddable	
1700 Hz	600 Hz	600 Hz	300 Hz	
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	
-40 ... +120°C / -40 ... +248°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
<b>DW-LS-603-M12</b>	<b>DW-LD-703-M12</b>	<b>DW-LS-703-M12</b>	<b>DW-LD-703-M18</b>	
	NPN NO, PNP NC, NPN NC, non-embeddable	NPN NO, PNP NC, NPN NC, non-embeddable	NPN NO, PNP NC, NPN NC, non-embeddable	

# WASHDOWN

INDUCTIVE

FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M18	M30	M30
OPERATING DISTANCE MM	10	20	20



DATA			
Operating pressure	60 bar	40 bar	40 bar
Housing material	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connection	Connector S12	TPE-S cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	300 Hz	100 Hz	100 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
PNP NO	<b>DW-LS-703-M18-002</b>	<b>DW-LD-703-M30</b>	<b>DW-LS-703-M30-002</b>
Other types available	NPN NO, PNP NC, NPN NC, non-embeddable	NPN NO, PNP NC, NPN NC, non-embeddable	NPN NO, PNP NC, NPN NC, non-embeddable





# ANALOG OUTPUT FOR DISTANCE CONTROL



## ANALOG OUTPUT

## INDUCTIVE SENSORS

### KEY ADVANTAGES

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

#### RANGE OVERVIEW

#### Housing size

#### Extra Distance

### ANALOG

C8

p. 123

M8

p. 123-124

M12

p. 124-125

M18

p. 125-126

M30

p. 126-127

FAMILY

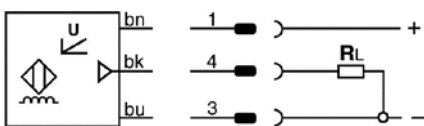
HOUSING SIZE MM

SENSING RANGE MM

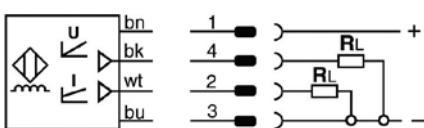
# INDUCTIVE

## WIRING DIAGRAMS

Analog C8/M8



Analog M12/M18/M30



## DATA

Bandwidth (-3 dB)

Output voltage

Housing material

Connection

Degree of protection

Mounting

Supply voltage range

Ambient temperature range

Output current

Output 0...10 V

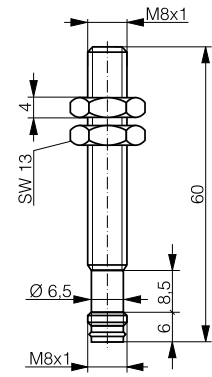
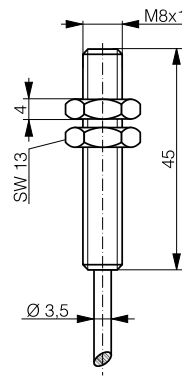
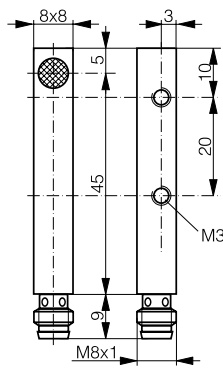
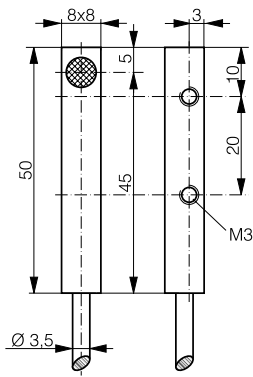
Output 0...5 V

Other types available



# ANALOG OUTPUT

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
□ 8 x 8	□ 8 x 8	M8	M8
0 ... 4	0 ... 4	0 ... 4	0 ... 4



1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)
0 ... 10 V	0 ... 10 V	0 ... 5 V / 0 ... 10 V (-390)	0 ... 10 V
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PUR cable	Connector S8	PUR cable	Connector S8
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
15 ... 30 VDC	15 ... 30 VDC	10 ... 30 VDC / 15 ... 30 VDC (-390)	15 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
-	-	-	-
<b>DW-AD-509-C8-390</b>	<b>DW-AS-509-C8-390</b>	<b>DW-AD-509-M8-390</b>	<b>DW-AS-509-M8-390</b>
		<b>DW-AD-509-M8</b>	
			On request

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

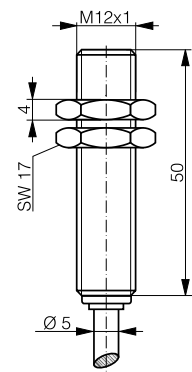
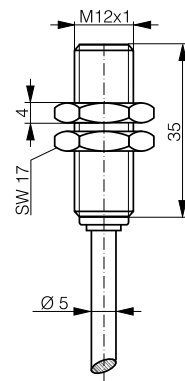
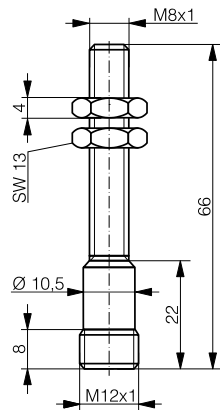
Glossary

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# ANALOG OUTPUT

INDUCTIVE

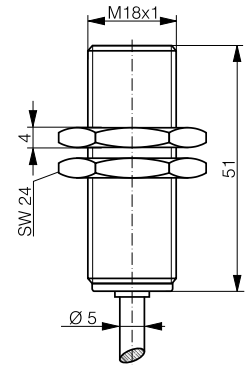
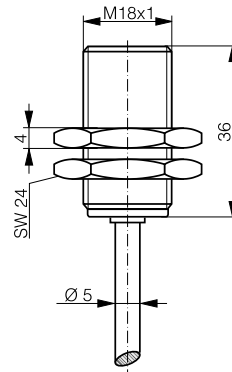
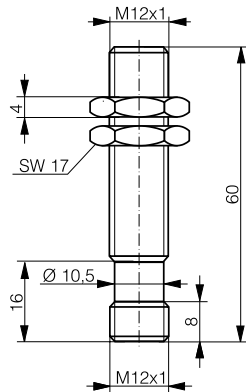
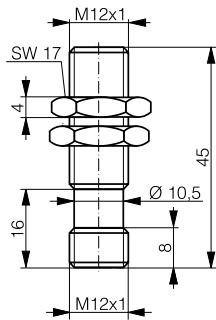
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M8	M12	M12
SENSING RANGE MM	0 ... 4	0 ... 6	0 ... 6



DATA			
Bandwidth (-3 dB)	1,600 Hz (at s = 2 mm)	1,000 Hz (at s = 3 mm)	1,000 Hz (at s = 3 mm)
Output voltage	0 ... 10 V	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PUR cable	PUR cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
Supply voltage range	15 ... 30 VDC	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-390)
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	-	1 ... 5 mA (-120 only)	1 ... 5 mA / 4 ... 20 mA (-390)
Outputs 0...5 V / 1...5 mA		<b>DW-AD-509-M12-120</b>	<b>DW-AD-509-M12</b>
Output 0...10 V	<b>DW-AS-509-M8-393</b>	<b>DW-AD-509-M12-320</b>	
Outputs 0...10 V / 4...20 mA			<b>DW-AD-509-M12-390</b>
Other types available	On request		

# ANALOG OUTPUT

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M12	M12	M18	M18	
0 ... 6	0 ... 6	0 ... 10	0 ... 10	



Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

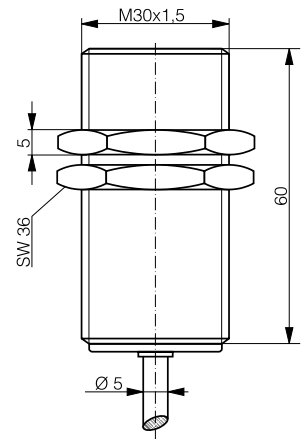
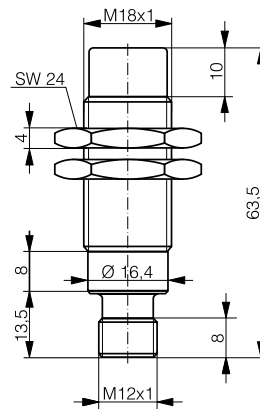
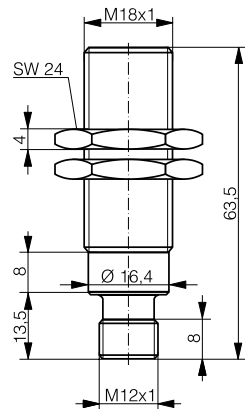
Index

1,000 Hz (at s = 3 mm)	1,000 Hz (at s = 3 mm)	500 Hz (at s = 5 mm)	500 Hz (at s = 5 mm)
0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-390)
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12	PUR cable	PUR cable
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-390)	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-390)
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
1 ... 5 mA (-120 only)	1 ... 5 mA / 4 ... 20 mA (-390)	1 ... 5 mA / 4 ... 20 mA (-320)	1 ... 5 mA / 4 ... 20 mA (-390)
<b>DW-AS-509-M12-120</b>	<b>DW-AS-509-M12</b>	<b>DW-AD-509-M18-120</b>	<b>DW-AD-509-M18</b>
<b>DW-AS-509-M12-320</b>			
	<b>DW-AS-509-M12-390</b>	<b>DW-AD-509-M18-320</b>	<b>DW-AD-509-M18-390</b>
			On request

# ANALOG OUTPUT

INDUCTIVE

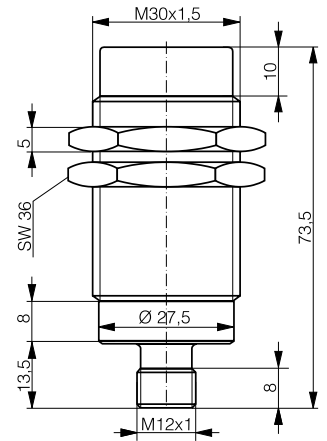
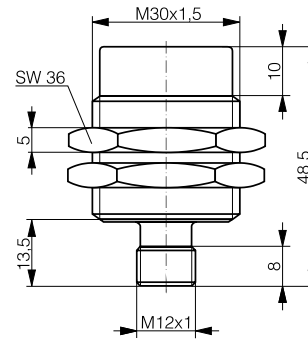
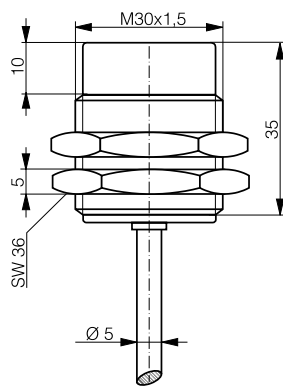
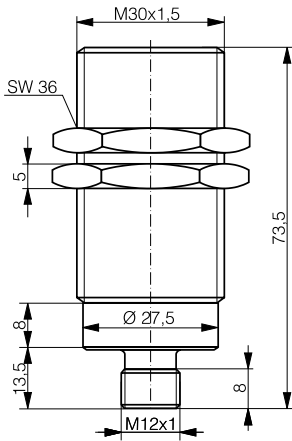
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M18	M18	M30
SENSING RANGE MM	0 ... 10	0 ... 20	0 ... 20



DATA			
Bandwidth (-3 dB)	500 Hz (at s = 5 mm)	250 Hz (at s = 10 mm)	200 Hz (at s = 10 mm)
Output voltage	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector S12	PUR cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Quasi-embeddable	Non-embeddable	Quasi-embeddable
Supply voltage range	10 ... 30 / 15 ... 30 VDC (-390)	10 ... 30 / 15 ... 30 VDC (-390)	10 ... 30 / 15 ... 30 VDC (-390)
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	1 ... 5 mA / 4 ... 20 mA (-390)	1 ... 5 mA / 4 ... 20 mA (-390)	1 ... 5 mA / 4 ... 20 mA (-390)
Outputs 0...5 V / 1...5 mA	<b>DW-AS-509-M18-002</b>	<b>DW-AS-519-M18-002</b>	<b>DW-AD-509-M30</b>
Outputs 0...10 V / 4...20 mA	<b>DW-AS-509-M18-390</b>	<b>DW-AS-519-M18-390</b>	<b>DW-AD-509-M30-390</b>
Other types available	On request	On request	On request

# ANALOG OUTPUT

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M30	M30	M30	M30
0 ... 20	0 ... 40	0 ... 40	0 ... 40



200 Hz (at s = 10 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)
0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-390)
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PUR cable	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
10 ... 30 / 15 ... 30 VDC (-390)	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-390)
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
1 ... 5 mA / 4 ... 20 mA (-390)	1 ... 5 mA / 4 ... 20 mA (-320)	1 ... 5 mA / 4 ... 20 mA (-320)	1 ... 5 mA / 4 ... 20 mA (-390)
<b>DW-AS-509-M30-002</b>	<b>DW-AD-519-M30-120</b>	<b>DW-AS-519-M30-120</b>	<b>DW-AS-519-M30-002</b>
<b>DW-AS-509-M30-390</b>	<b>DW-AD-519-M30-320</b>	<b>DW-AS-519-M30-320</b>	<b>DW-AS-519-M30-390</b>
On request	On request	On request	On request

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

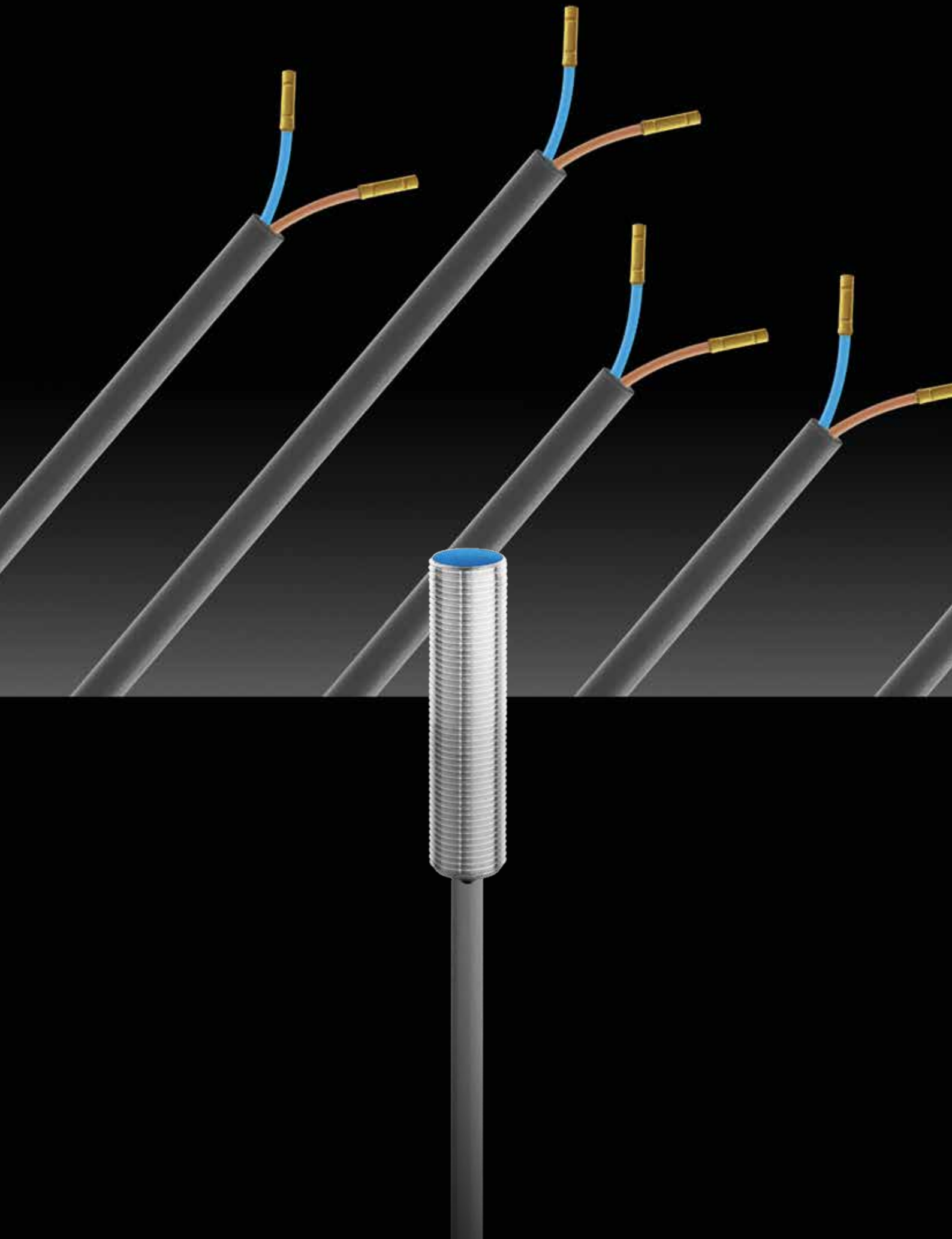
RFID

Connectivity

Accessories

Glossary

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EASY INSTALLATION AND HIGH  
SWITCHING FREQUENCY

# 2-WIRE

## INDUCTIVE SENSORS



### KEY ADVANTAGES

- ✓ Two-wire sensors for series connection
- ✓ DC and AC/DC types
- ✓ NAMUR types with switching frequencies up to 10,000 Hz
- ✓ Sizes from Ø 3 mm to M18 and 5 x 5 mm

RANGE OVERVIEW	Housing size	Classics
2-WIRE	Ø 3 mm	p. 131
	M4	p. 131
	Ø 4 mm	p. 132
	M5	p. 133
	C5	p. 133
	Ø 6.5 mm	p. 134, 140
	M8	p. 134-135, 141-143
	M12	p. 135-136, 144-149
	M18	p. 136-137, 149-153
	M30	p. 137-138, 154-157

FAMILY

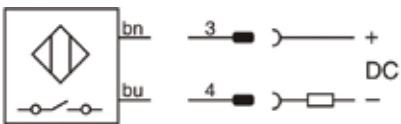
HOUSING SIZE

OPERATING DISTANCE MM

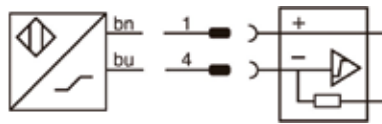
INDUCTIVE

## WIRING DIAGRAMS

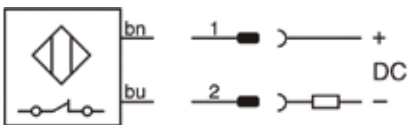
2-wire DC NO



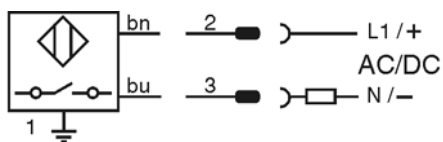
NAMUR



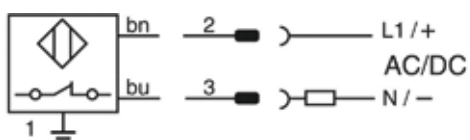
2-wire DC NC



2-wire AC/DC NO



2-wire AC/DC NC



## DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range





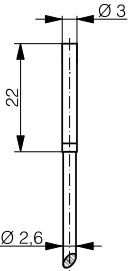
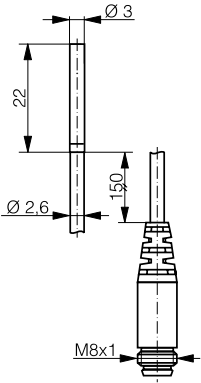
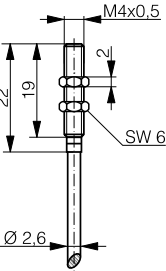
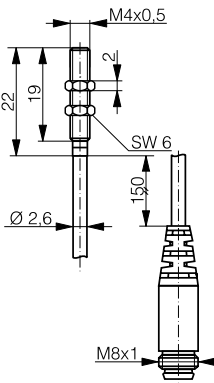
Output current

NAMUR

Other types available

\* damped / non-damped

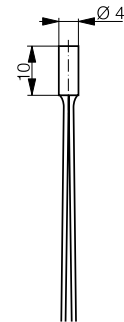
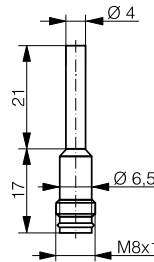
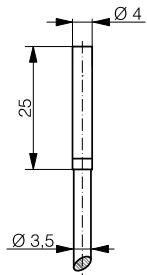
# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 3	Ø 3	M4	M4	
0.6	0.6	0.6	0.6	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Glossary
PUR cable	PUR cable / Connector S8	PUR cable	PUR cable / Connector S8	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	
10,000 Hz	10,000 Hz	10,000 Hz	10,000 Hz	
7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	Index
<b>DW-AD-605-03</b>	<b>DW-AS-605-03</b>	<b>DW-AD-605-M4</b>	<b>DW-AS-605-M4</b>	

# 2-WIRE

## INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 4	Ø 4	Ø 4
OPERATING DISTANCE MM	0.8	0.8	0.8



**NAMUR**

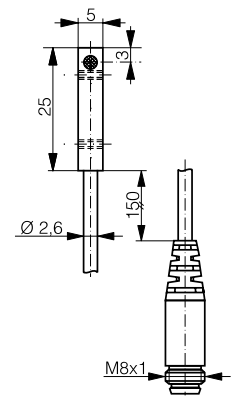
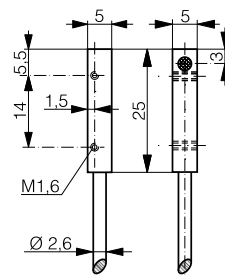
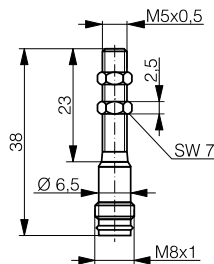
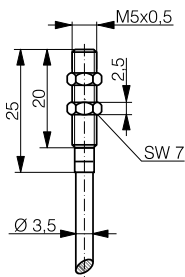
**NAMUR**

**NAMUR**

DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	Connector S8	Single wires
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	10,000 Hz	10,000 Hz	10,000 Hz
Supply voltage range	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
NAMUR	<b>DW-AD-605-04</b>	<b>DW-AS-605-04</b>	<b>DW-AD-605-04K</b>
Other types available			
* damped / non-damped			

# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M5	M5	5 x 5	5 x 5
0.8	0.8	0.8	0.8



**NAMUR**

**NAMUR**

**NAMUR**

**NAMUR**

Stainless steel V2A	Stainless steel V2A	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S8	PUR cable	PUR cable / Connector S8
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
10,000 Hz	10,000 Hz	10,000 Hz	10,000 Hz
7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
<b>DW-AD-605-M5</b>	<b>DW-AS-605-M5</b>	<b>DW-AD-605-C5</b>	<b>DW-AS-605-C5</b>

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

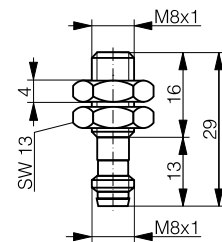
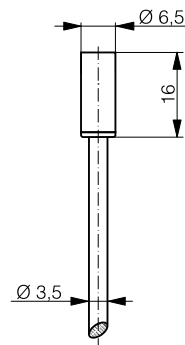
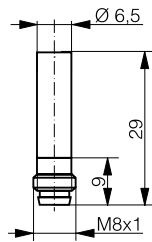
Glossary

Index

# 2-WIRE

INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 6.5	Ø 6.5	M8
OPERATING DISTANCE MM	1.5	1.5	1.5



**NAMUR**

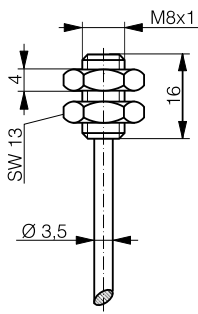
**NAMUR**

**NAMUR**

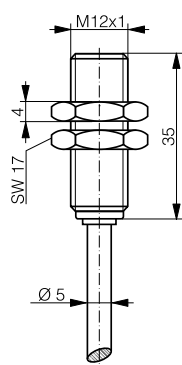
DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	10,000 Hz	10,000 Hz	10,000 Hz
Supply voltage range	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
NAMUR	<b>DW-AS-605-065-129</b>	<b>DW-AD-605-065-120</b>	<b>DW-AS-605-M8-129</b>
Other types available			
* damped / non-damped			

# 2-WIRE

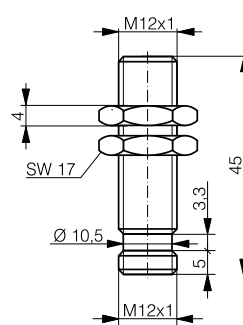
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M12	M12	M12
1.5	2	2	2



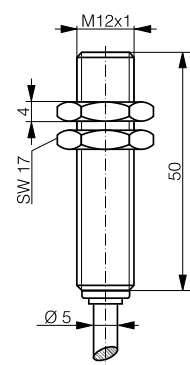
**NAMUR**



**NAMUR**



**NAMUR**



**NAMUR**

Stainless steel V2A	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	Connector S12	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
10,000 Hz	2500 Hz	2500 Hz	2500 Hz
7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
<b>DW-AD-605-M8-120</b>	<b>DW-AD-605-M12-120</b>	<b>DW-AS-605-M12-120</b>	<b>DW-AD-605-M12</b>

- Inductive
- Photoelectric
- Ultrasonic
- Capacitive
- Safety
- RFID
- Connectivity
- Accessories
- Glossary
- Index



# 2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

M12

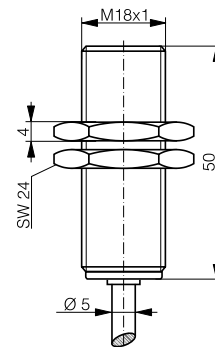
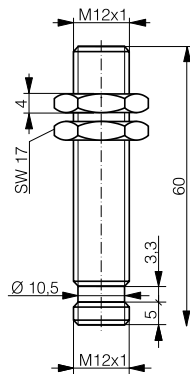
M18

OPERATING DISTANCE MM

2

5

INDUCTIVE







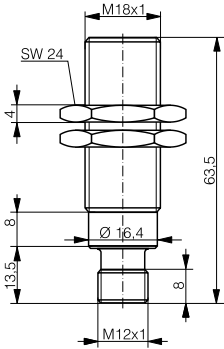
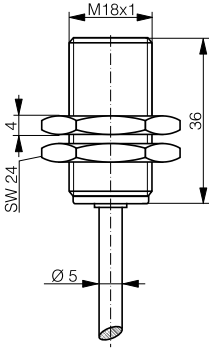
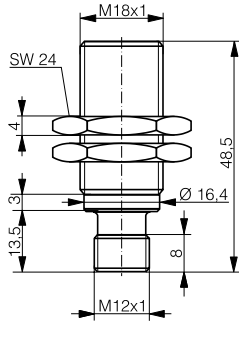
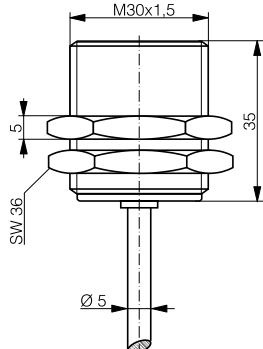
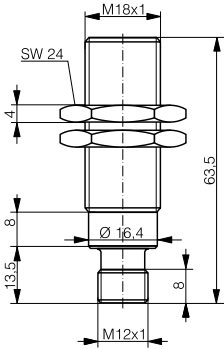
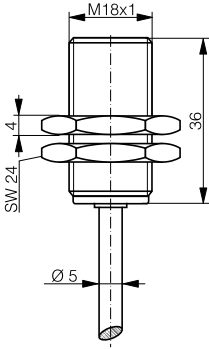
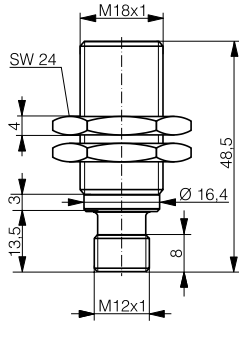
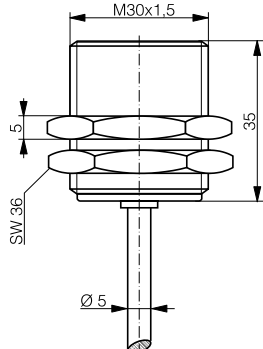
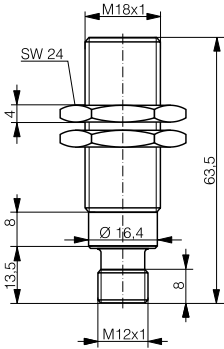
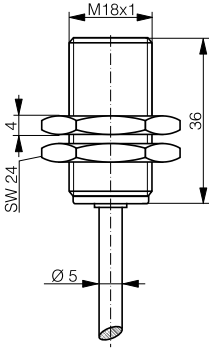
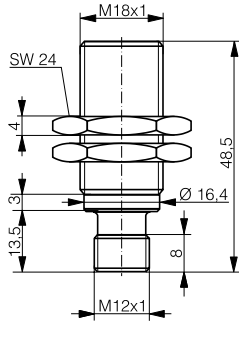
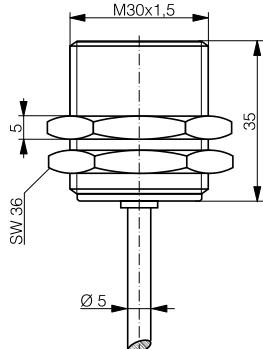
**NAMUR**

**NAMUR**

**DATA**

Housing material	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	2500 Hz	10,000 Hz
Supply voltage range	7.7 ... 9 VDC	7.7 ... 9 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
NAMUR	<b>DW-AS-605-M12</b>	<b>DW-AD-605-M18</b>
Other types available		
* damped / non-damped		

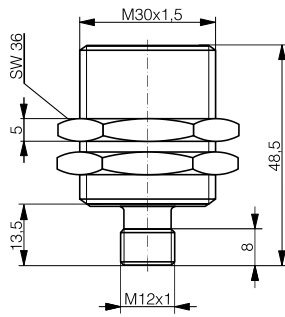
# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M18	M18	M18	M30	
5	5	5	10	Photoelectric
				
				Capacitive
<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	
				RFID
<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	<b>NAMUR</b>	
				Accessories
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	
Connector S12	PVC cable	Connector S12	PVC cable	Index
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	
1000 Hz	1000 Hz	1000 Hz	400 Hz	
7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	
<b>DW-AS-605-M18-002</b>	<b>DW-AD-605-M18-120</b>	<b>DW-AS-605-M18-120</b>	<b>DW-AD-605-M30-120</b>	

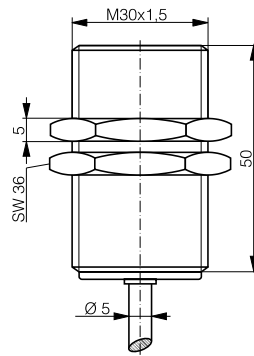
# 2-WIRE

INDUCTIVE

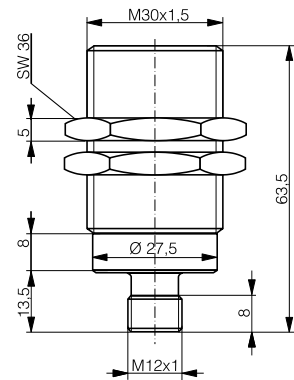
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30	M30
OPERATING DISTANCE MM	10	10	10



**NAMUR**



**NAMUR**



**NAMUR**

DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	400 Hz	400 Hz	400 Hz
Supply voltage range	7.7 ... 9 VDC	7.7 ... 9 VDC	7.7 ... 9 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
NAMUR	<b>DW-AS-605-M30-120</b>	<b>DW-AD-605-M30</b>	<b>DW-AS-605-M30-002</b>
Other types available			
* damped / non-damped			



CONTRINEX

CONTRINEX  
DW-AS-612

CONTRINEX  
SX-1120  
Pnp  
PSOP

CONTRINEX  
IS-009-1412

CONTRINEX  
D40-35  
Pnp  
PSOP

# 2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 6.5

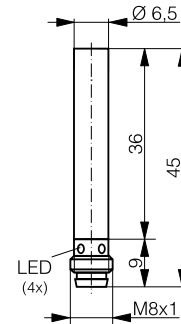
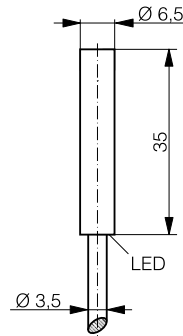
Ø 6.5

OPERATING DISTANCE MM

1.5

1.5

INDUCTIVE

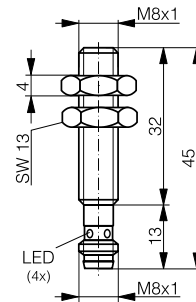
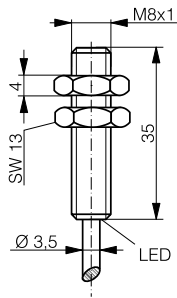


## DATA

Housing material	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	Connector S8
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	100 mA	100 mA
DC 2-wire NO	<b>DW-DD-605-065</b>	<b>DW-DS-605-065</b>
DC 2-wire NC	DW-DD-606-065	DW-DS-606-065
Other types available		

# 2-WIRE

CLASSICS	CLASSICS
M8	M8
1.5	1.5



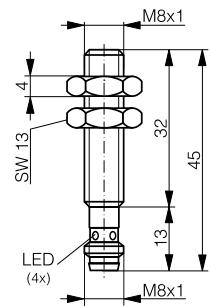
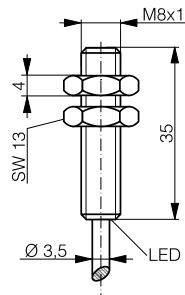
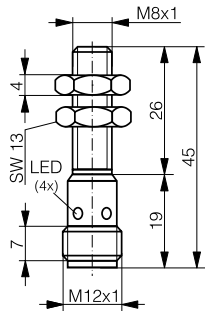
Stainless steel V2A	Stainless steel V2A
PVC cable	Connector S8
IP 67	IP 67
Embeddable	Embeddable
5000 Hz	5000 Hz
10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA
<b>DW-DD-605-M8</b>	<b>DW-DS-605-M8-001</b>
DW-DD-606-M8	DW-DS-606-M8-001

- Inductive
- Photoelectric
- Ultrasonic
- Capacitive
- Safety
- RFID
- Connectivity
- Accessories
- Glossary
- Index

# 2-WIRE

## INDUCTIVE





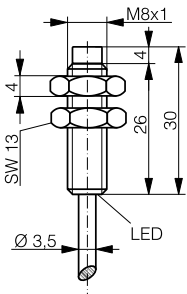
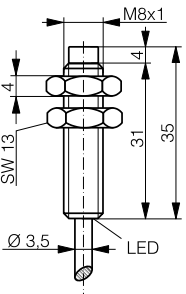
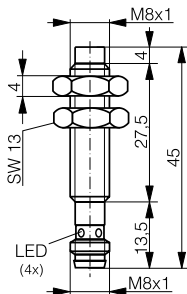
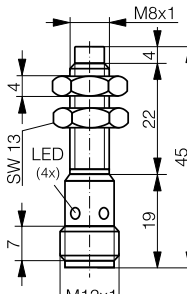
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M8	M8	M8
OPERATING DISTANCE MM	1.5	2	2



DATA			
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 100 mA
DC 2-wire NO	<b>DW-DS-605-M8</b>	<b>DW-DD-625-M8</b>	<b>DW-DS-625-M8-001</b>
DC 2-wire NC	DW-DS-606-M8	DW-DD-626-M8	DW-DS-626-M8-001
Other types available			



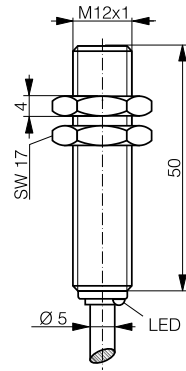
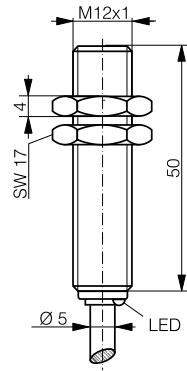
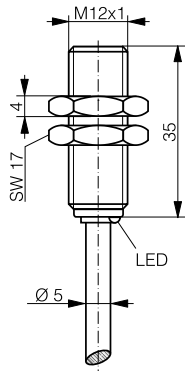
# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive	
M8	M8	M8	M8		
2.5	2.5	2.5	2.5		
				Photoelectric	
					Ultrasonic
				Safety	
					RFID
				Accessories	
					Glossary
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A		
PVC cable	PVC cable	Connector S8	Connector S12		
IP 67	IP 67	IP 67	IP 67		
Non-embeddable	Non-embeddable	Non-embeddable	Non-embeddable		
5000 Hz	5000 Hz	5000 Hz	5000 Hz		
10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC		
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F		
≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA		
<b>DW-DD-615-M8-122</b>	<b>DW-DD-615-M8</b>	<b>DW-DS-615-M8-001</b>	<b>DW-DS-615-M8</b>		
DW-DD-616-M8-122	DW-DD-616-M8	DW-DS-616-M8-001	DW-DS-616-M8		

# 2-WIRE






























































































































































































































































## INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	2	2	2



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	3000 Hz	3000 Hz	25 Hz (AC) / 3000 Hz (DC)
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 200 mA
DC 2-wire NO	<b>DW-DD-605-M12-120</b>	<b>DW-DD-605-M12</b>	
DC 2-wire NC	DW-DD-606-M12-120	DW-DD-605-M12	
AC/DC 2-wire NO			<b>DW-AD-607-M12</b>
AC/DC 2-wire NC			DW-AD-608-M12
Other types available			

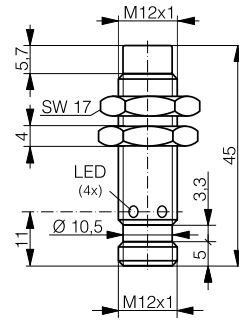
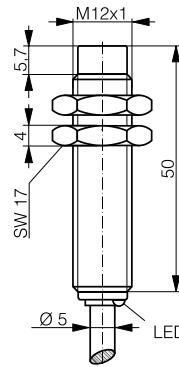
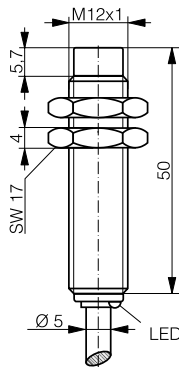
# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M12	M12	M12	
2	2	2	4	Photoelectric
				
				Capacitive
				
				RFID
				
				Accessories
				
				Index
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				

# 2-WIRE





## INDUCTIVE

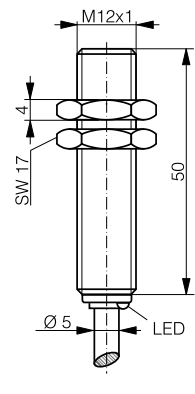
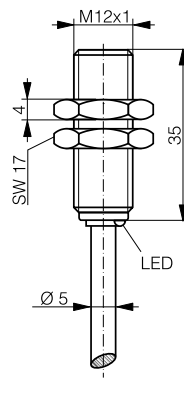
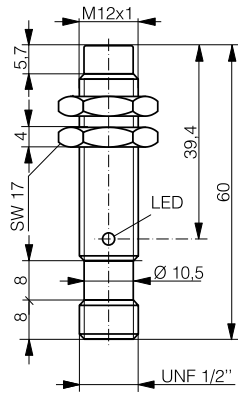
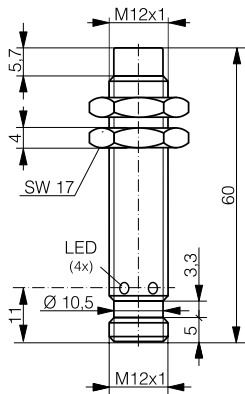
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	4	4	4



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	2500 Hz	25 Hz (AC) / 2000 Hz (DC)	2500 Hz
Supply voltage range	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 200 mA	≤ 100 mA
DC 2-wire NO	<b>DW-DD-615-M12</b>		<b>DW-DS-615-M12-120</b>
DC 2-wire NC	DW-DD-616-M12		DW-DS-616-M12-120
AC/DC 2-wire NO		<b>DW-AD-617-M12</b>	
AC/DC 2-wire NC		DW-AD-618-M12	
Other types available			

# 2-WIRE

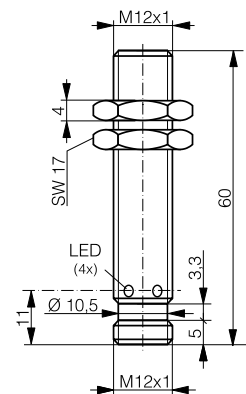
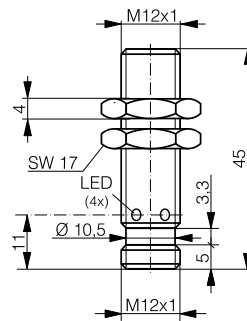
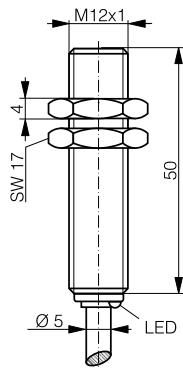
CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M12	M12	M12	
4	4	4	4	Photoelectric
				
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
				Glossary
				Index
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	
Connector S12	Connector 1/2"	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Non-embeddable	Non-embeddable	Embeddable	Embeddable	
2000 Hz	25 Hz (AC) / 2000 Hz (DC)	2000 Hz	2000 Hz	
10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC	10 ... 65 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 100 mA	≤ 200 mA	≤ 100 mA	≤ 100 mA	
<b>DW-DS-615-M12</b>	<b>DW-AS-617-M12-069</b>	<b>DW-DD-625-M12-120</b>	<b>DW-DD-625-M12</b>	
DW-DS-616-M12	DW-AS-618-M12-069	DW-DD-626-M12-120	DW-DD-626-M12	



# 2-WIRE





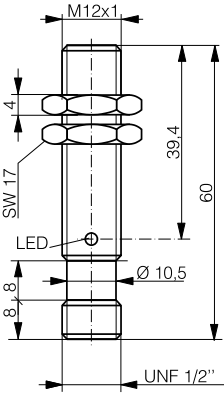
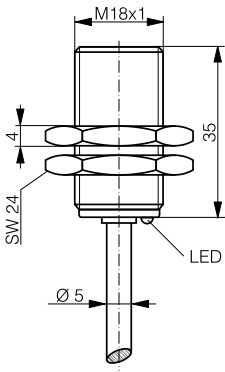
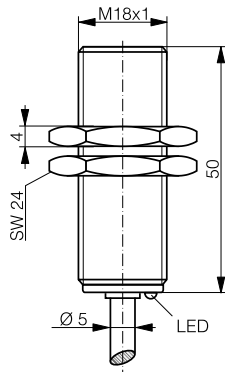
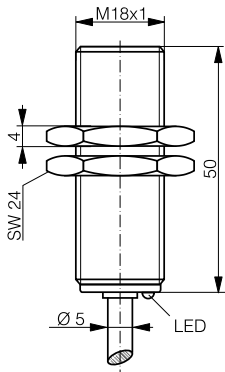
## INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	4	4	4



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	25 Hz (AC) / 2000 Hz (DC)	2000 Hz	2000 Hz
Supply voltage range	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 200 mA	≤ 100 mA	≤ 100 mA
DC 2-wire NO		<b>DW-DS-625-M12-120</b>	<b>DW-DS-625-M12</b>
DC 2-wire NC		DW-DS-626-M12-120	DW-DS-626-M12
AC/DC 2-wire NO	<b>DW-AD-627-M12</b>		
AC/DC 2-wire NC	DW-AD-628-M12		
Other types available			

# 2-WIRE

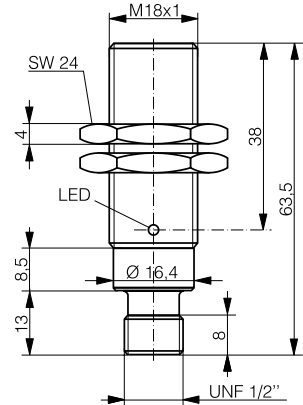
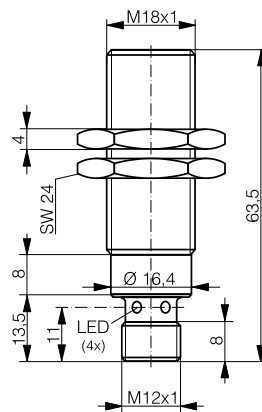
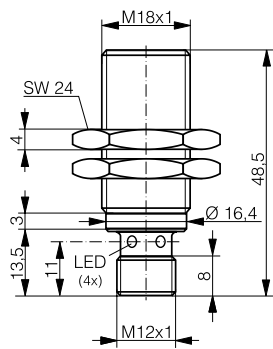
CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M18	M18	M18	
4	5	5	5	Photoelectric
				
				Safety
				Connectivity
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	
Connector 1/2"	PVC cable	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	
25 Hz (AC) / 2000 Hz (DC)	1500 Hz	1500 Hz	25 Hz (AC) / 1500 Hz (DC)	Glossary
20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	
≤ 200 mA	≤ 100 mA	≤ 100 mA	≤ 200 mA	Index
<b>DW-AS-627-M12-069</b>	<b>DW-DD-605-M18-120</b>	<b>DW-DD-605-M18</b>	<b>DW-AD-607-M18</b>	
DW-AS-628-M12-069	DW-DD-606-M18-120	DW-DD-606-M18	DW-AD-608-M18	



# 2-WIRE

## INDUCTIVE

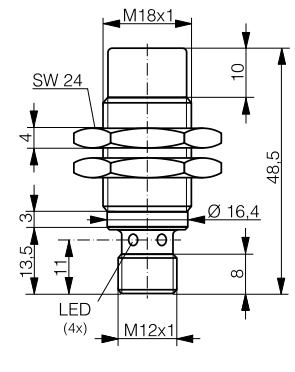
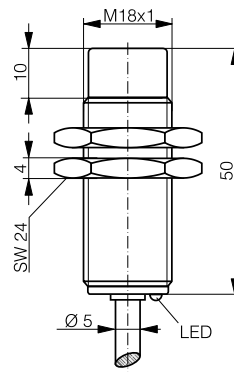
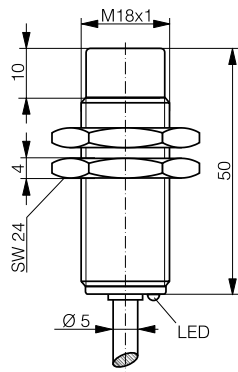
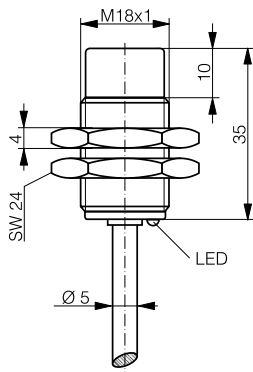
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M18	M18	M18
OPERATING DISTANCE MM	5	5	5



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector S12	Connector 1/2"
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1500 Hz	1500 Hz	25 Hz (AC) / 1500 Hz (DC)
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 200 mA
DC 2-wire NO	<b>DW-DS-605-M18-120</b>	<b>DW-DS-605-M18-002</b>	<b>DW-AS-607-M18-069</b>
DC 2-wire NC	DW-DS-606-M18-120	DW-DS-606-M18-002	DW-AS-608-M18-069
AC/DC 2-wire NO			
AC/DC 2-wire NC			
Other types available			

# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M18	M18	M18	M18
8	8	8	8



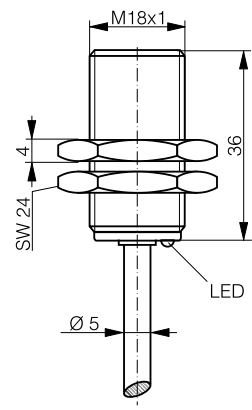
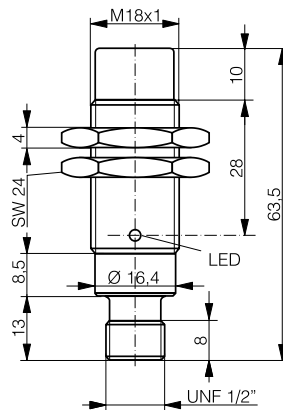
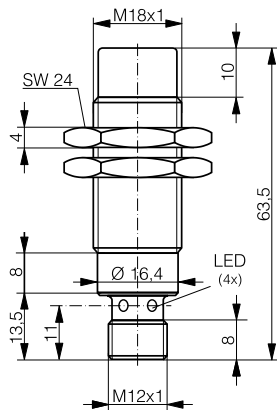
Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
Connectivity
Accessories
Glossary
Index

Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
1200 Hz	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	1200 Hz
10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 200 mA	≤ 100 mA
<b>DW-DD-615-M18-120</b>	<b>DW-DD-615-M18</b>	<b>DW-AD-617-M18</b>	<b>DW-DS-615-M18-120</b>
DW-DD-616-M18-120	DW-DD-616-M18	DW-AD-618-M18	DW-DS-616-M18-120

# 2-WIRE

## INDUCTIVE

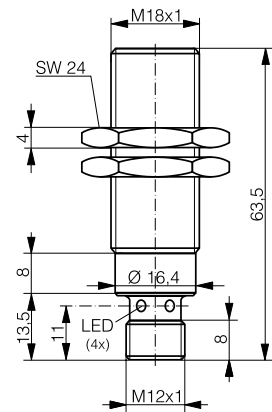
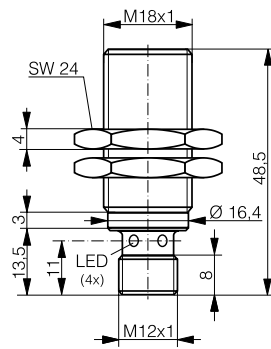
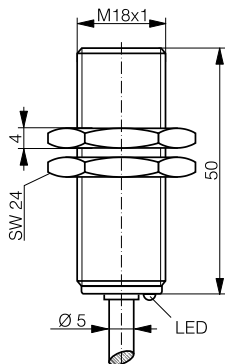
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M18	M18	M18
OPERATING DISTANCE MM	8	8	8



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector 1/2"	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Quasi-embeddable
Max. switching frequency	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	1000 Hz
Supply voltage range	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 200 mA	≤ 100 mA
DC 2-wire NO	<b>DW-DS-615-M18-002</b>		<b>DW-DD-625-M18-120</b>
DC 2-wire NC	DW-DS-616-M18-002		DW-DD-626-M18-120
AC/DC 2-wire NO		<b>DW-AS-617-M18-069</b>	
AC/DC 2-wire NC		DW-AS-618-M18-069	
Other types available			

# 2-WIRE

CLASSICS	CLASSICS	CLASSICS
M18	M18	M18
8	8	8



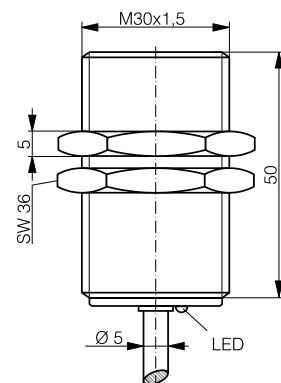
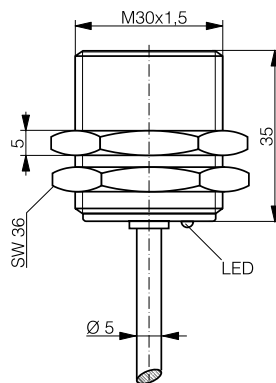
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12
IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
1000 Hz	1000 Hz	1000 Hz
10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 100 mA
<b>DW-DD-625-M18</b>	<b>DW-DS-625-M18-120</b>	<b>DW-DS-625-M18-002</b>
DW-DD-626-M18	DW-DS-626-M18-120	DW-DS-626-M18-002

Inductive
Photoelectric
Ultrasonic
Capacitive
Safety
RFID
Connectivity
Accessories
Glossary
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# 2-WIRE

## INDUCTIVE

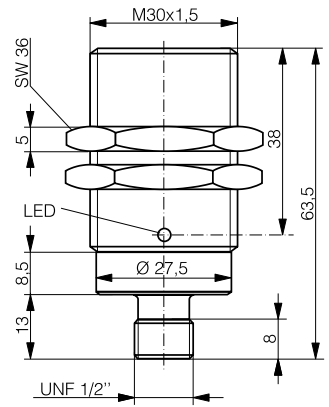
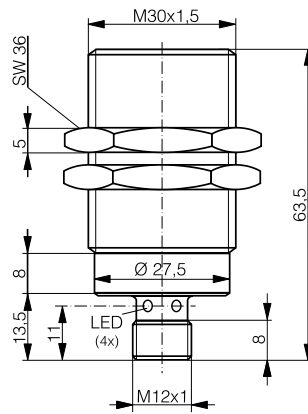
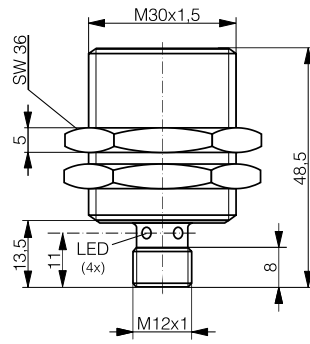
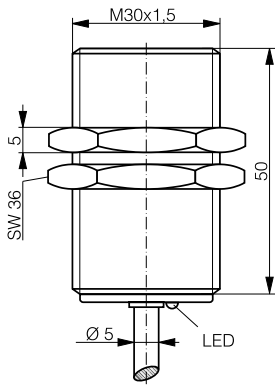
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30
OPERATING DISTANCE MM	10	10



DATA		
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	600 Hz	600 Hz
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA
DC 2-wire NO	<b>DW-DD-605-M30-120</b>	<b>DW-DD-605-M30</b>
DC 2-wire NC	DW-DD-606-M30-120	DW-DD-606-M30
AC/DC 2-wire NO		
AC/DC 2-wire NC		
Other types available		

# 2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M30	M30	M30	M30
10	10	10	10



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12	Connector 1/2"
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
25 Hz (AC) / 600 Hz (DC)	600 Hz	600 Hz	25 Hz (AC) / 600 Hz (DC)
20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 100 mA	≤ 100 mA	≤ 200 mA
<b>DW-AD-607-M30</b>	<b>DW-DS-605-M30-120</b>	<b>DW-DS-605-M30-002</b>	<b>DW-AS-607-M30-069</b>
DW-AD-608-M30	DW-DS-606-M30-120	DW-DS-606-M30-002	DW-AS-608-M30-069

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

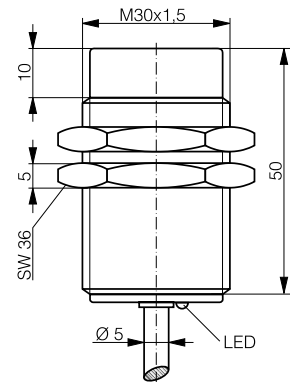
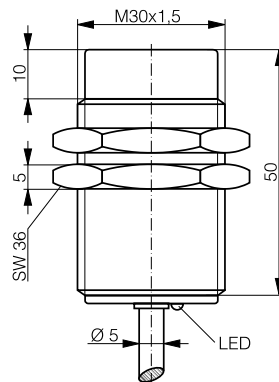
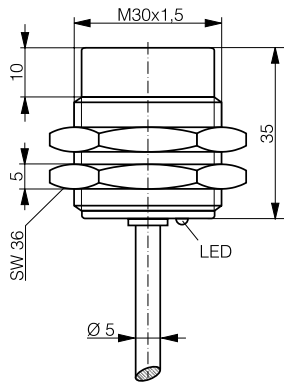
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# 2-WIRE

## INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30	M30
OPERATING DISTANCE MM	15	15	15

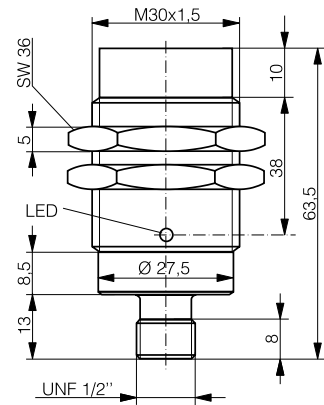
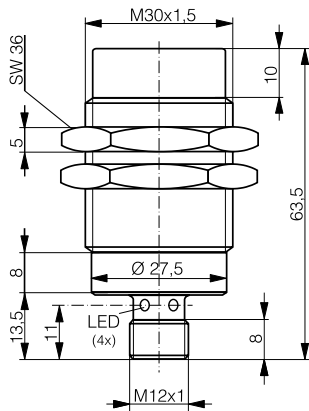
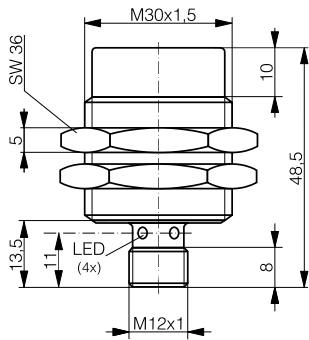


DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	500 Hz	500 Hz	25 Hz (AC) / 500 Hz (DC)
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 200 mA
DC 2-wire NO	<b>DW-DD-615-M30-120</b>	<b>DW-DD-615-M30</b>	<b>DW-AD-617-M30</b>
DC 2-wire NC	DW-DD-616-M30-120	DW-DD-616-M30	DW-AD-618-M30
AC/DC 2-wire NO			<b>DW-AD-617-M30</b>
AC/DC 2-wire NC			DW-AD-618-M30
Other types available			



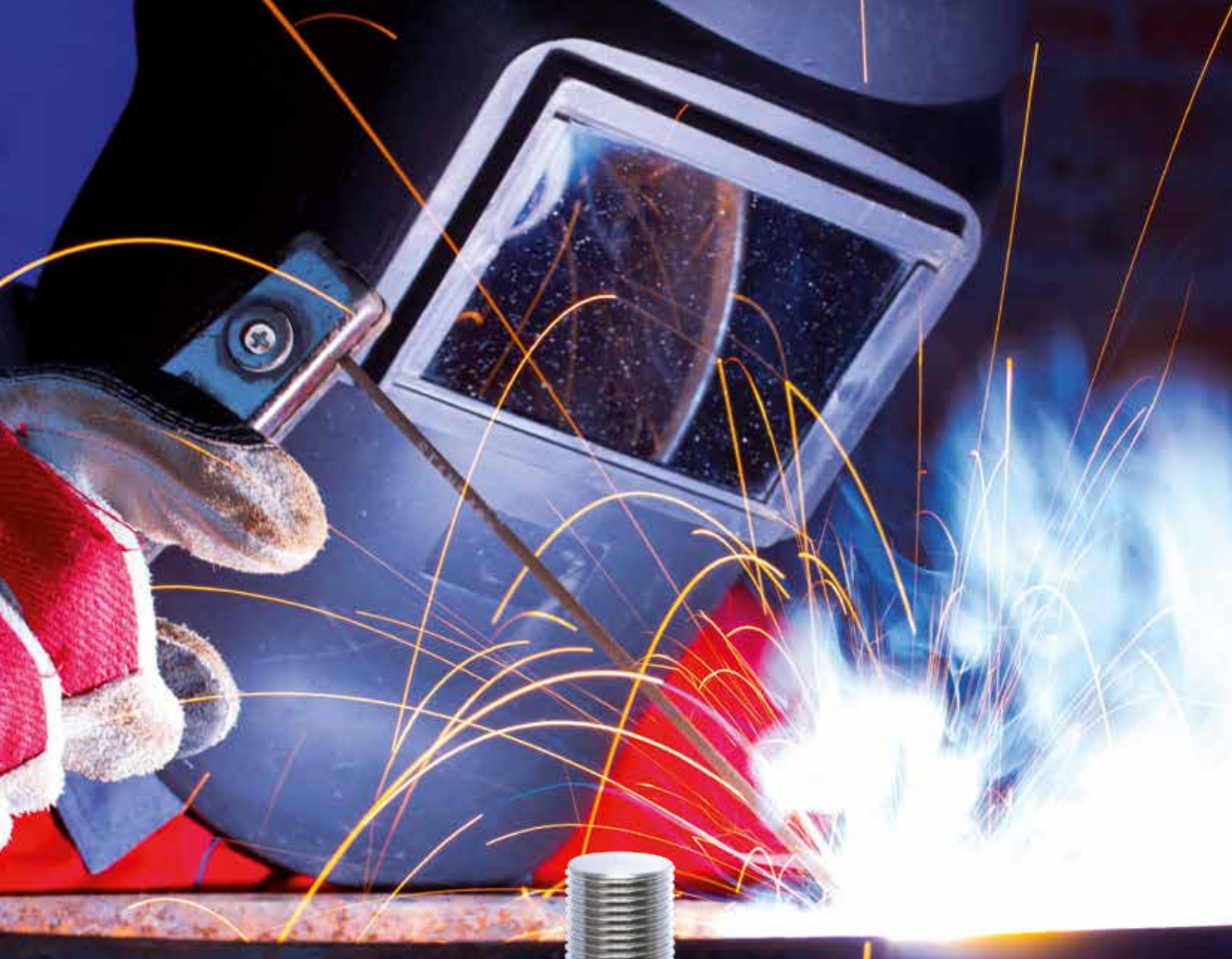
# 2-WIRE

CLASSICS	CLASSICS	CLASSICS
M30	M30	M30
15	15	15



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12	Connector 1/2"
IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable
500 Hz	500 Hz	25 Hz (AC) / 500 Hz (DC)
10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 200 mA
<b>DW-DS-615-M30-120</b>	<b>DW-DS-615-M30-002</b>	<b>DW-AS-617-M30-069</b>
DW-DS-616-M30-120	DW-DS-616-M30-002	DW-AS-618-M30-069

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DURABLE AND RELIABLE IN WELDING CELLS



# WELD- IMMUNE

## INDUCTIVE SENSORS

### KEY ADVANTAGES

- ✓ Resistant to electromagnetic fields of up to 40 millitesla
- ✓ Extremely robust
- ✓ Easy to clean - even using harsh methods
- ✓ No false switching caused by metal dust or chips
- ✓ Factor 1 on steel and aluminum
- ✓ No extra protection needed
- ✓ Long operating distances

#### RANGE OVERVIEW

#### Housing size

#### Full Inox

### WELD- IMMUNE

M8

p. 161

M12

p. 161

M18

p. 161

FAMILY

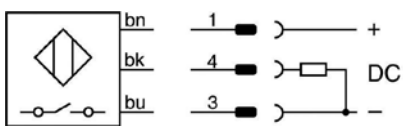
HOUSING SIZE

OPERATING DISTANCE MM

# INDUCTIVE

## WIRING DIAGRAM

PNP NO



DATA

Sensing face material

Welding systems MF

Welding systems 50 Hz

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

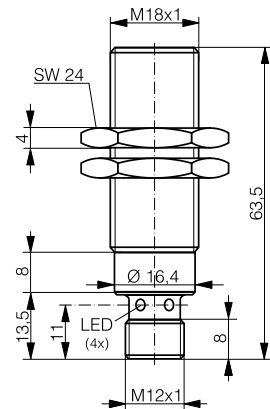
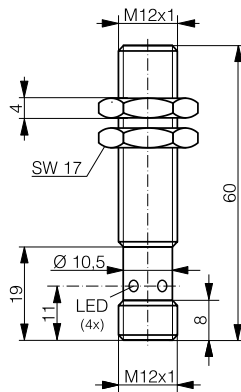
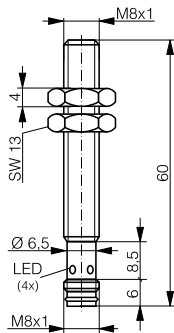
PNP NO

PNP NO

Other types available

# WELD-IMMUNE

FULL INOX	FULL INOX	FULL INOX
M8	M12	M18
3	6	10



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Up to 15 kA	Up to 15 kA	Up to 15 kA
≤ 40 mT (-673) / 500 ms (-761)	≤ 40 mT (-673) / 500 ms (-761)	≤ 40 mT (-673) / 500 ms (-761)
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S8	Connector S12	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable
15 Hz (-673) / 1 Hz (-761)	15 Hz (-673) / 1 Hz (-761)	15 Hz (-673) / 1 Hz (-761)
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
<b>DW-AS-703-M8-673</b>	<b>DW-AS-703-M12-673</b>	<b>DW-AS-703-M18-673</b>
<b>DW-AS-703-M8-761</b>	<b>DW-AS-703-M12-761</b>	<b>DW-AS-703-M18-761</b>

- Inductive
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DESIGNED FOR SPECIAL REQUIREMENTS

# SPECIAL

## INDUCTIVE SENSORS

### 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
- ✓ IP 68 and IP 69K
- ✓ Pressure resistant up to 80 bar

RANGE OVERVIEW

Housing size

Full Inox

**SPECIAL**

M30

p. 165



FAMILY

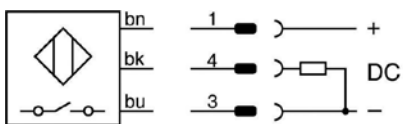
HOUSING SIZE MM

OPERATING DISTANCE MM

INDUCTIVE

## WIRING DIAGRAM

PNP NO



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

PNP NO

Description



# INDUCTIVE SENSORS

## 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

#### CONNECTION

Cable	D
Connector	S
Cable with molded 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 & high-pressure resistant)	G

### HOUSING SIZE

Threaded	
M4	4
M5	5
M8	8
M12	12
M18	18
M30	30
M50	50
Smooth	
Ø 3 mm	3
Ø 4 mm	4
Ø 6.5 mm	65
Ø 8 mm	80
5 x 5 mm	5
8 x 8 mm	8
20 x 32 mm	23
40 x 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

# INDUCTIVE SENSORS

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