

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



INTELLIGENT SENSORS FOR THE 4TH INDUSTRIAL REVOLUTION: INDUSTRY 4.0

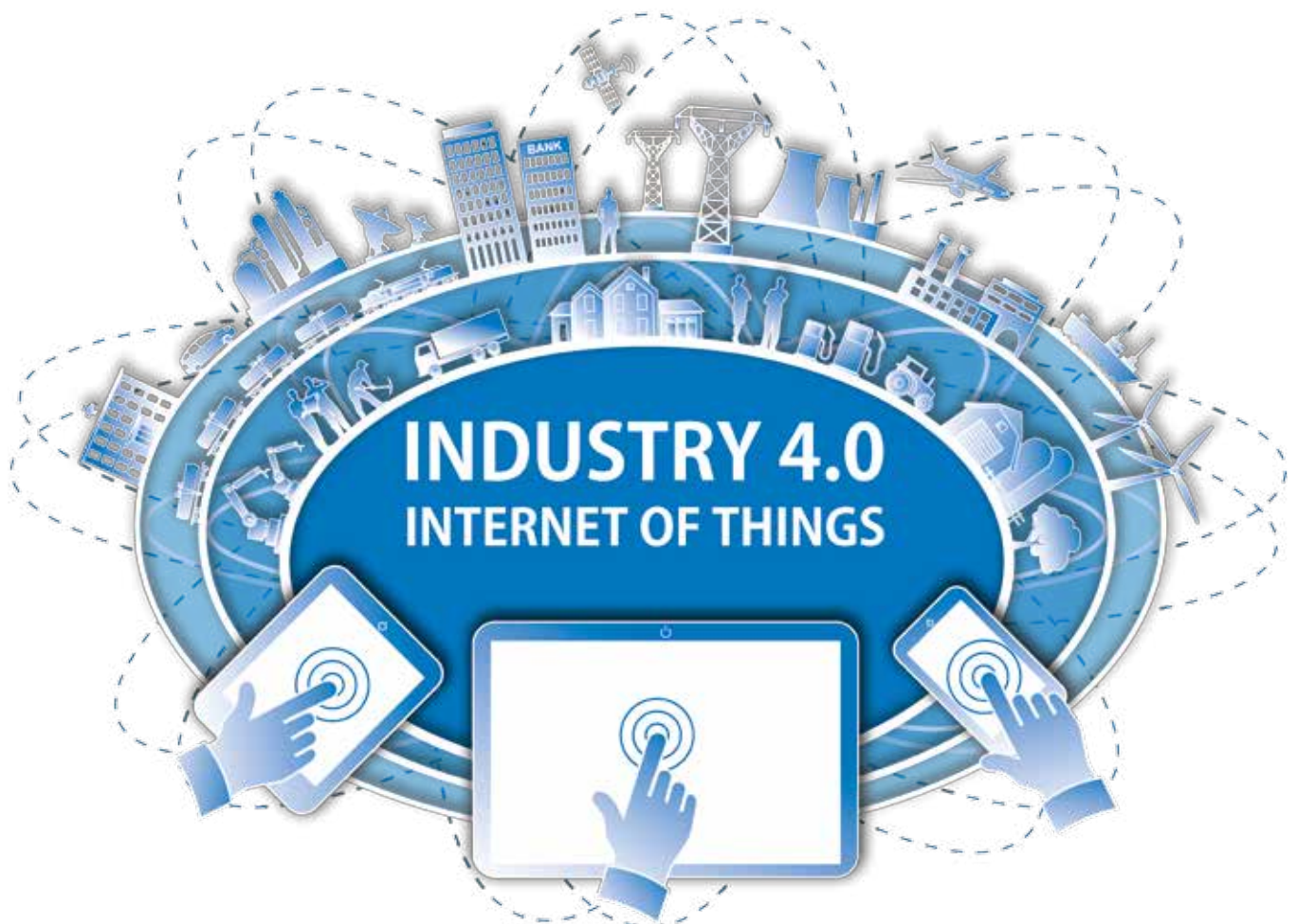
Fit for the future with IO-Link

Intelligent sensors are the fundamental building blocks of modern smart factories. They enable sensor-supported production resources (machines, robots, etc.) to configure, control, manage and optimize themselves. Precise, reliable sensor data is now more essential than ever.

Sensors from Contrinex, the leader in intelligent sensor technology, ensure excellent data quality. To communicate that data, all Contrinex inductive and photoelectric ASIC sensors will be equipped with IO-Link as standard. Customers use either the sensor's binary PNP output or its intelligent IO-Link interface. Both are available in one and the same device.

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

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



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	✓ Presence detection of metal objects ✓ Position control of all kinds of metal targets ✓ Counting tasks ✓ Distance control on end positions ✓ Quality control	✓ Sensing of light reflective objects ✓ Position control of cartons and other objects on conveyors ✓ Detection of small objects over large distances

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.

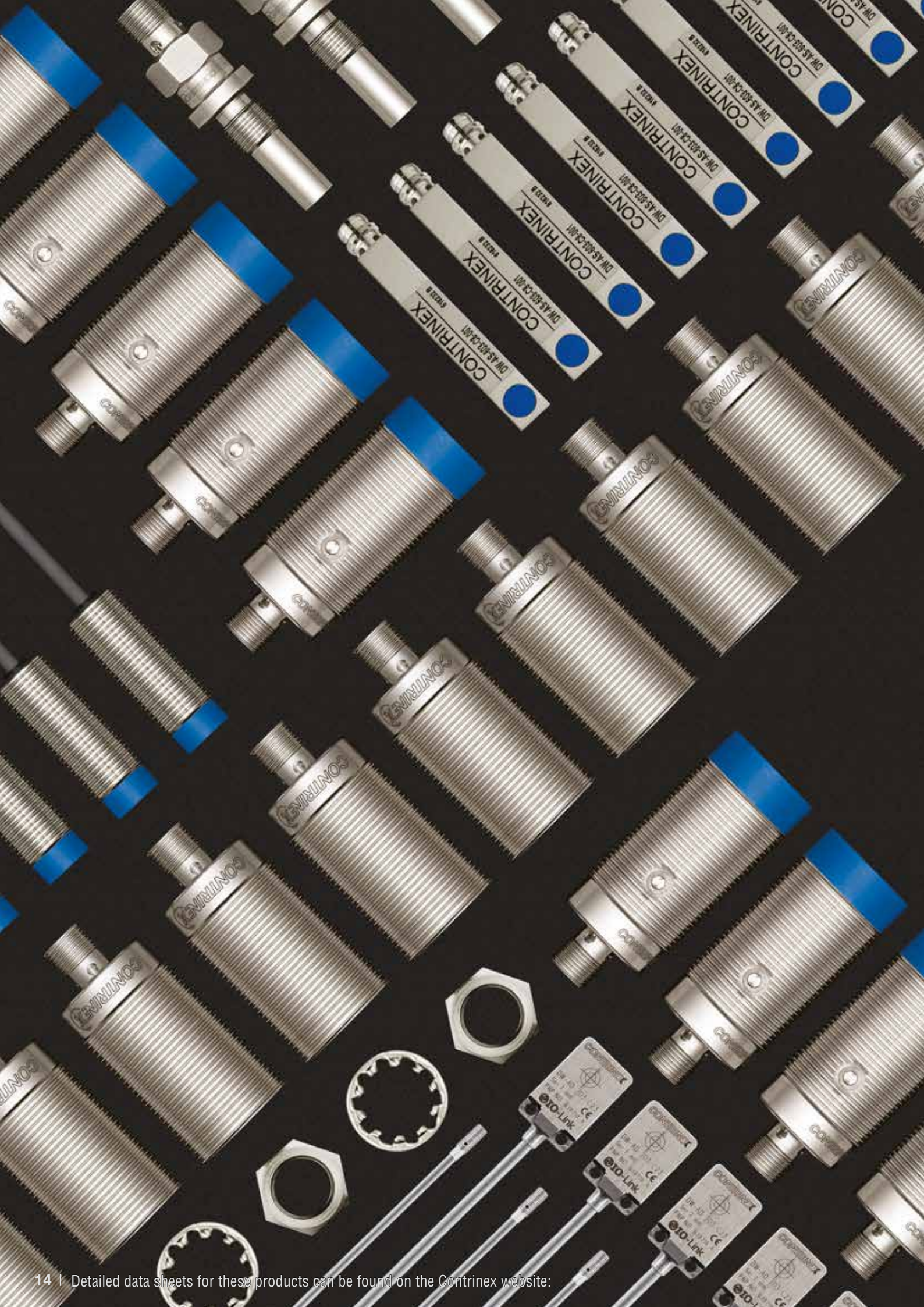
Recommended product ranges:

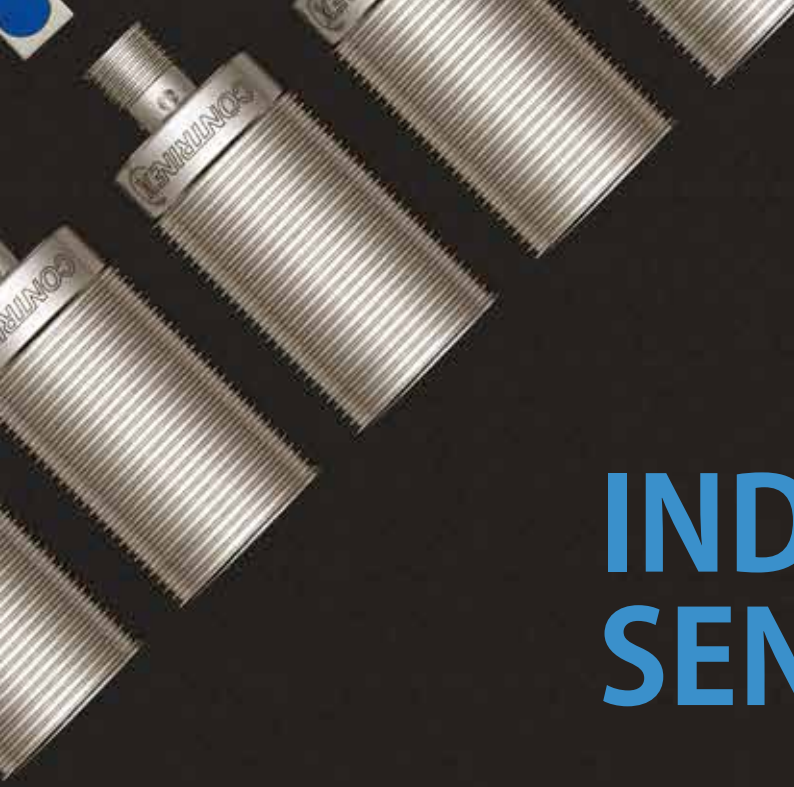
Inductive - Extra Distance - High pressure

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	
 IO-Link CLASSICS Series 600 $1 \times S_n / 2 \times S_n$	Ø 3	0.6 ... 1 mm		p. 71-72		p. 95	
	M4	0.6 ... 1 mm		p. 72-73			
	Ø 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			
	Ø 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				
EXTRA DISTANCE Series 500 $3 \times S_n / 4 \times S_n$	Ø 4	2.5 mm		p. 75			
	M5 / P5	1 ... 2.5 mm		p. 77			
	Ø 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					
FULL INOX Series 700 full-metal housing  IO-Link	Ø 4	3 mm		p. 75			
	M5	3 mm		p. 78			
	Ø 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		

								Inductive
	HIGH PRESSURE up to 1000 bar peak	EXTRA/HIGH TEMPERATURE -40 to +230°C	WASHDOWN	ANALOG OUTPUT	2-WIRE	WELD-IMMUNE	SPECIAL	
					p. 131			Photoelectric
					p. 131			
					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		Safety
		p. 112						
						see online		
								RFID
	p. 99							
	p. 99			p. 123-124				Connectivity
				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	
Ø 3 mm / M4	0.6 mm													71 - 72
	1 mm													72 - 73
Ø 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
Ø 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
	6 mm													44 - 45
C8	1.5 mm													45
	2 mm													45 - 46
	3 mm													46
M12	2 mm													47
	3 - 4 mm													47 - 50
	6 mm													50 - 51
	8 mm													51 - 53
	10 mm													53 - 54
M18	5 mm													54 - 55
	8 mm													55 - 57
	12 mm													57 - 58
	20 mm													58 - 59
M30	10 mm													59 - 60
	15 mm													61
	22 mm													61 - 62
	40 mm													63 - 64
C44	15 mm													65
	20 mm													65
	30 mm													65
	40 mm													66

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	
EXTREME														
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	
EXTRA PRESSURE														
Ø 3 / M5	0.6 ... 0.8 mm												95	
Ø 6.5	2.5 mm												95	
HIGH PRESSURE														
M5 / P5	1 mm												99	
M8 / P8 / M12 / P12	1.5 ... 2.5 mm												99 - 101	
M14 / P20	3.0 mm												101 - 102	
EXTRA/HIGH TEMP.														
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	
WASHDOWN														
M12	2 ... 6 mm												117	
M18	10 mm												117 - 118	
M30	20 mm												118	
ANALOG OUTPUT														
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	
2-WIRE														
Ø 3/Ø 4/M4/M5/C5	0.6 ... 0.8 mm												131 - 133	
Ø 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	
WELD-IMMUNE														
M8	3 mm												161	
M12	6 mm												161	
M18	10 mm												161	
SPECIAL														
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.

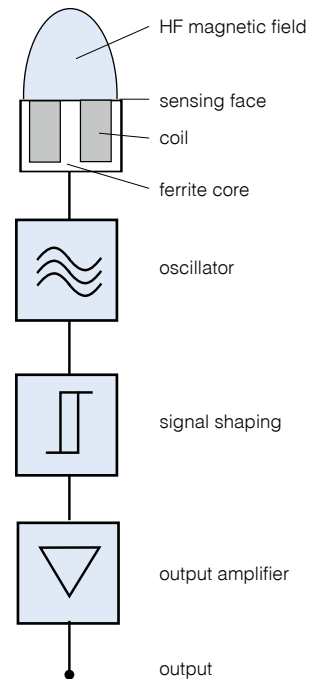


Fig. 1: Conventional inductive sensor technology, as used in the **Classics** family

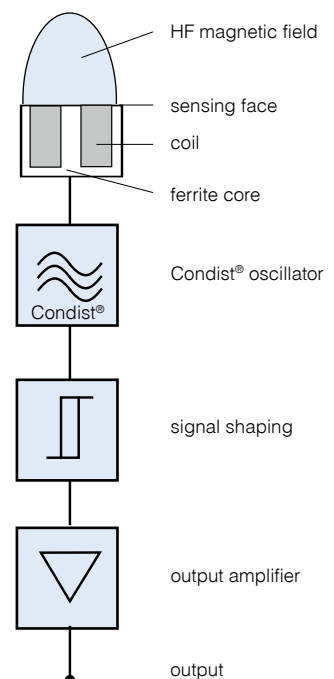


Fig. 2: Contrinex's patented Condist® inductive sensor technology, as used in the **Extra Distance** family

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.

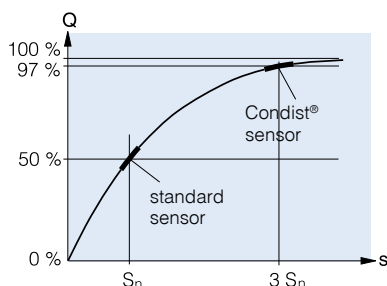


Fig. 3: **Extra Distance** family sensors have a longer operating distance, due to Condist® oscillator technology

FULL INOX FAMILY:

All-round stainless steel protection - practically indestructible

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

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

This voltage generates the signal required, and is in principle **independent of the field's energy loss**. Therein lies the fundamental advantage of this technology, since the field energy losses, which are evaluated in conventional sensors, are subject to a number of undesirable environmental and material influences.

Condet® technology allows the sensor, including its face, to be fully encapsulated in a protective, stainless steel housing, with the added security of long operating distances.

The coupling between the target and the coil is rather **like a transformer**, and is hence **temperature independent** and only **slightly influenced 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.

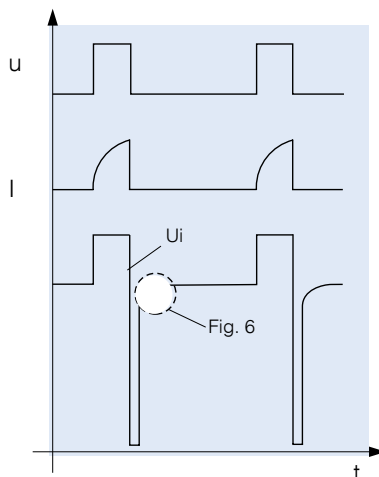


Fig. 5: Evolution of main signals

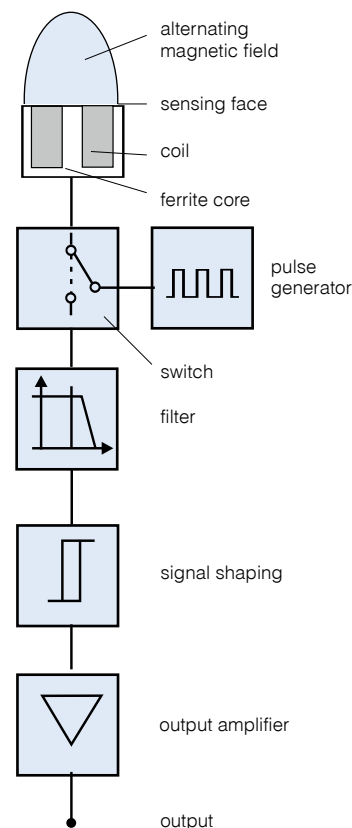


Fig. 4: **Full Inox** family sensors use Condet® pulse generator technology instead of an oscillator

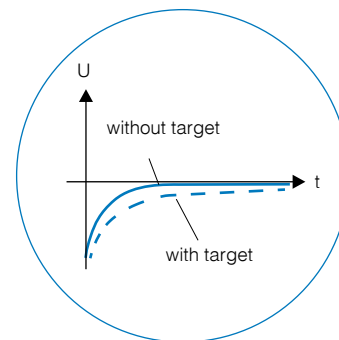


Fig. 6 (detail fig. 5): Effect of a target on the measured signal

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**.

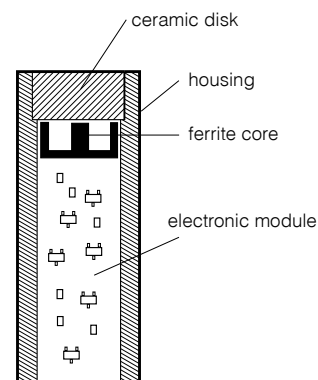


Fig. 7

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.



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**.



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 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.

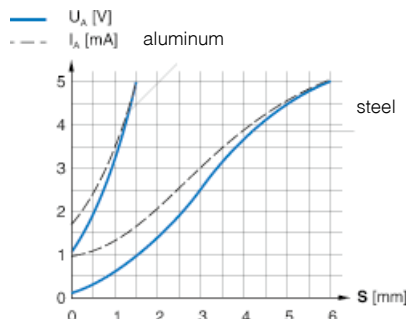


Fig. 8

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°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 $\varnothing 3$ 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:

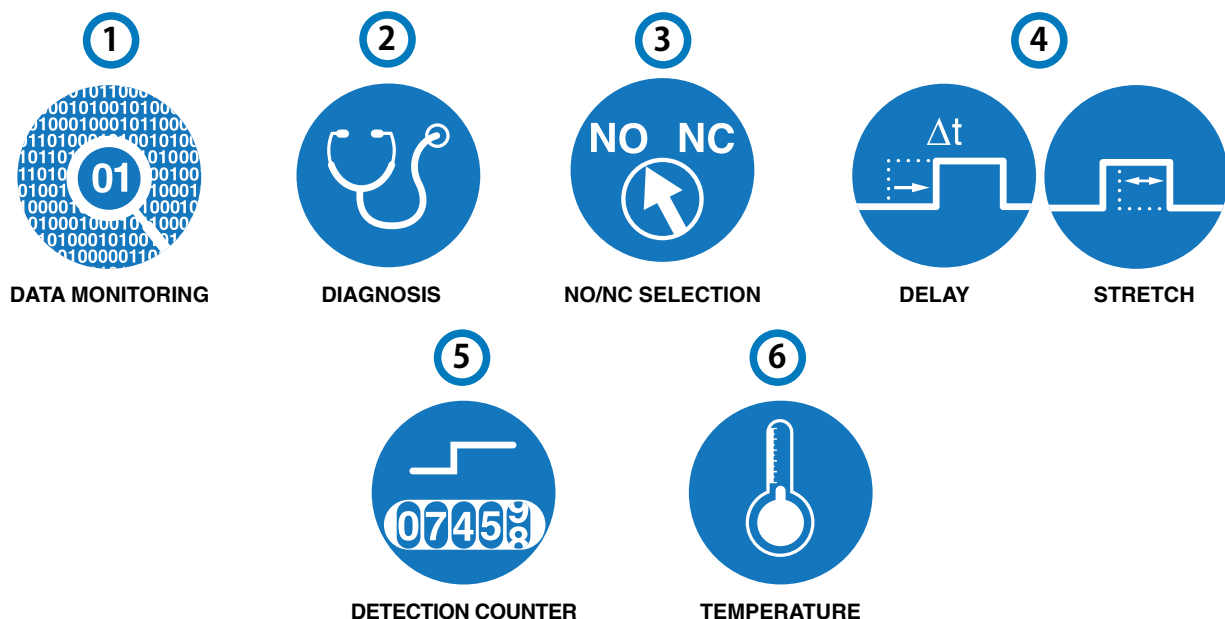
- 4 The timing of output switching can be configured. Depending on the needs of an application, output switching can be delayed or the duration stretched through programming.

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	Ø 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

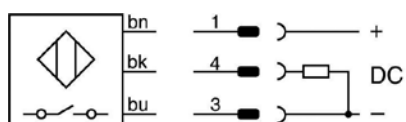
HOUSING SIZE MM

OPERATING DISTANCE MM

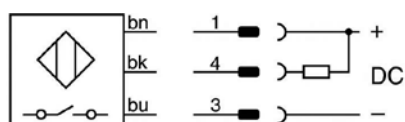
INDUCTIVE

WIRING DIAGRAMS

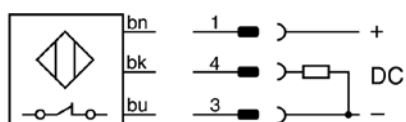
PNP NO



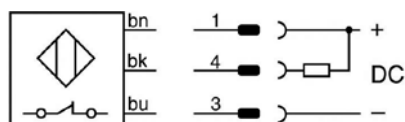
NPN NO



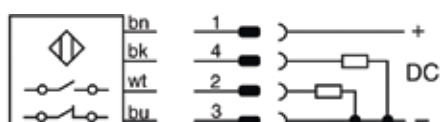
PNP NC



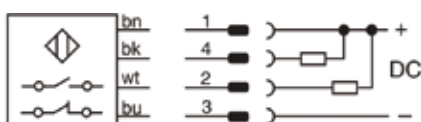
NPN NC



PNP Changeover



NPN Changeover



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

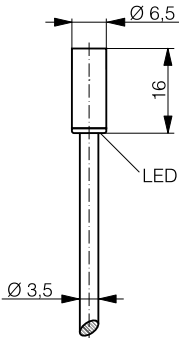
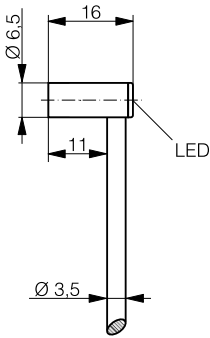
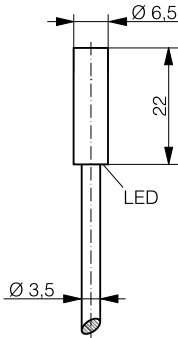
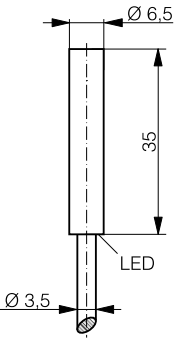
Output current

PNP NO

NPN NO

Other types available

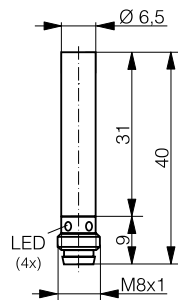
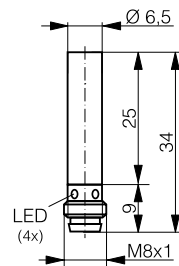
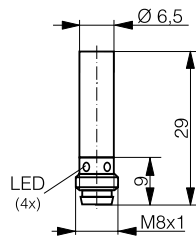
BASIC

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
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				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	
DW-AD-603-065-120	DW-AD-603-065-400	DW-AD-603-065-121	DW-AD-603-065	
DW-AD-601-065-120	DW-AD-601-065-400	DW-AD-601-065-121	DW-AD-601-065	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC, length 30 mm	

BASIC

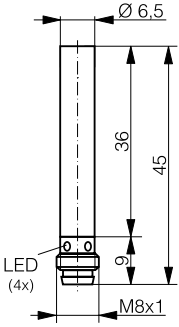
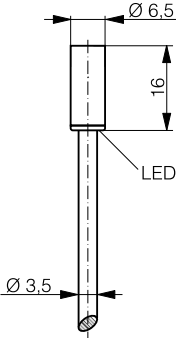
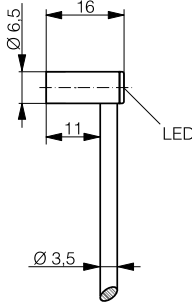
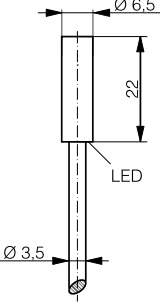
INDUCTIVE

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	DW-AS-603-065-129	DW-AS-603-065-123	DW-AS-603-065-124
NPN NO	DW-AS-601-065-129	DW-AS-601-065-123	DW-AS-601-065-124
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

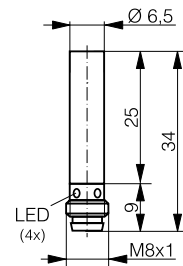
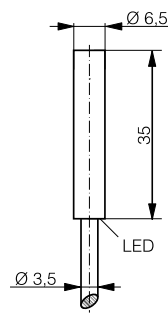
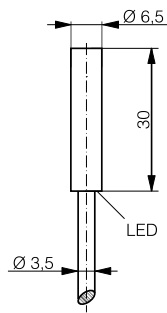
BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5	
1.5	2	2	2	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	
Connector S8	PVC cable	PVC cable	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	Glossary
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	
DW-AS-603-065-001	DW-AD-623-065-120	DW-AD-623-065-400	DW-AD-623-065-121	Index
DW-AS-601-065-001	DW-AD-621-065-120	DW-AD-621-065-400	DW-AD-621-065-121	
PNP NC, NPN NC, S12	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

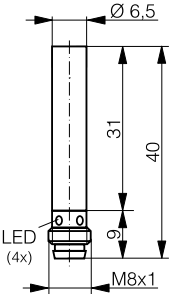
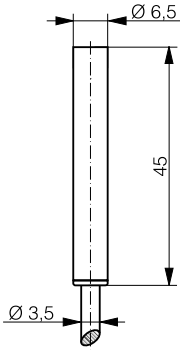
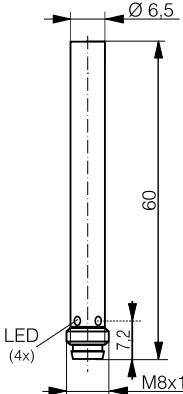
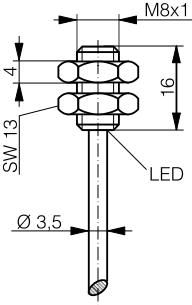
INDUCTIVE

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	DW-AD-623-065-122	DW-AD-623-065	DW-AS-623-065-123
NPN NO	DW-AD-621-065-122	DW-AD-621-065	DW-AS-621-065-123
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC length 29 mm

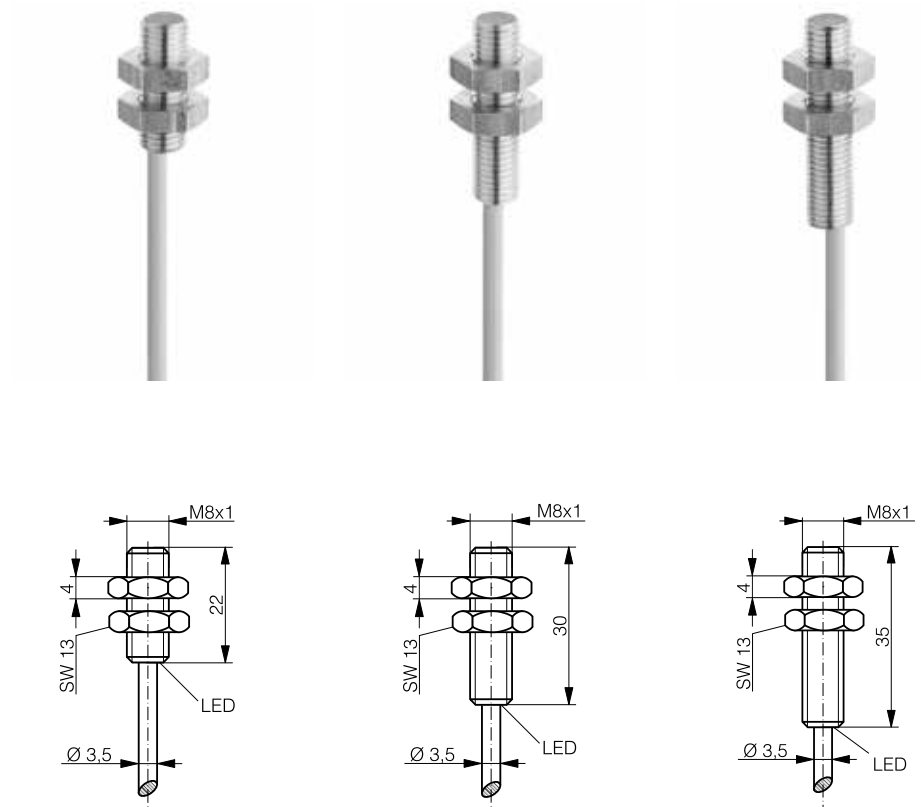
BASIC

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
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	
DW-AS-623-065-124	DW-AD-503-065	DW-AS-503-065-001	DW-AD-603-M8-120	
DW-AS-621-065-124	DW-AD-501-065	DW-AS-501-065-001	DW-AD-601-M8-120	
PNP NC, NPN NC length 45 mm, S12	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

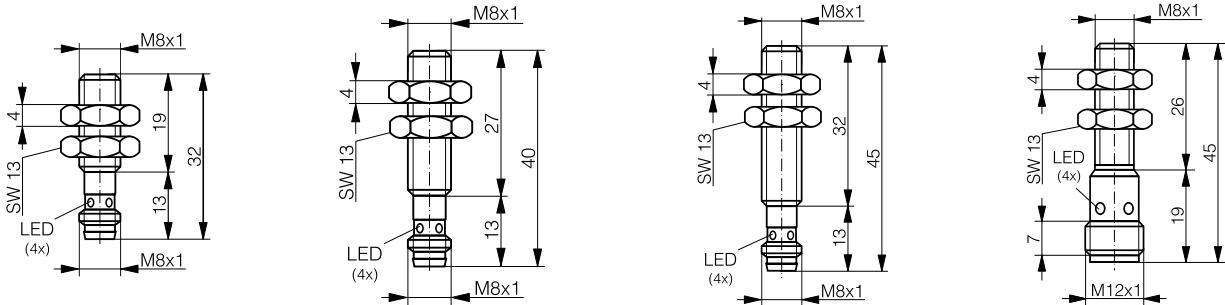
INDUCTIVE

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	DW-AD-603-M8-121	DW-AD-603-M8-122	DW-AD-603-M8
NPN NO	DW-AD-601-M8-121	DW-AD-601-M8-122	DW-AD-601-M8
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

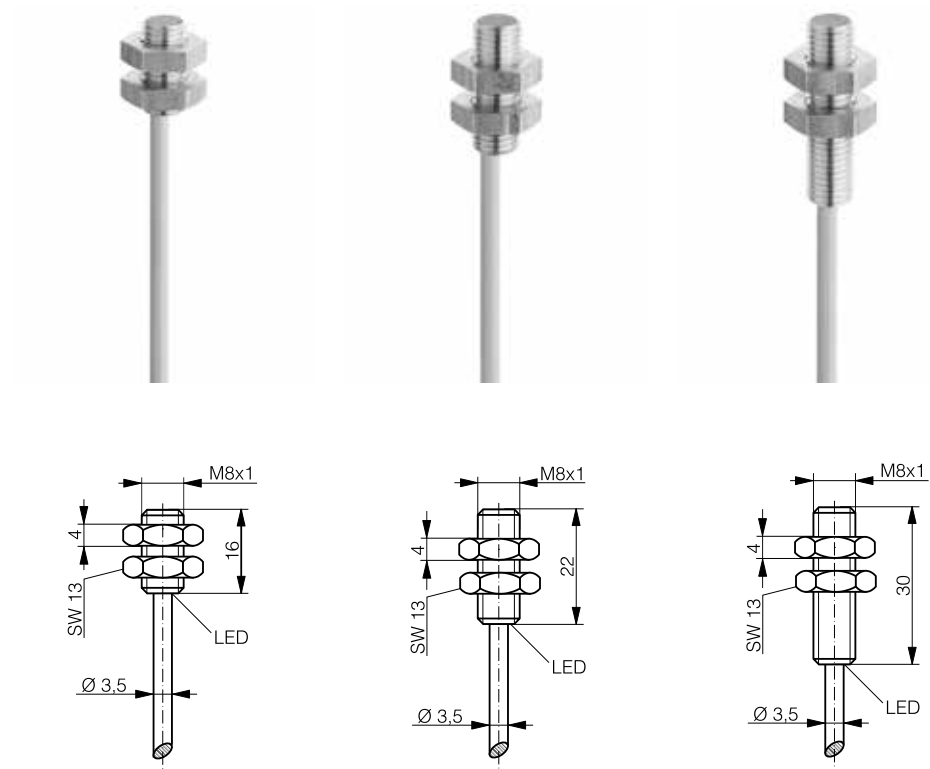
BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	
1.5	1.5	1.5	1.5	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	Glossary
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	
DW-AS-603-M8-123	DW-AS-603-M8-124	DW-AS-603-M8-001	DW-AS-603-M8	Index
DW-AS-601-M8-123	DW-AS-601-M8-124	DW-AS-601-M8-001	DW-AS-601-M8	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC, length 39 mm	

BASIC

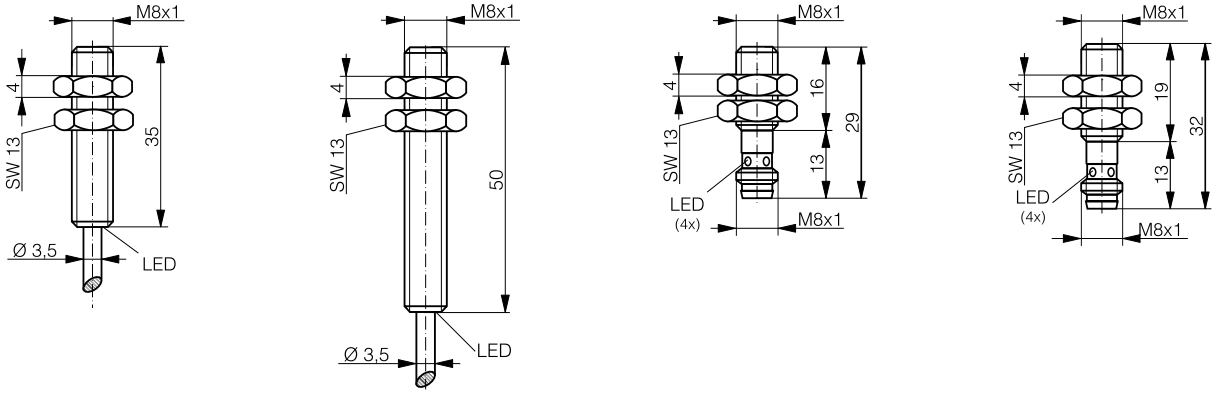
INDUCTIVE

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



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	DW-AD-623-M8-120	DW-AD-623-M8-121	DW-AD-623-M8-122
NPN NO	DW-AD-621-M8-120	DW-AD-621-M8-121	DW-AD-621-M8-122
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

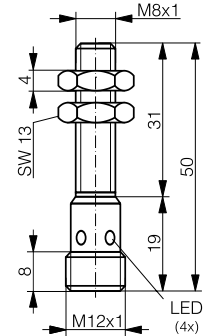
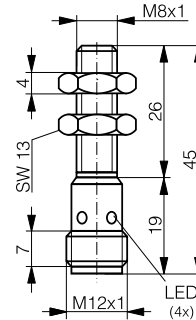
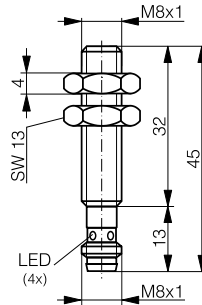
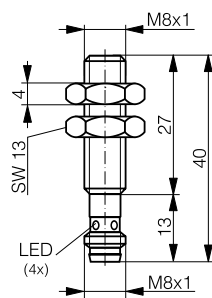
BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	
2	2	2	2	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AD-623-M8	DW-AD-623-M8-177	DW-AS-623-M8-129	DW-AS-623-M8-123	
DW-AD-621-M8	DW-AD-621-M8-177	DW-AS-621-M8-129	DW-AS-621-M8-123	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	
				Glossary
				Index

BASIC

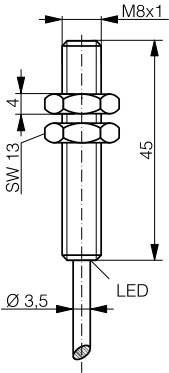
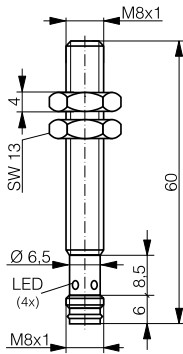
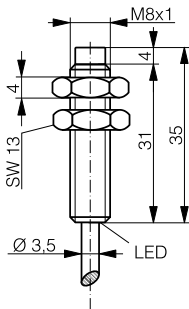
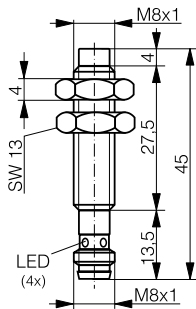
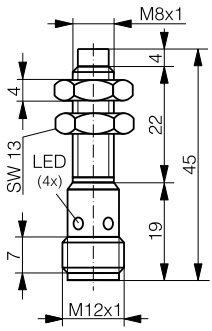
INDUCTIVE

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	DW-AS-623-M8-124	DW-AS-623-M8-001	DW-AS-623-M8	DW-AS-623-M8-193
NPN NO	DW-AS-621-M8-124	DW-AS-621-M8-001	DW-AS-621-M8	DW-AS-621-M8-193
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

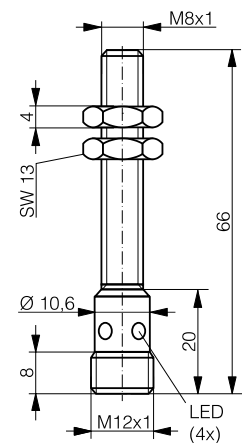
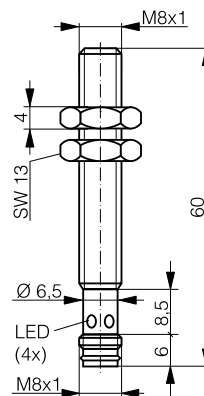
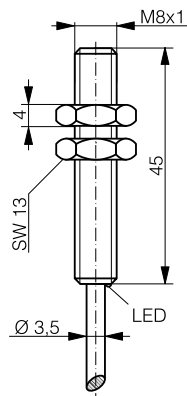
BASIC

FULL INOX	FULL INOX	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	M8	
2	2	2.5	2.5	2.5	
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Accessories
PUR cable	Connector S8	PVC cable	Connector S8	Connector S12	
IP 68	IP 68 / IP 69K	IP 67	IP 67	IP 67	Glossary
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	Index
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	
DW-AD-703-M8-BAS	DW-AS-703-M8-001-BAS	DW-AD-613-M8	DW-AS-613-M8-001	DW-AS-613-M8	
DW-AD-701-M8-BAS	DW-AS-701-M8-001-BAS	DW-AD-611-M8	DW-AS-611-M8-001	DW-AS-611-M8	Index
		PNP NC, NPN NC, lengths 22 & 30 mm	PNP NC, NPN NC, lengths 32 & 40 mm	PNP NC, NPN NC	

BASIC

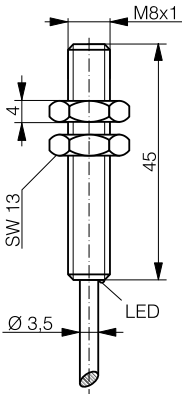
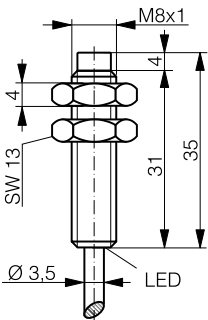
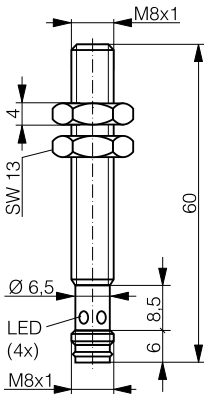
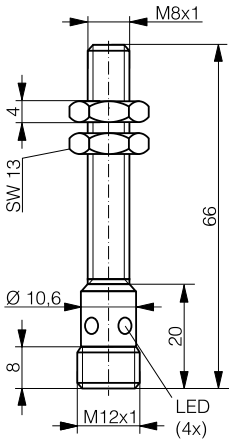
INDUCTIVE

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	DW-AD-503-M8	DW-AS-503-M8-001	DW-AS-503-M8
NPN NO	DW-AD-501-M8	DW-AS-501-M8-001	DW-AS-501-M8
Other types available	PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC	PNP NC, NPN NC

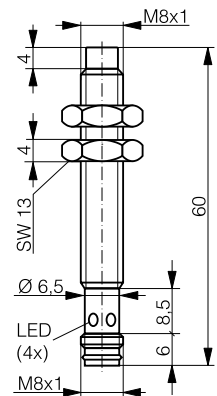
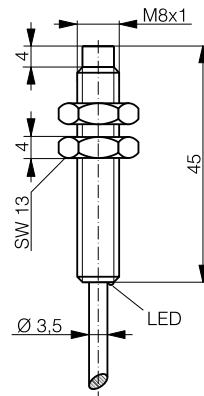
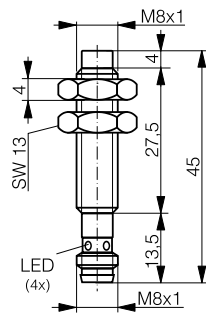
BASIC

EXTRA DISTANCE	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M8	M8	M8	M8	
4	4	4	4	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
				Glossary
				Index
				
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	
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	
-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	
DW-AD-523-M8	DW-AD-633-M8	DW-AS-523-M8-001	DW-AS-523-M8	
DW-AD-521-M8	DW-AD-631-M8	DW-AS-521-M8-001	DW-AS-521-M8	
PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

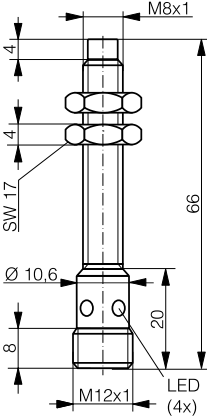
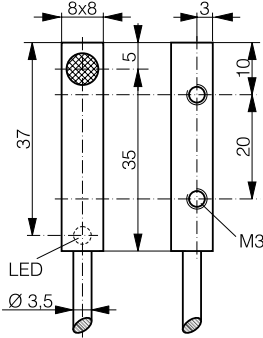
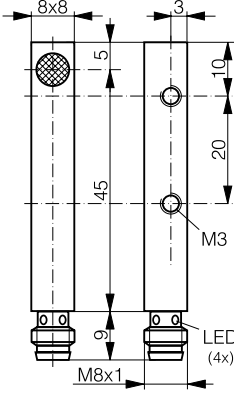
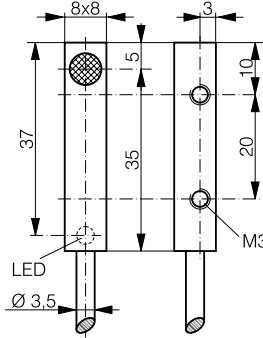
INDUCTIVE

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	DW-AS-633-M8-001	DW-AD-513-M8	DW-AS-513-M8-001
NPN NO	DW-AS-631-M8-001	DW-AD-511-M8	DW-AS-511-M8-001
Other types available	PNP NC, NPN NC	PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC

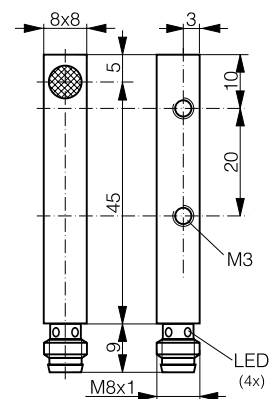
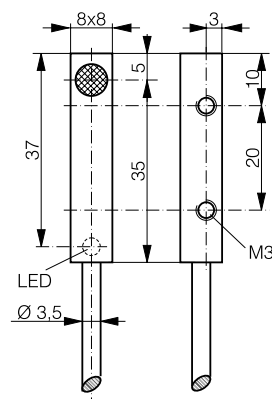
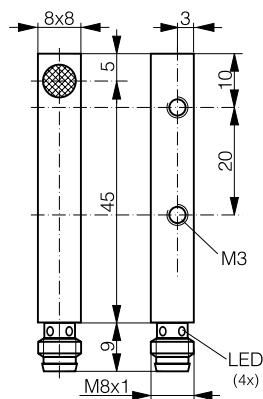
BASIC

EXTRA DISTANCE	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	□ 8 x 8	□ 8 x 8	□ 8 x 8	Photoelectric
6	1.5	1.5	2	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Chrome-plated brass	Zamak	Zamak	Zamak	Glossary
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	Index
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	
DW-AS-513-M8	DW-AD-603-C8	DW-AS-603-C8-001	DW-AD-623-C8	
DW-AS-511-M8	DW-AD-601-C8	DW-AS-601-C8-001	DW-AD-621-C8	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

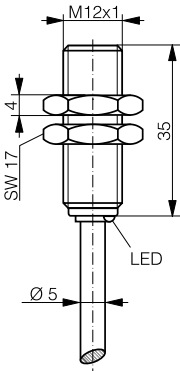
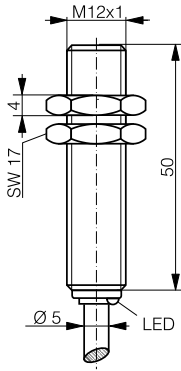
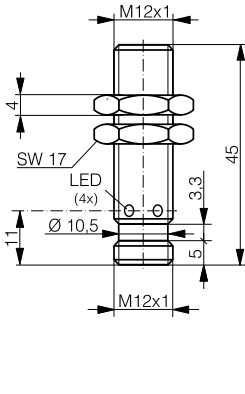
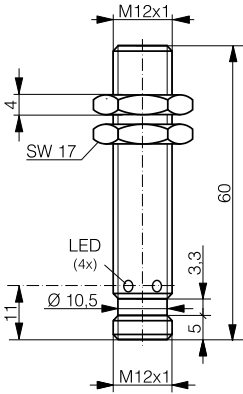
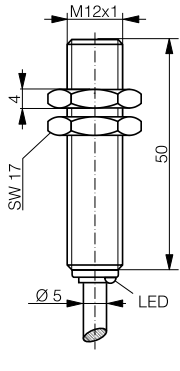
INDUCTIVE

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	DW-AS-623-C8-001	DW-AD-503-C8	DW-AS-503-C8
NPN NO	DW-AS-621-C8-001	DW-AD-501-C8	DW-AS-501-C8
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

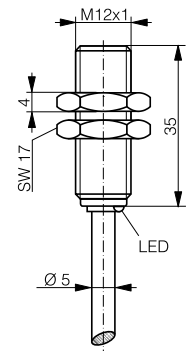
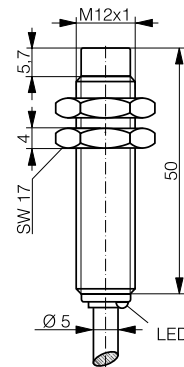
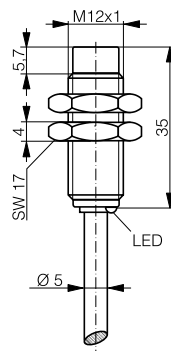
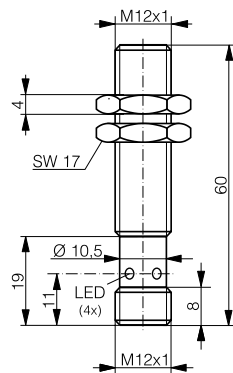
BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	FULL INOX	Inductive
M12	M12	M12	M12	M12	
2	2	2	2	3	
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
					Accessories
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	
DW-AD-603-M12-120	DW-AD-603-M12	DW-AS-603-M12-120	DW-AS-603-M12	DW-AD-703-M12-BAS	
DW-AD-601-M12-120	DW-AD-601-M12	DW-AS-601-M12-120	DW-AS-601-M12	DW-AD-701-M12-BAS	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC		

BASIC

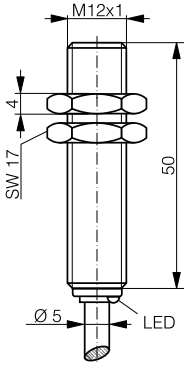
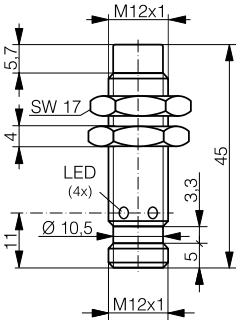
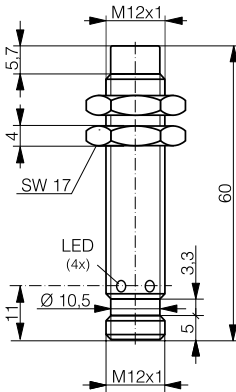
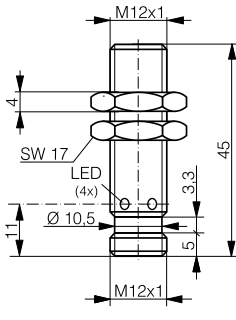
INDUCTIVE

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



DATA				
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	DW-AS-703-M12-BAS	DW-AD-613-M12-120	DW-AD-613-M12	DW-AD-623-M12-120
NPN NO	DW-AS-701-M12-BAS	DW-AD-611-M12-120	DW-AD-611-M12	DW-AD-621-M12-120
Other types available		PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

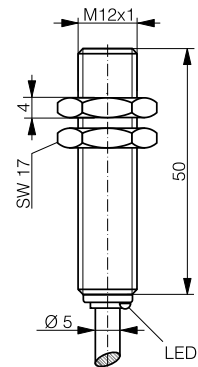
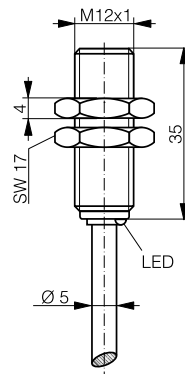
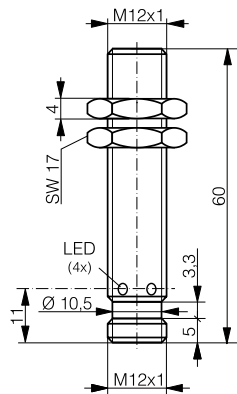
BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M12	M12	M12	Photoelectric
4	4	4	4	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AD-623-M12	DW-AS-613-M12-120	DW-AS-613-M12	DW-AS-623-M12-120	
DW-AD-621-M12	DW-AS-611-M12-120	DW-AS-611-M12	DW-AS-621-M12-120	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	
				Index

BASIC

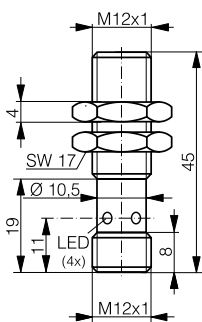
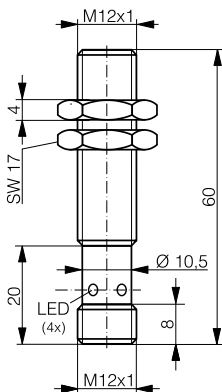
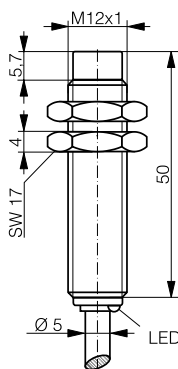
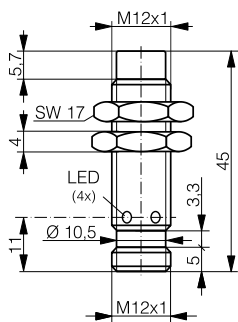
INDUCTIVE

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	DW-AS-623-M12	DW-AD-503-M12-120	DW-AD-503-M12
NPN NO	DW-AS-621-M12	DW-AD-501-M12-120	DW-AD-501-M12
PNP NC	DW-AS-624-M12		
Other types available	NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

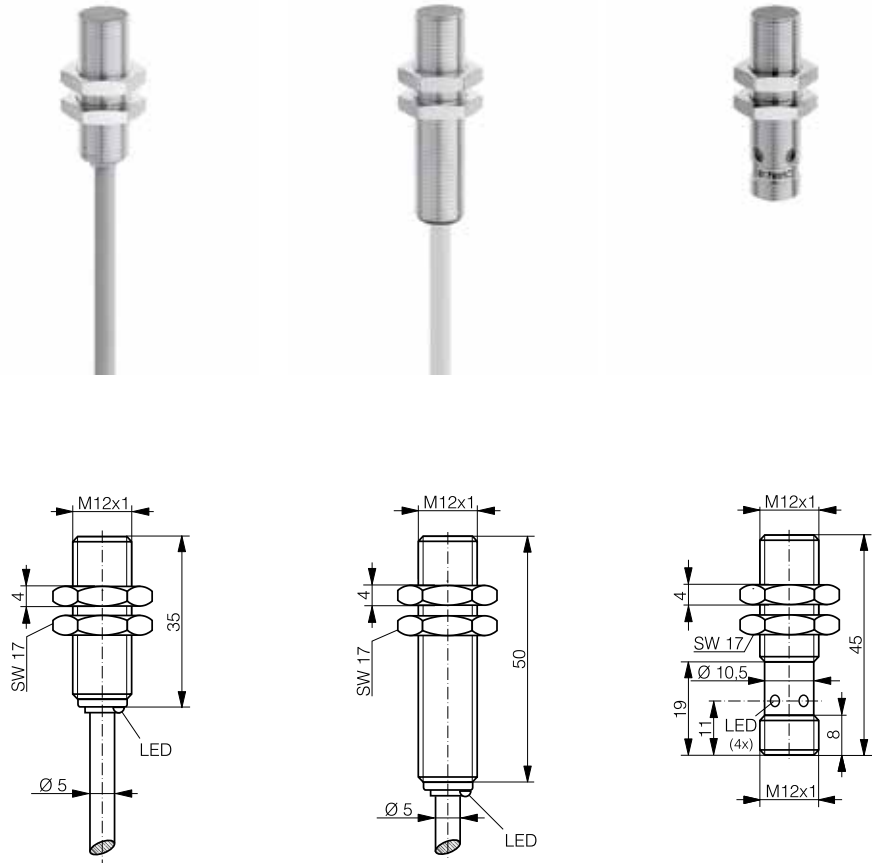
BASIC

EXTRA DISTANCE		EXTRA DISTANCE		CLASSICS		CLASSICS		Inductive
M12		M12		M12		M12		
6		6		8		8		
								Photoelectric
								Ultrasonic
								Capacitive
								Safety
								RFID
								Connectivity
								Accessories
Chrome-plated brass		Chrome-plated brass		Nickel-plated brass		Nickel-plated brass		Glossary
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		Index
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		
DW-AS-503-M12-120		DW-AS-503-M12		DW-AD-633-M12		DW-AS-633-M12-120		
DW-AS-501-M12-120		DW-AS-501-M12		DW-AD-631-M12		DW-AS-631-M12-120		
		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

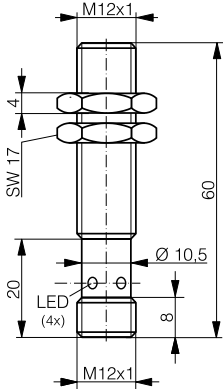
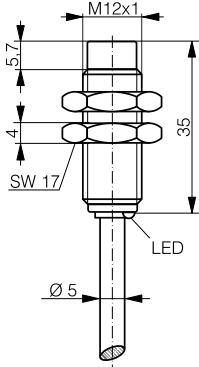
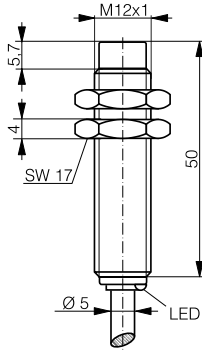
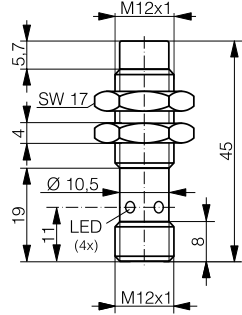
INDUCTIVE

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	DW-AD-523-M12-120	DW-AD-523-M12	DW-AS-523-M12-120
NPN NO	DW-AD-521-M12-120	DW-AD-521-M12	DW-AS-521-M12-120
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

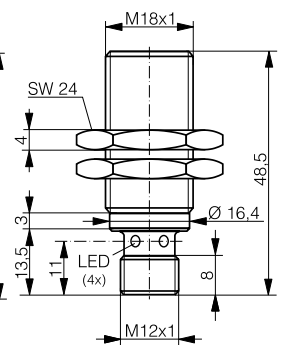
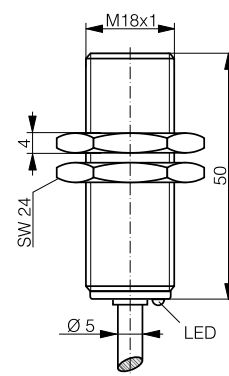
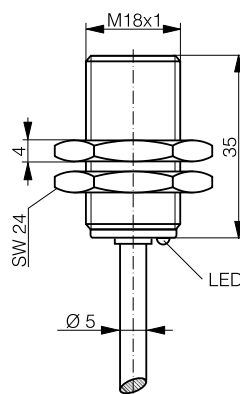
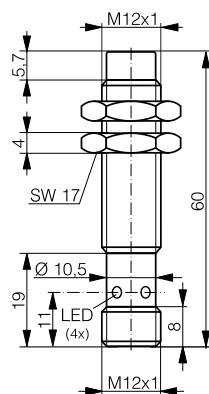
BASIC

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M12	M12	M12	M12	
8	10	10	10	Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Glossary
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	
DW-AS-523-M12	DW-AD-513-M12-120	DW-AD-513-M12	DW-AS-513-M12-120	Index
DW-AS-521-M12	DW-AD-511-M12-120	DW-AD-511-M12	DW-AS-511-M12-120	
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

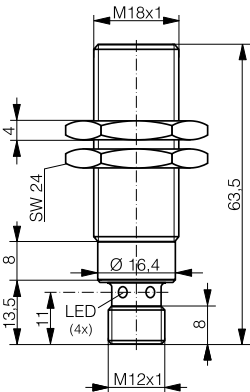
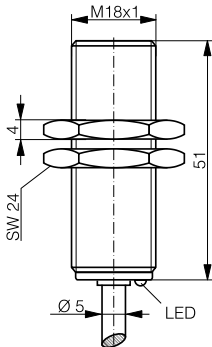
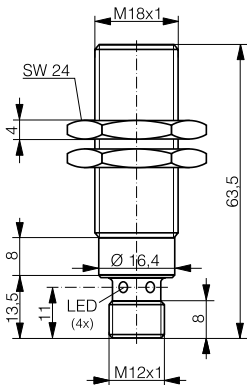
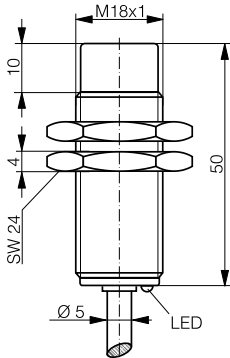
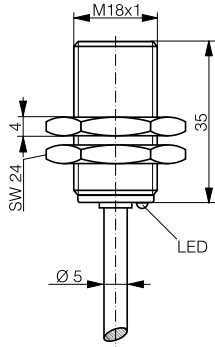
INDUCTIVE

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	DW-AS-513-M12	DW-AD-603-M18-120	DW-AD-603-M18	DW-AS-603-M18-120
NPN NO	DW-AS-511-M12	DW-AD-601-M18-120	DW-AD-601-M18	DW-AS-601-M18-120
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

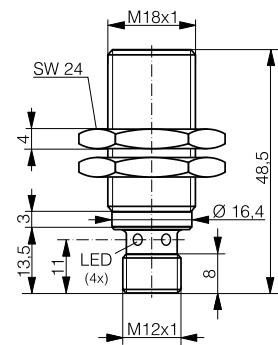
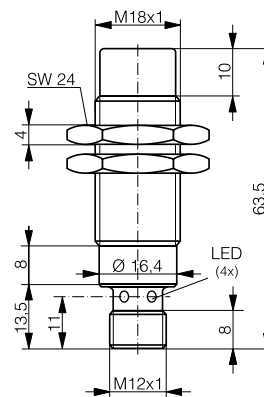
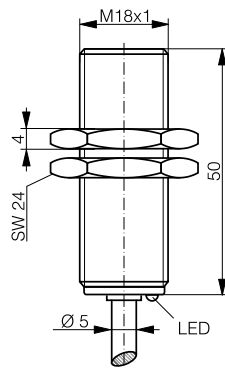
BASIC

CLASSICS	FULL INOX	FULL INOX	CLASSICS	CLASSICS	Inductive
M18	M18	M18	M18	M18	
5	5	5	8	8	
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
					Accessories
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	
DW-AS-603-M18-002	DW-AD-703-M18-BAS	DW-AS-703-M18-BAS	DW-AD-613-M18	DW-AD-623-M18-120	
DW-AS-601-M18-002	DW-AD-701-M18-BAS	DW-AS-701-M18-BAS	DW-AD-611-M18	DW-AD-621-M18-120	
DW-AS-604-M18-002					
NPN NC			PNP NC, NPN NC	PNP NC, NPN NC	Index

BASIC

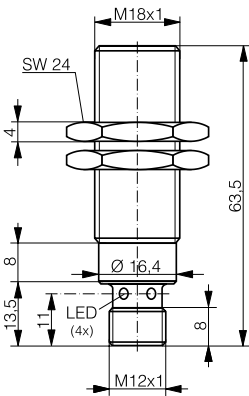
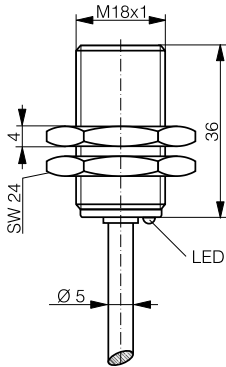
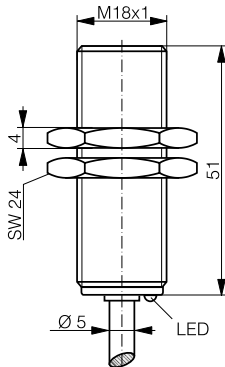
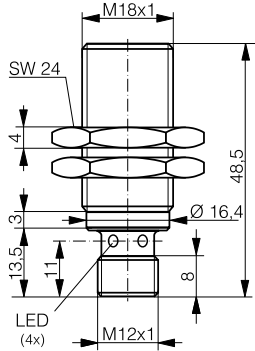
INDUCTIVE

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



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	DW-AD-623-M18	DW-AS-613-M18-002	DW-AS-623-M18-120
NPN NO	DW-AD-621-M18	DW-AS-611-M18-002	DW-AS-621-M18-120
PNP NC		DW-AS-614-M18-002	
Other types available	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

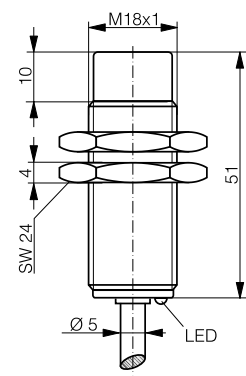
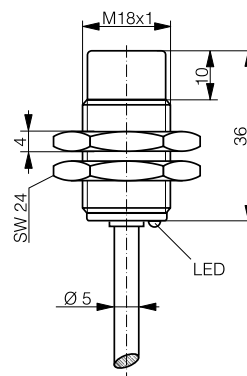
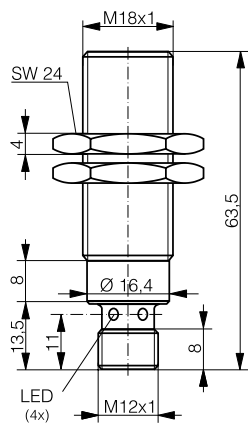
BASIC

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M18	M18	M18	M18	
8	12	12	12	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AS-623-M18-002	DW-AD-503-M18-120	DW-AD-503-M18	DW-AS-503-M18-120	
DW-AS-621-M18-002	DW-AD-501-M18-120	DW-AD-501-M18	DW-AS-501-M18-120	
DW-AS-624-M18-002				
NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

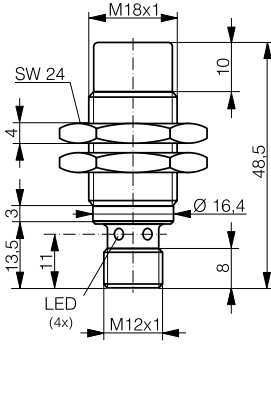
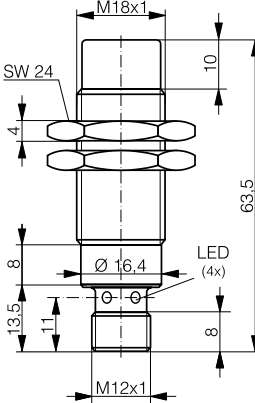
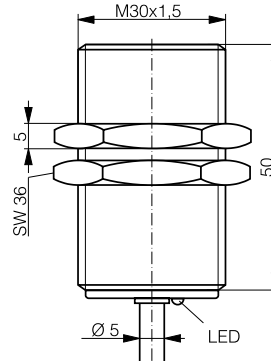
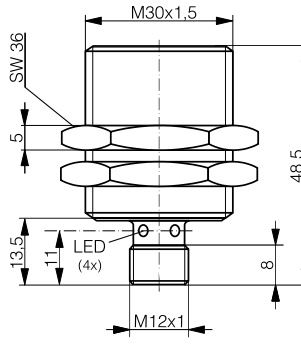
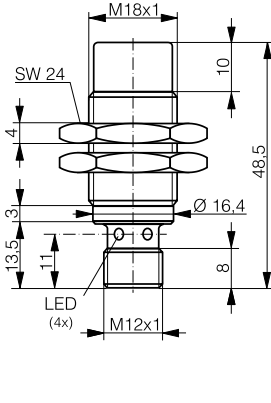
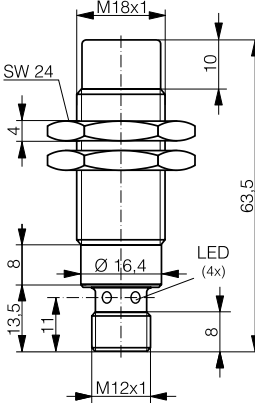
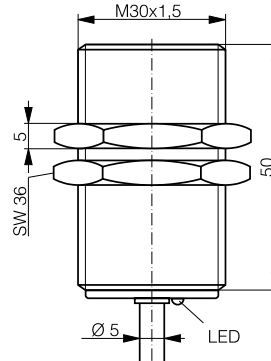
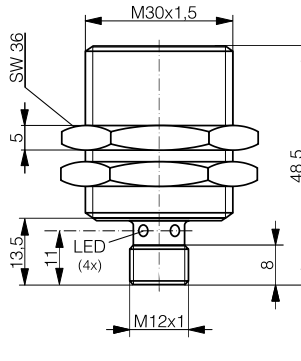
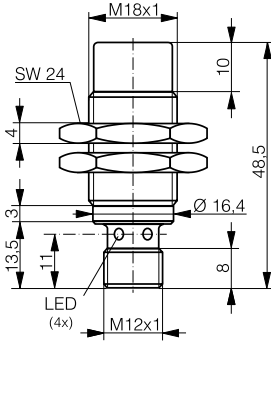
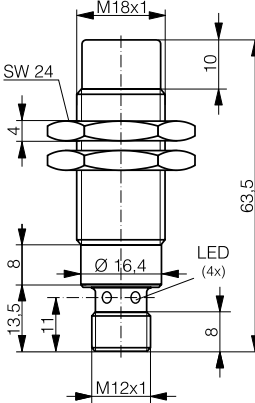
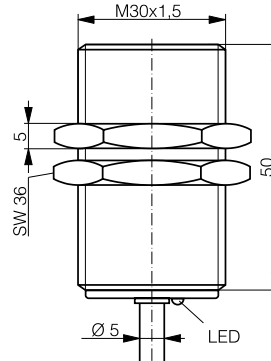
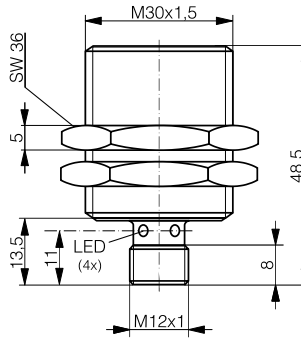
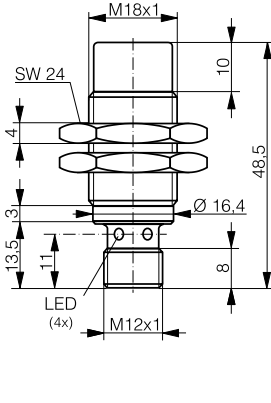
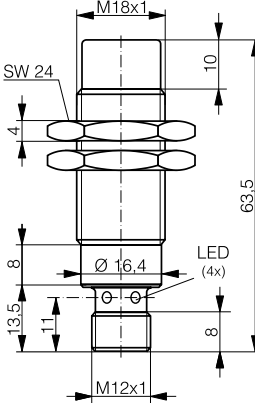
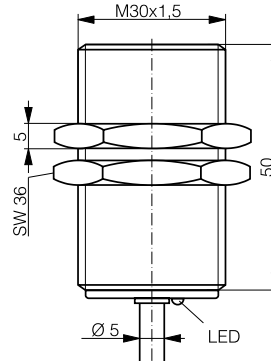
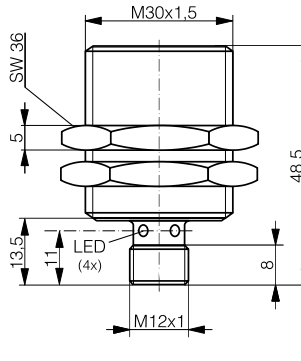
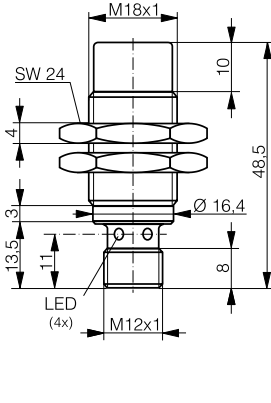
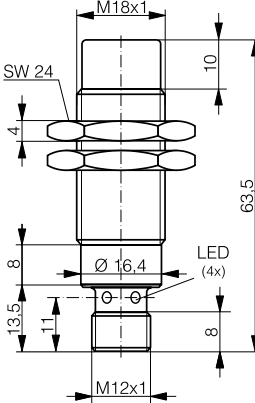
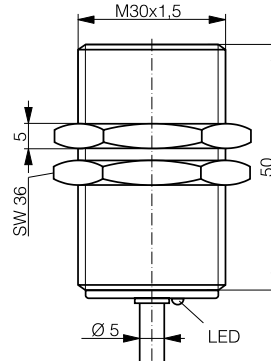
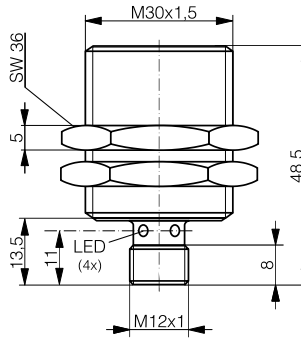
INDUCTIVE

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	DW-AS-503-M18-002	DW-AD-513-M18-120	DW-AD-513-M18
NPN NO	DW-AS-501-M18-002	DW-AD-511-M18-120	DW-AD-511-M18
PNP NC	DW-AS-504-M18-002		DW-AD-514-M18
Other types available	NPN NC	PNP NC, NPN NC	NPN NC

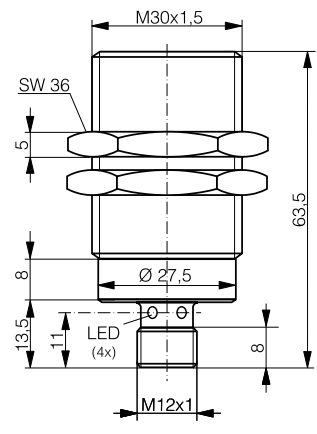
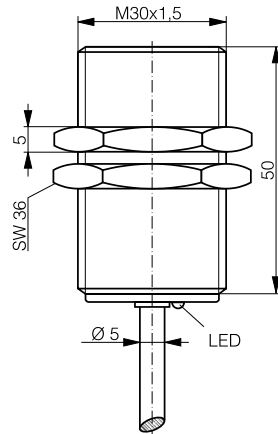
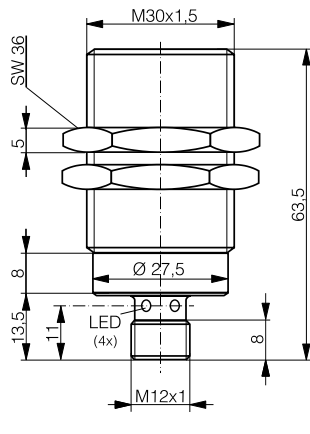
BASIC

EXTRA DISTANCE		EXTRA DISTANCE		CLASSICS		CLASSICS		Inductive
M18		M18		M30		M30		
20		20		10		10		Photoelectric
								
								Capacitive
								
								RFID
								
								Accessories
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		Index
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		
-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		
DW-AS-513-M18-120		DW-AS-513-M18-002		DW-AD-603-M30		DW-AS-603-M30-120		
DW-AS-511-M18-120		DW-AS-511-M18-002		DW-AD-601-M30		DW-AS-601-M30-120		
		DW-AS-514-M18-002						
PNP NC, NPN NC		NPN NC		PNP NC, NPN NC		PNP NC, NPN NC		

BASIC

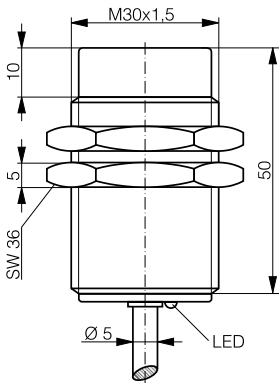
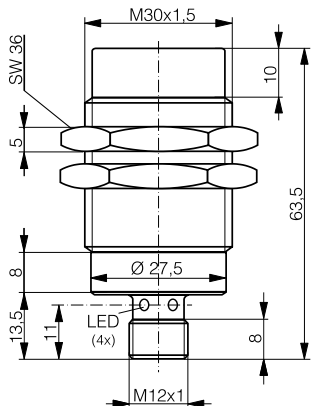
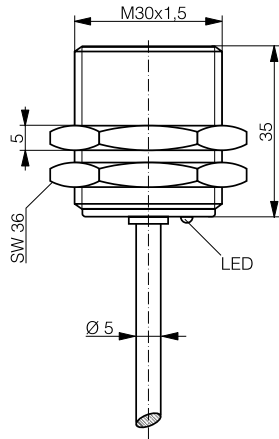
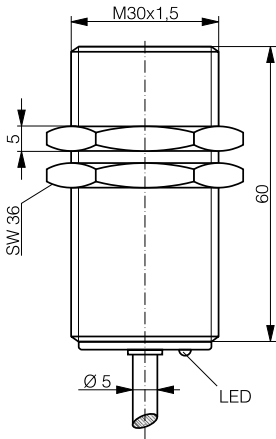
INDUCTIVE

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	DW-AS-603-M30-002	DW-AS-703-M30-BAS	DW-AD-703-M30-BAS
NPN NO	DW-AS-601-M30-002	DW-AS-701-M30-BAS	DW-AD-701-M30-BAS
PNP NC			
Other types available	PNP NC, NPN NC		

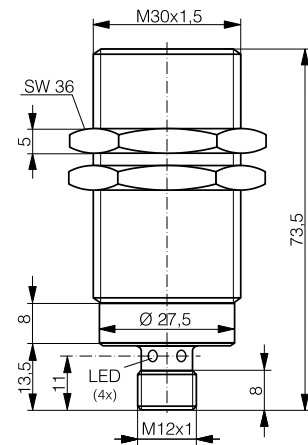
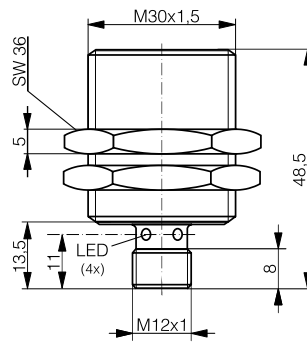
BASIC

CLASSICS		CLASSICS		EXTRA DISTANCE		EXTRA DISTANCE		Inductive
M30		M30		M30		M30		
15		15		22		22		
								Photoelectric
								Ultrasonic
								Capacitive
								Safety
								RFID
								Connectivity
								Accessories
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		Glossary
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		
DW-AD-613-M30		DW-AS-613-M30-002		DW-AD-503-M30-120		DW-AD-503-M30		
DW-AD-611-M30		DW-AS-611-M30-002		DW-AD-501-M30-120		DW-AD-501-M30		
						DW-AD-504-M30		Index
PNP NC, NPN NC		PNP NC, NPN NC		PNP NC, NPN NC		NPN NC		

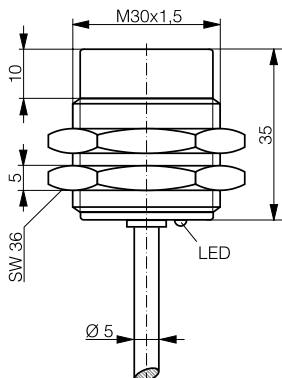
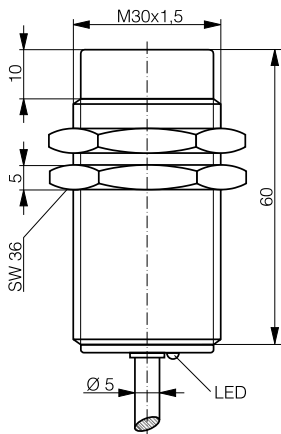
BASIC

INDUCTIVE

FAMILY	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M30	M30
OPERATING DISTANCE MM	22	22



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

EXTRA DISTANCE		EXTRA DISTANCE		Inductive	
M30		M30			Photoelectric
40		40			
				Capacitive	
					Safety
				RFID	
					Connectivity
				Accessories	
Chrome-plated brass		Chrome-plated brass			Glossary
PVC cable		PVC cable		Index	
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			
DW-AD-513-M30-120		DW-AD-513-M30			
DW-AD-511-M30-120		DW-AD-511-M30			
PNP NC, NPN NC		PNP NC, NPN NC			

Chrome-plated brass

PVC cable

IP 67

Non-embeddable

100 Hz

10 ... 30 VDC

-25 ... +70°C / -13 ... +158°F

≤ 200 mA

DW-AD-513-M30-120

DW-AD-511-M30-120

PNP NC, NPN NC

Chrome-plated brass

PVC cable

IP 67

Non-embeddable

100 Hz

10 ... 30 VDC

-25 ... +70°C / -13 ... +158°F

≤ 200 mA

DW-AD-513-M30

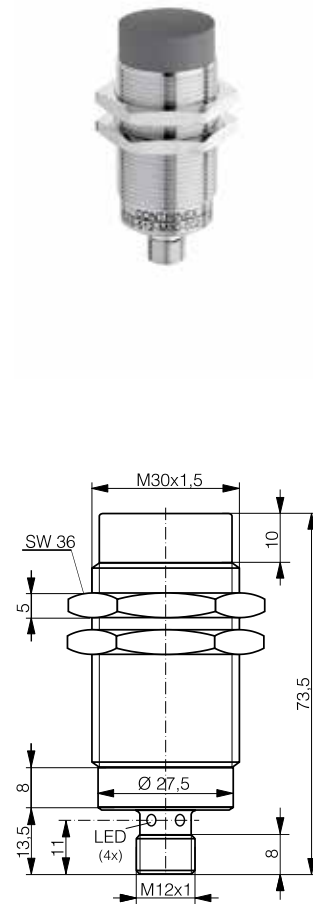
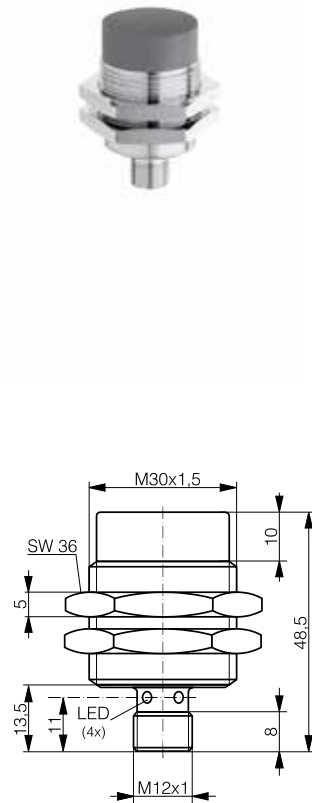
DW-AD-511-M30

PNP NC, NPN NC

BASIC

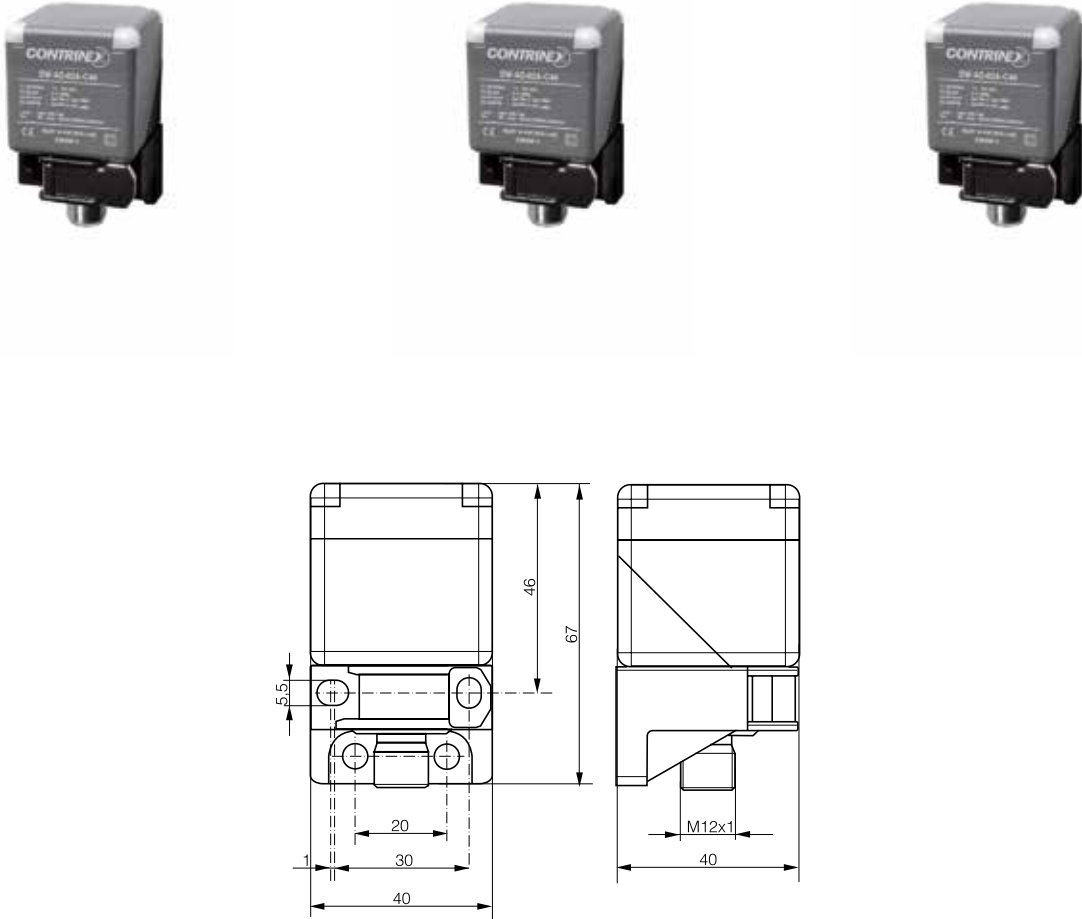
INDUCTIVE

FAMILY	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE MM	M30	M30
OPERATING DISTANCE MM	40	40



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			Inductive
□ 40 x 40	□ 40 x 40	□ 40 x 40	
15	20	30	
			Photoelectric
			Ultrasonic
			Capacitive
			Safety
			RFID
			Connectivity
PA GF	PA GF	PA GF	Accessories
Connector S12	Connector S12	Connector S12	
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	Glossary
Embeddable	Embeddable	Non-embeddable	
100 Hz	100 Hz	100 Hz	Index
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	
DW-AS-60A-C44	DW-AS-62A-C44	DW-AS-61A-C44	
DW-AS-60B-C44	DW-AS-62B-C44	DW-AS-61B-C44	

BASIC

FAMILY

CLASSICS

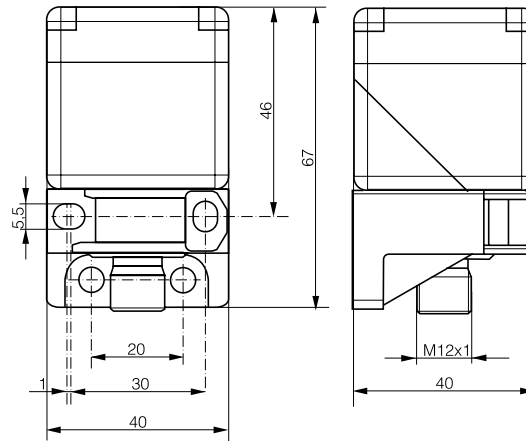
HOUSING SIZE MM

□ 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

DW-AS-63A-C44

NPN NO + NC

DW-AS-63B-C44

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

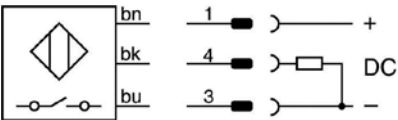
RANGE OVERVIEW	Housing size	Classics	Extra Distance	Full Inox
MINIATURE	Ø 3 mm	p. 71-72		
	M4	p. 72-73		
	Ø 4 mm	p. 73-75	p. 75	p. 75
	M5	p. 76-77	p. 77	p. 78
	C5	p. 78-79		

FAMILY	
HOUSING SIZE MM	
OPERATING DISTANCE MM	

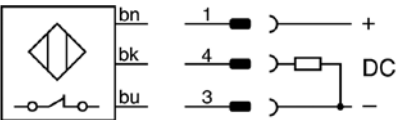
INDUCTIVE

WIRING DIAGRAMS

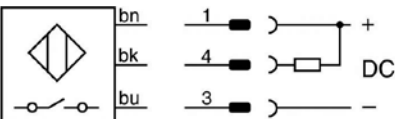
PNP NO



PNP NC

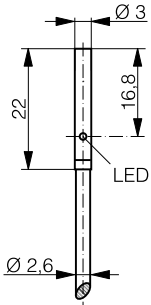
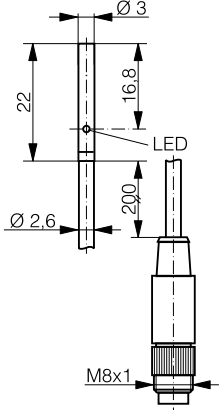
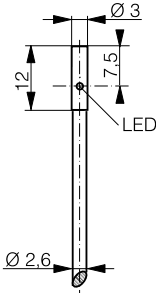
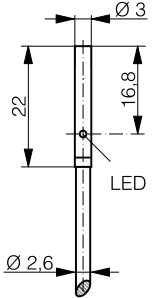


NPN NO



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	

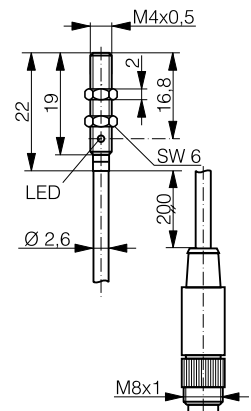
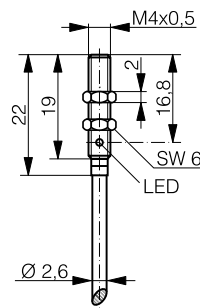
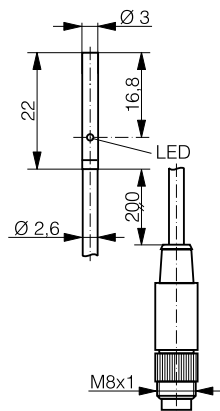
MINIATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 3	Ø 3	Ø 3	Ø 3	
0.6	0.6	1	1	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AD-603-03	DW-AV-603-03-276	DW-AD-623-03-960	DW-AD-623-03	
DW-AD-601-03	DW-AV-601-03-276	DW-AD-621-03-960	DW-AD-621-03	
DW-AD-604-03				
NPN NC	PNP NC, NPN NC		PNP NC, NPN NC	

MINIATURE

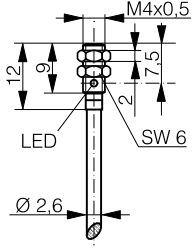
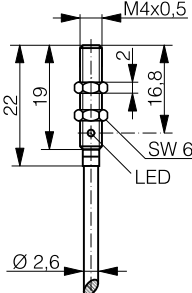
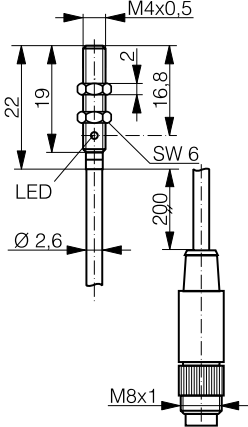
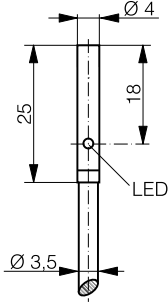
INDUCTIVE

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	DW-AV-623-03-276	DW-AD-603-M4	DW-AV-603-M4-276
NPN NO	DW-AV-621-03-276	DW-AD-601-M4	DW-AV-601-M4-276
PNP NC		DW-AD-604-M4	
Other types available	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

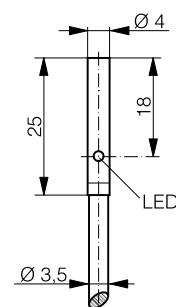
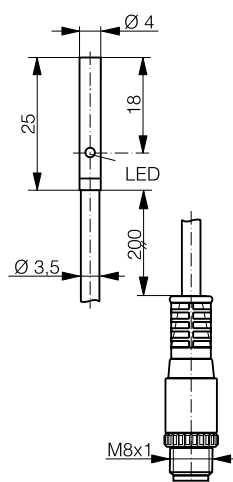
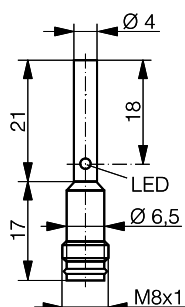
MINIATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M4	M4	M4	Ø 4	
1	1	1	0.8	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AD-623-M4-960	DW-AD-623-M4	DW-AV-623-M4-276	DW-AD-603-04	
DW-AD-621-M4-960	DW-AD-621-M4	DW-AV-621-M4-276	DW-AD-601-04	
			DW-AD-604-04	
	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	

MINIATURE

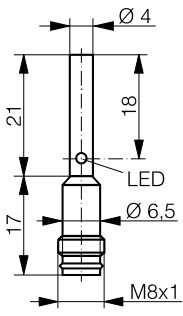
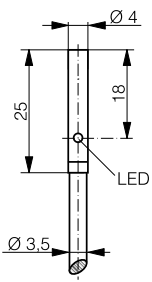
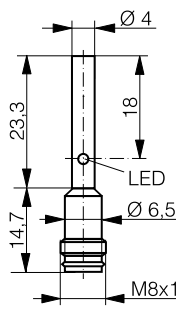
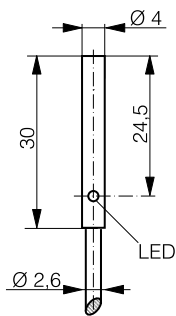
INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 4	Ø 4	Ø 4
OPERATING DISTANCE MM	0.8	0.8	1.5



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	DW-AS-603-04	DW-AV-603-04-236	DW-AD-623-04
NPN NO	DW-AS-601-04	DW-AV-601-04-236	DW-AD-621-04
PNP NC			DW-AD-624-04
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

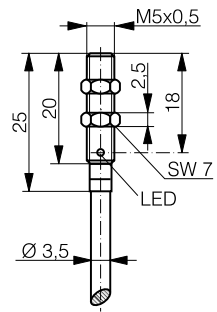
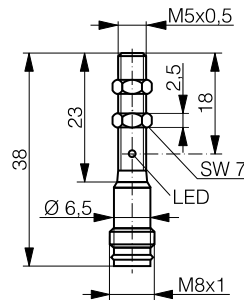
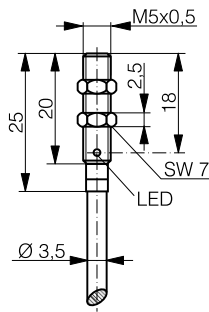
MINIATURE

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	FULL INOX	Inductive
Ø 4	Ø 4	Ø 4	Ø 4	
1.5	2.5	2.5	3	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-AS-623-04	DW-AD-503-04	DW-AS-503-04	DW-AD-713-04	
DW-AS-621-04	DW-AD-501-04	DW-AS-501-04	DW-AD-711-04	
		DW-AS-504-04		
PNP NC, NPN NC	PNP NC, NPN NC	NPN NC		

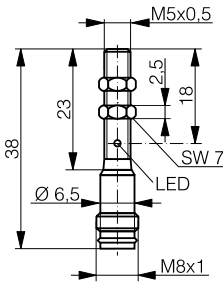
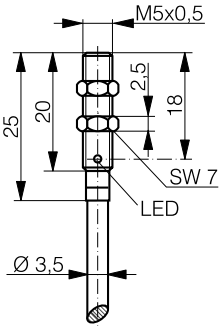
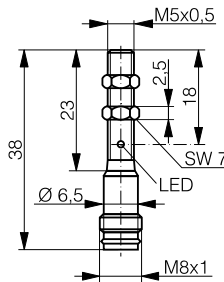
MINIATURE

INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M5	M5	M5
OPERATING DISTANCE MM	0.8	0.8	1.5



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	DW-AD-603-M5	DW-AS-603-M5	DW-AD-623-M5
NPN NO	DW-AD-601-M5	DW-AS-601-M5	DW-AD-621-M5
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
			Accessories
			Glossary
			Index
Stainless steel V2A	Nickel silver	Nickel silver	
Connector S8	PVC cable	Connector S8	
IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	
3000 Hz	800 Hz	800 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	
DW-AS-623-M5	DW-AD-503-M5	DW-AS-503-M5	
DW-AS-621-M5	DW-AD-501-M5	DW-AS-501-M5	
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

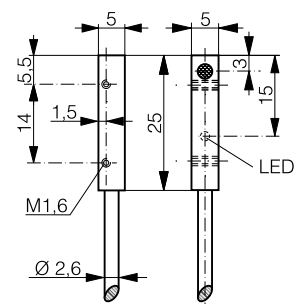
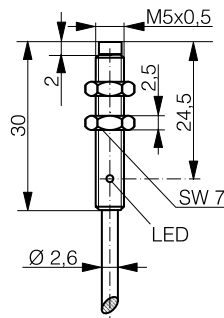
□ 5 x 5

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

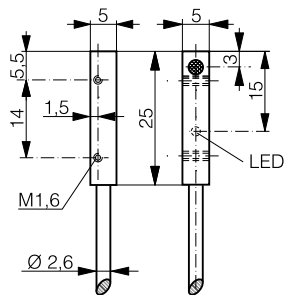
NPN NC

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)

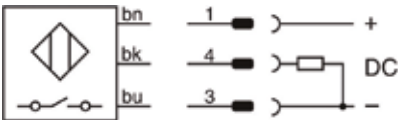
RANGE OVERVIEW	Housing size	Full Inox
EXTREME	M8	p. 83-84
	M12	p. 84-86
	M18	p. 86-88
	M30	p. 88-89
	C23	p. 90

FAMILY	
HOUSING SIZE	
OPERATING DISTANCE MM	

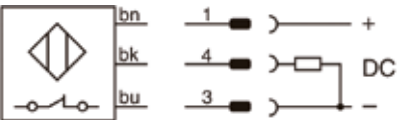
INDUCTIVE

WIRING DIAGRAMS

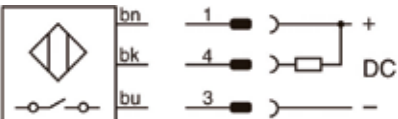
PNP NO



PNP NC

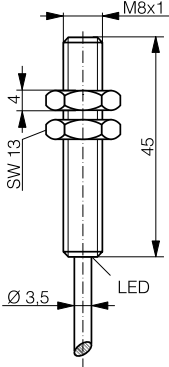
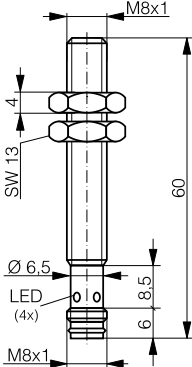
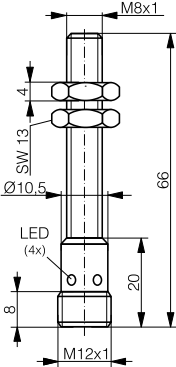
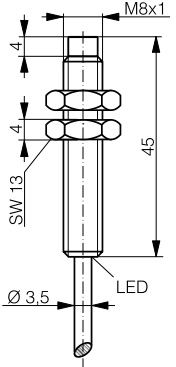


NPN NO



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	

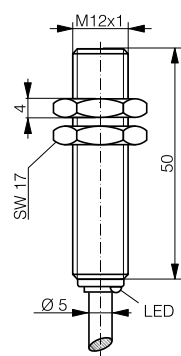
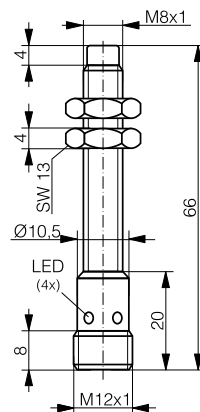
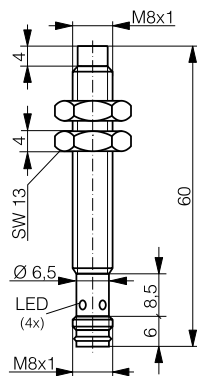
EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX	Inductive
M8	M8	M8	M8	
3	3	3	6	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	
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	
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	
DW-AD-703-M8	DW-AS-703-M8-001	DW-AS-703-M8	DW-AD-713-M8	
DW-AD-701-M8	DW-AS-701-M8-001	DW-AS-701-M8	DW-AD-711-M8	
DW-AD-704-M8			DW-AD-714-M8	
NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC	Index

EXTREME

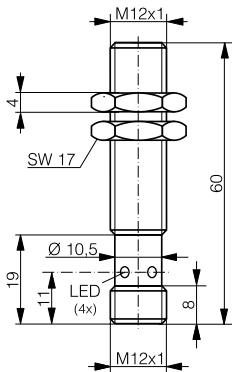
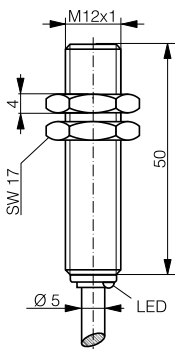
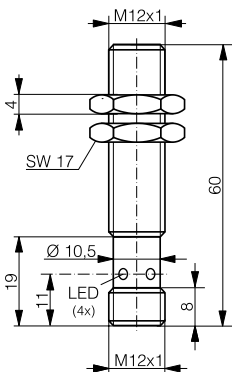
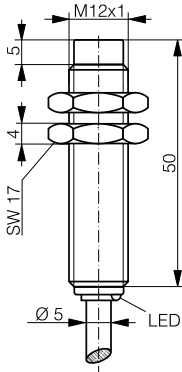
INDUCTIVE

FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M8	M8	M12
OPERATING DISTANCE MM	6	6	2



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

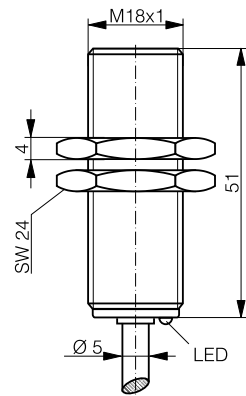
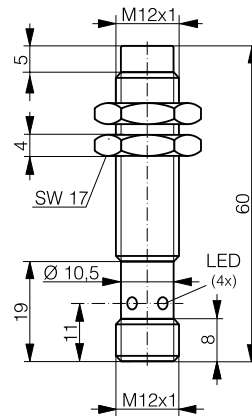
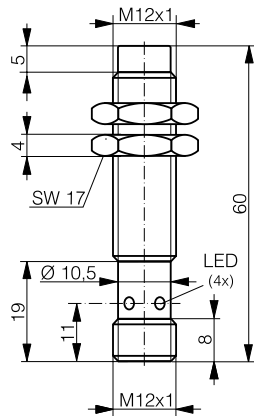
EXTREME

FULL INOX		FULL INOX		FULL INOX		FULL INOX		Inductive
M12		M12		M12		M12		
2		6		6		10		Photoelectric
								
								Capacitive
								RFID
								Accessories
								Index
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		
DW-AS-703-M12-303		DW-AD-703-M12		DW-AS-703-M12		DW-AD-713-M12		
DW-AS-701-M12-303		DW-AD-701-M12		DW-AS-701-M12		DW-AD-711-M12		
				DW-AS-704-M12				
PNP NC, NPN NC		PNP NC, NPN NC		NPN NC		PNP NC, NPN NC		

EXTREME

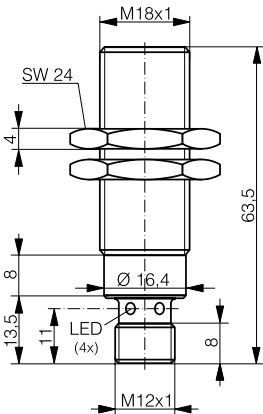
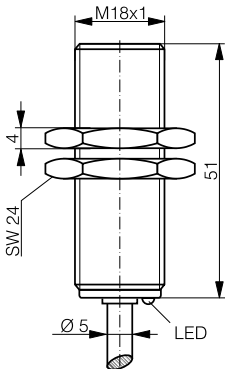
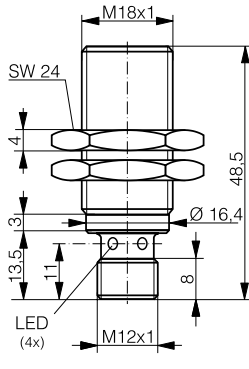
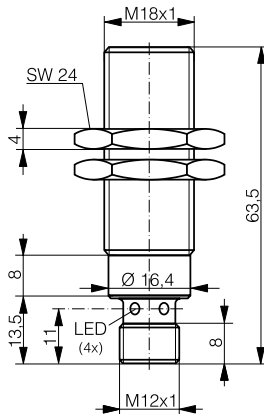
INDUCTIVE

FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M12	M12	M18
OPERATING DISTANCE MM	10	15	5



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	DW-AS-713-M12	DW-AS-733-M12	DW-AD-703-M18-303
NPN NO	DW-AS-711-M12	DW-AS-731-M12	DW-AD-701-M18-303
PNP NC			
Other types available	PNP NC, NPN NC		PNP NC, NPN NC

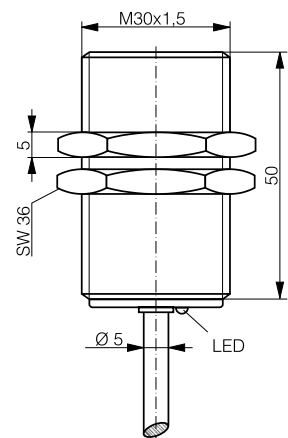
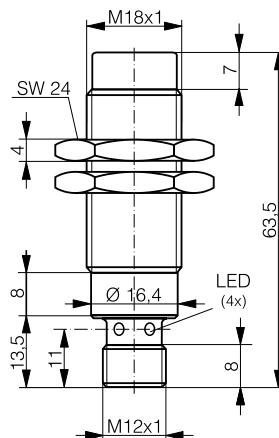
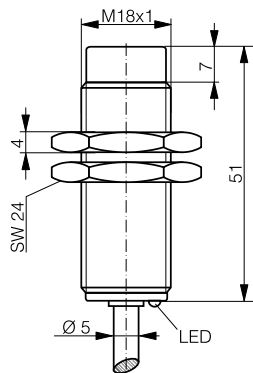
EXTREME

FULL INOX		FULL INOX		FULL INOX		FULL INOX		Inductive
M18		M18		M18		M18		
5		10		10		10		
								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		
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		Glossary
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		Index
DW-AS-703-M18-303		DW-AD-703-M18		DW-AS-703-M18-120		DW-AS-703-M18-002		
DW-AS-701-M18-303		DW-AD-701-M18		DW-AS-701-M18-120		DW-AS-701-M18-002		
		DW-AD-704-M18				DW-AS-704-M18-002		
PNP NC, NPN NC		NPN NC		PNP NC, NPN NC		NPN NC		

EXTREME

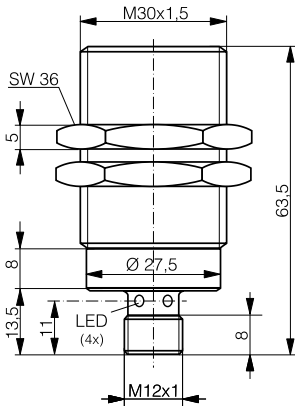
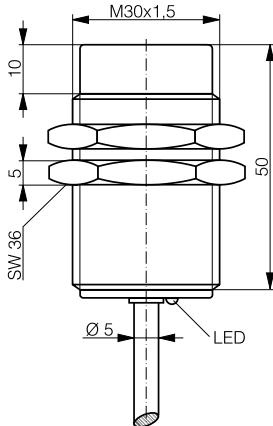
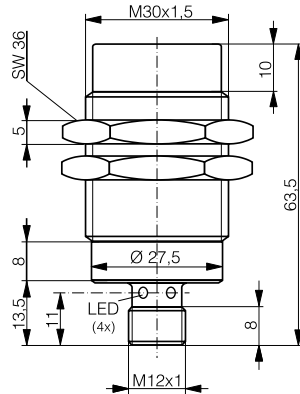
INDUCTIVE

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



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	DW-AD-713-M18	DW-AS-713-M18-002	DW-AD-703-M30
NPN NO	DW-AD-711-M18	DW-AS-711-M18-002	DW-AD-701-M30
PNP NC			DW-AD-704-M30
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

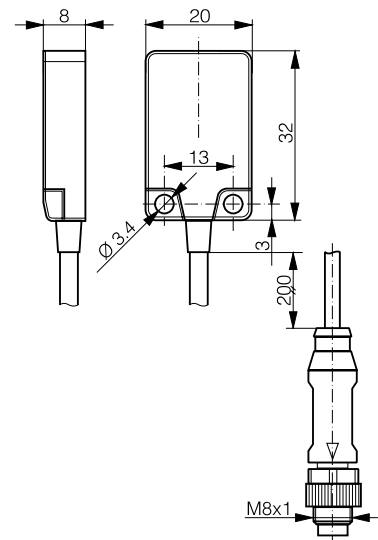
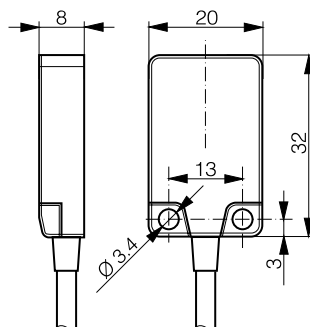
EXTREME

FULL INOX		FULL INOX		FULL INOX		Inductive
M30		M30		M30		
20		40		40		
						Photoelectric
						Ultrasonic
						Capacitive
						Safety
						RFID
						Connectivity
						Accessories
Stainless steel V2A		Stainless steel V2A		Stainless steel V2A		Glossary
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		Index
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		
DW-AS-703-M30-002		DW-AD-713-M30		DW-AS-713-M30-002		
DW-AS-701-M30-002		DW-AD-711-M30		DW-AS-711-M30-002		
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	DW-AD-703-C23	DW-AV-703-C23-276
NPN NO	DW-AD-701-C23	DW-AV-701-C23-276
Other types available		





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	Ø 3 mm	p. 95	
	M5	p. 95	
	Ø 6.5 mm		p. 95

FAMILY

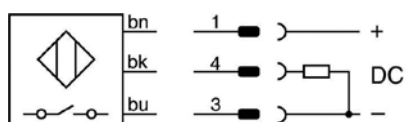
HOUSING SIZE MM

OPERATING DISTANCE MM

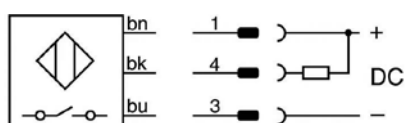
INDUCTIVE

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

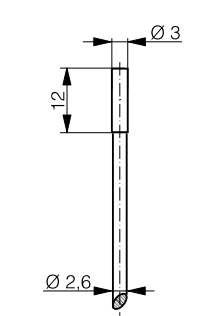
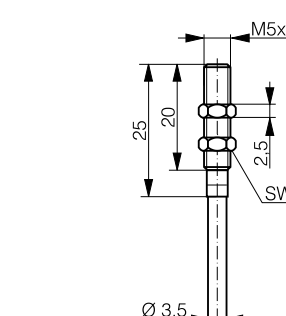
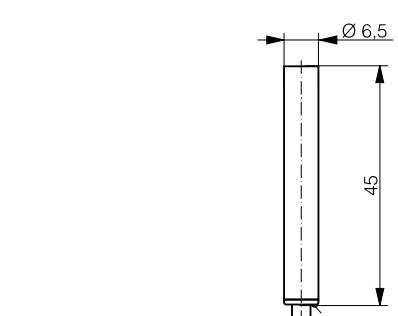
Output current

PNP NO

NPN NO

Other types available

EXTRA PRESSURE

CLASSICS		CLASSICS	EXTRA DISTANCE		Inductive
Ø 3		M5	Ø 6.5		
0.8		0.6	2.5		
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
					Accessories
					Glossary
					Index
Ceramic ZrO ₂		Sapphire	Ceramic ZrO ₂		
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		
DW-AD-623-03E-961		DW-AD-603-M5E	DW-AD-503-065E		
DW-AD-621-03E-961		DW-AD-601-M5E	DW-AD-501-065E		
PNP NC, NPN NC		PNP NC, NPN NC	PNP NC, NPN NC		



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)

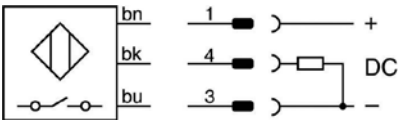
RANGE OVERVIEW	Housing size	Extra Distance	Full Inox
HIGH PRESSURE	M5 / P5	p. 99	
	M8 / P8	p. 99	
	M12 / P12	p. 99-101	p. 101
	M14 / P20	p. 101-102	

FAMILY	
HOUSING SIZE	
OPERATING DISTANCE MM	

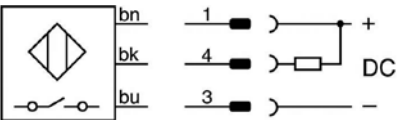
INDUCTIVE

WIRING DIAGRAMS

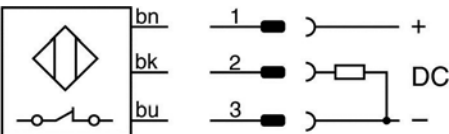
PNP NO



NPN NO

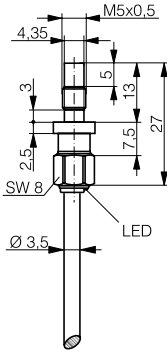
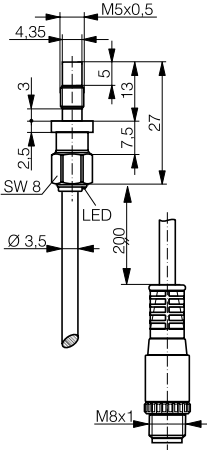
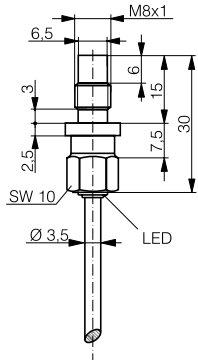
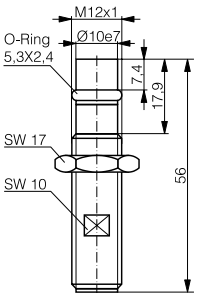


PNP NC



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	

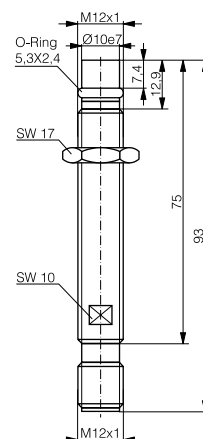
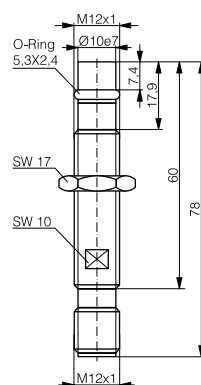
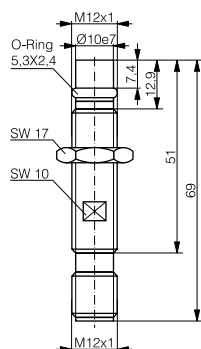
HIGH PRESSURE

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M5 (P5)	M5 (P5)	M8 (P8)	M12 (P12)	
1	1	1.5	1.5 / 2.5	Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
Ceramic ZrO ₂	Ceramic ZrO ₂	Ceramic ZrO ₂	Ceramic ZrO ₂	Accessories
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	Glossary
-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	
DW-AD-503-P5	DW-AV-503-P5-276	DW-AD-503-P8		
DW-AD-501-P5	DW-AV-501-P5-276	DW-AD-501-P8		
			DW-AS-503-P12-630	
			DW-AS-504-P12-630	
			DW-AS-523-P12-630	Index
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NO, NPN NC	

HIGH PRESSURE

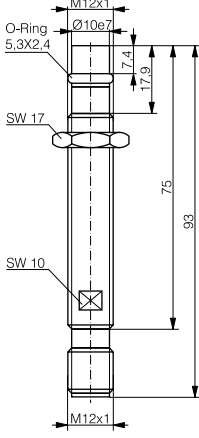
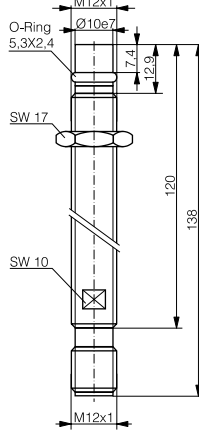
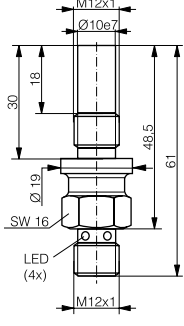
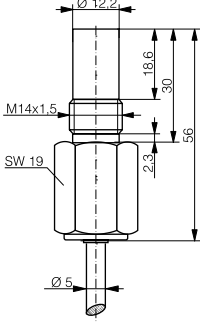
INDUCTIVE

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 ₂	Ceramic ZrO ₂	Ceramic ZrO ₂
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	DW-AS-503-P12	DW-AS-503-P12-627	DW-AS-503-P12-621
NPN NO	DW-AS-501-P12	DW-AS-501-P12-627	DW-AS-501-P12-621
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	Inductive
M12 (P12)		M12 (P12)	M12 (P12)	M14 (P20)	
1.5		1.5	1.5	3	
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
Ceramic ZrO ₂		Ceramic ZrO ₂	Stainless steel V4A / AISI 316L	Ceramic ZrO ₂	Accessories
500 bar		500 bar	500 bar	500 bar	
1000 bar		1000 bar	800 bar	1000 bar	Glossary
Stainless steel V2A		Stainless steel V2A	Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L	
Connector S12		Connector S12	Connector S12	PUR cable	Index
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	
DW-AS-503-P12-635		DW-AS-503-P12-622	DW-LS-703-P12G	DW-AD-503-P20	
DW-AS-501-P12-635		DW-AS-501-P12-622	DW-LS-701-P12G	DW-AD-501-P20	
PNP NC, NPN NC,		PNP NC, NPN NC,	PNP NC, NPN NC	PNP NC, NPN NC	
2.5 mm operating distance		2.5 mm operating distance			

HIGH PRESSURE

FAMILY

EXTRA DISTANCE

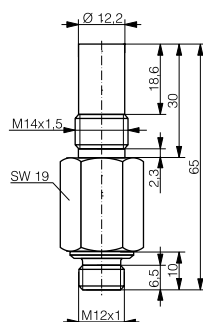
HOUSING SIZE

M14 (P20)

OPERATING DISTANCE MM

3

INDUCTIVE



DATA

Sensing face material

Ceramic ZrO₂

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

DW-AS-503-P20

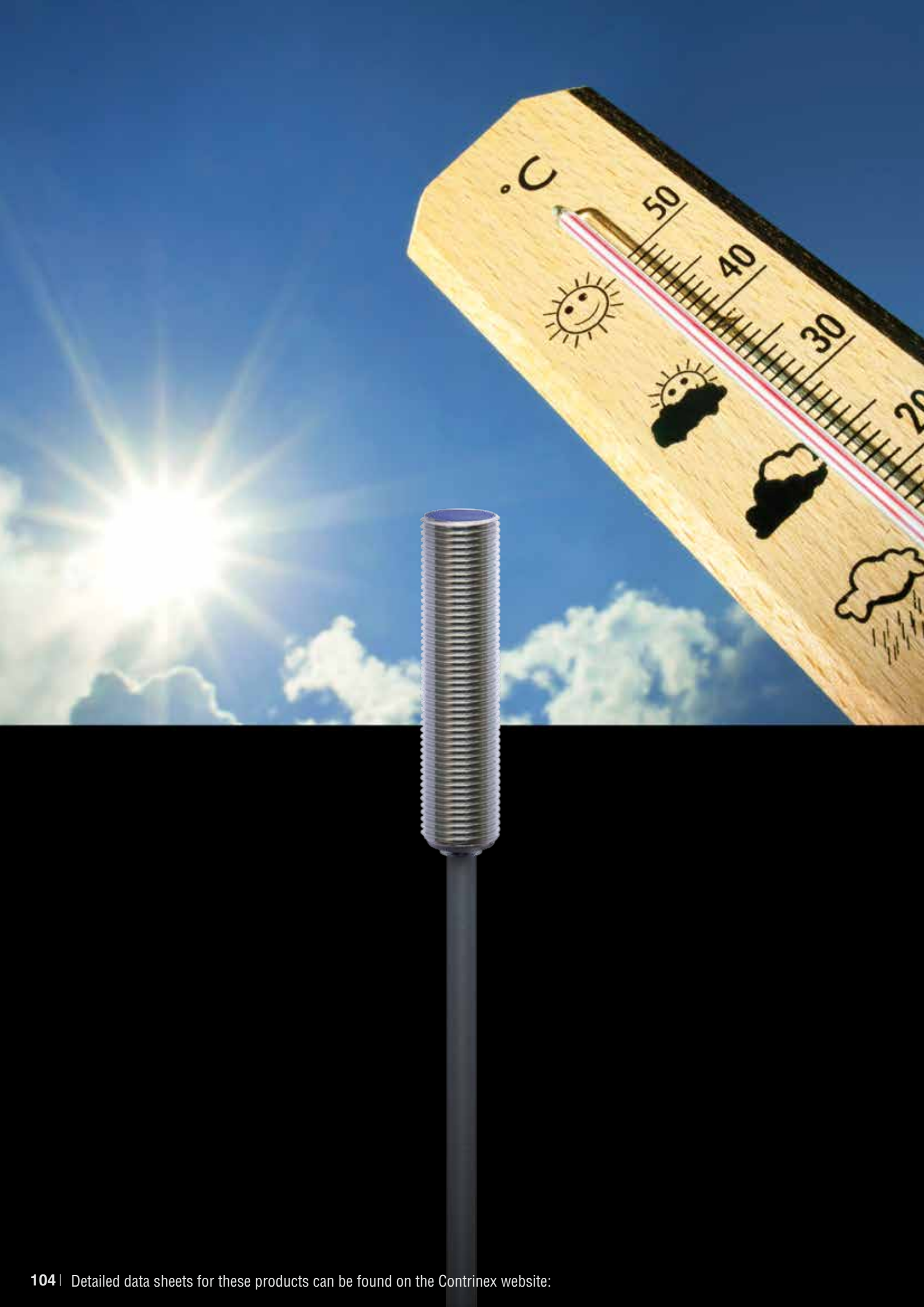
NPN NO

DW-AS-501-P20

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

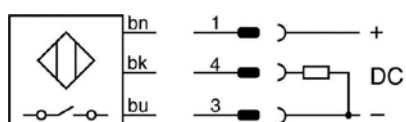
RANGE OVERVIEW	Housing size	Classics
EXTRA TEMPERATURE	M5	p. 107
	M8	p. 107
	M12	p. 107
	M18	p. 107

FAMILY	
HOUSING SIZE	
OPERATING DISTANCE MM	

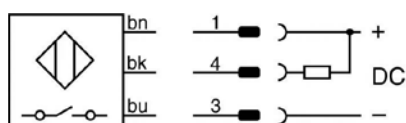
INDUCTIVE

WIRING DIAGRAMS

PNP NO

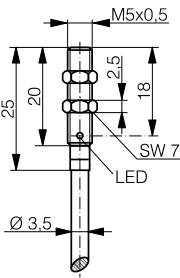
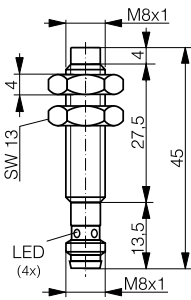
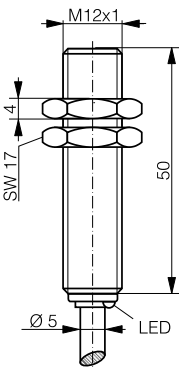
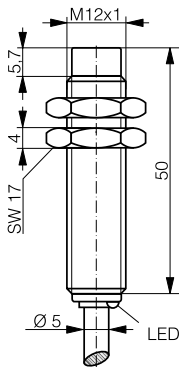
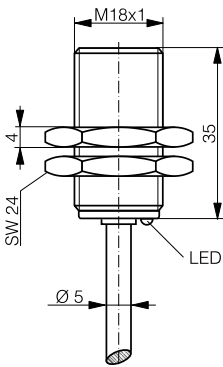


NPN NO



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	Inductive
M5	M8	M12	M12	M18	
0.8	4	2	4	5	
					Photoelectric
					Ultrasonic
					Capacitive
					Safety
					RFID
					Connectivity
					Accessories
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	Glossary
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	
DW-AD-603-M5-735	DW-AS-633-M8-732	DW-AD-603-M12-734	DW-AD-613-M12-733	DW-AD-603-M18-718	Index
DW-AD-601-M5-735					



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

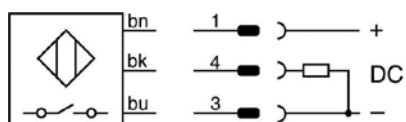
HOUSING SIZE

OPERATING DISTANCE MM

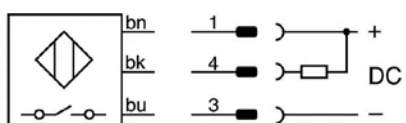
INDUCTIVE

WIRING DIAGRAMS

PNP NO



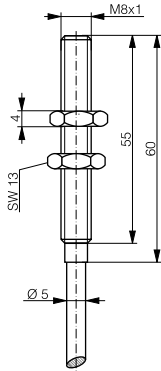
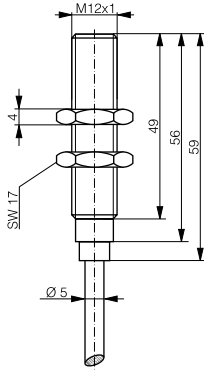
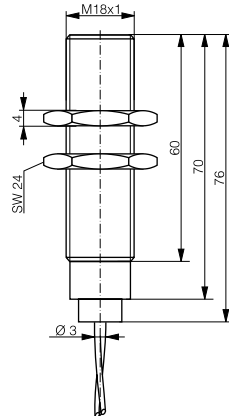
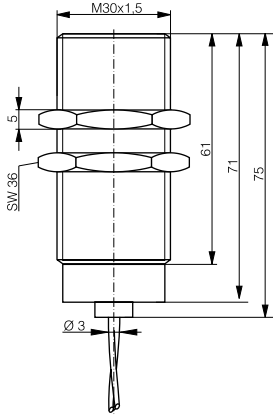
NPN NO



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

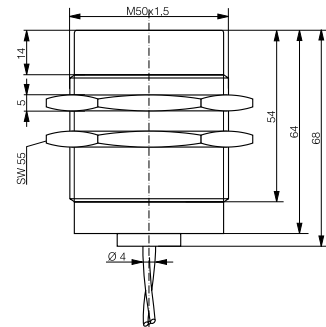
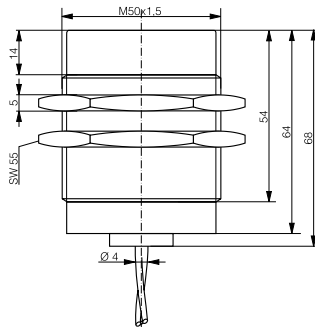
HIGH TEMPERATURE

CLASSICS		CLASSICS		CLASSICS		CLASSICS		Inductive
M8		M12		M18		M30		
2		3		5		10		
								Photoelectric
								Ultrasonic
								Capacitive
								Safety
								RFID
								Connectivity
								Accessories
Built-in		Built-in		Built-in		Built-in		Glossary
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		Index
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		
DW-HD-623-M8-100		DW-HD-603-M12-200		DW-HD-603-M18-310		DW-HD-603-M30-310		
DW-HD-621-M8-100		DW-HD-601-M12-200		DW-HD-601-M18-310		DW-HD-601-M30-310		
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	DW-HD-613-M50-511	DW-HD-613-M50-503
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

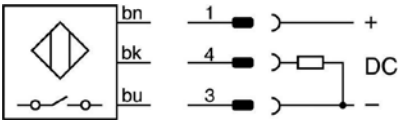
RANGE OVERVIEW	Housing size	Classics	Full Inox
WASHDOWN	M12	p. 117	p. 117
	M18		p. 117-118
	M30		p. 118

FAMILY	
HOUSING SIZE	
OPERATING DISTANCE MM	

INDUCTIVE

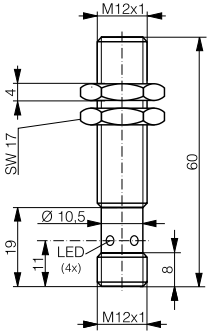
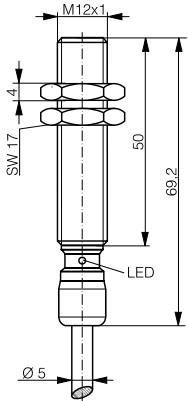
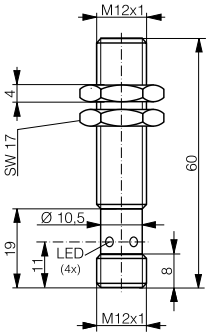
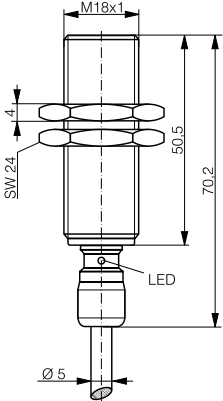
WIRING DIAGRAM

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	

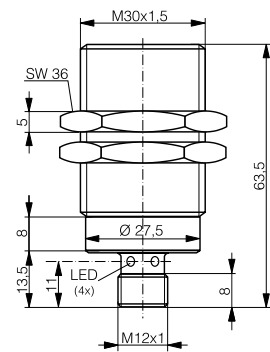
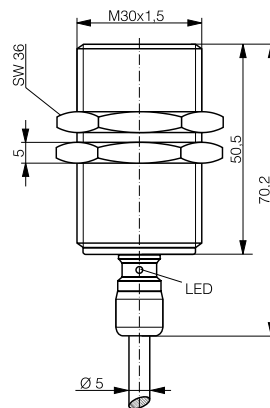
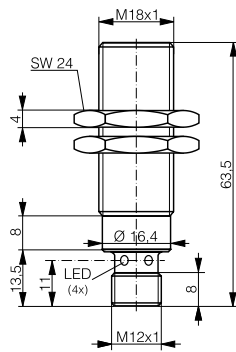
WASHDOWN

CLASSICS	FULL INOX	FULL INOX	FULL INOX	Inductive
M12	M12	M12	M18	
2	6	6	10	
				Photoelectric
				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	Glossary
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	
DW-LS-603-M12	DW-LD-703-M12	DW-LS-703-M12	DW-LD-703-M18	Index
	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	DW-LS-703-M18-002	DW-LD-703-M30	DW-LS-703-M30-002
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 μm 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

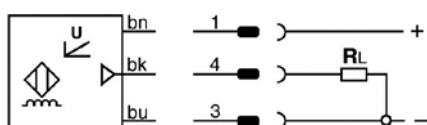
HOUSING SIZE MM

SENSING RANGE MM

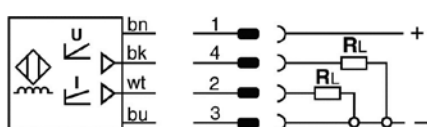
INDUCTIVE

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

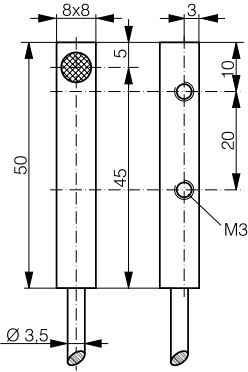
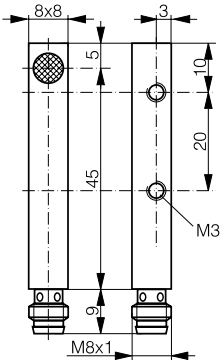
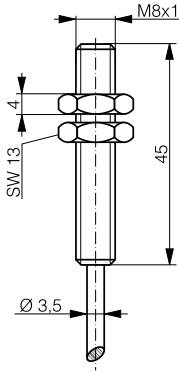
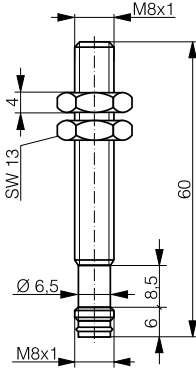
Output current

Output 0...10 V

Output 0...5 V

Other types available

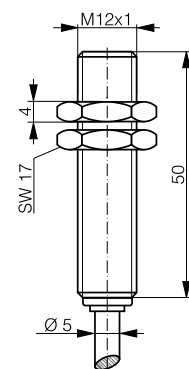
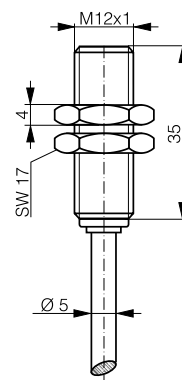
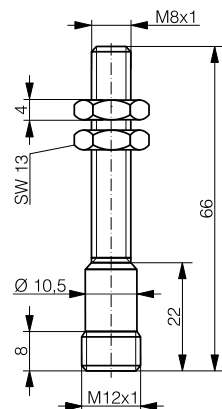
ANALOG OUTPUT

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
□ 8 x 8	□ 8 x 8	M8	M8	
0 ... 4	0 ... 4	0 ... 4	0 ... 4	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
-	-	-	-	
DW-AD-509-C8-390	DW-AS-509-C8-390	DW-AD-509-M8-390	DW-AS-509-M8-390	
		DW-AD-509-M8		
			On request	

ANALOG OUTPUT

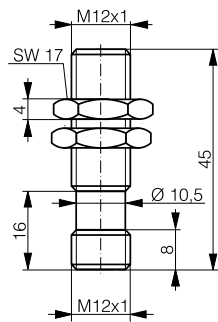
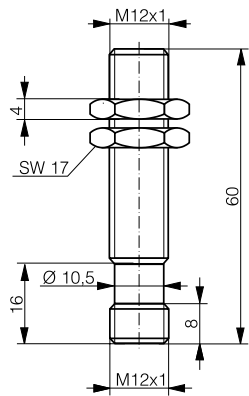
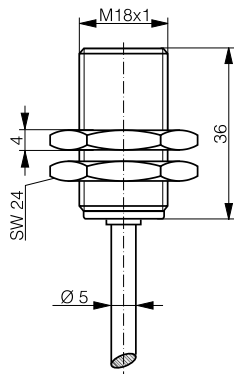
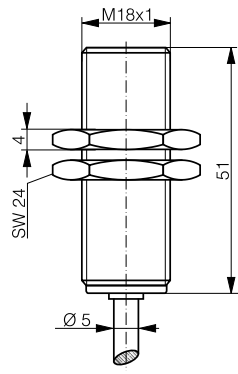
INDUCTIVE

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		DW-AD-509-M12-120	DW-AD-509-M12
Output 0...10 V	DW-AS-509-M8-393	DW-AD-509-M12-320	
Outputs 0...10 V / 4...20 mA			DW-AD-509-M12-390
Other types available	On request		

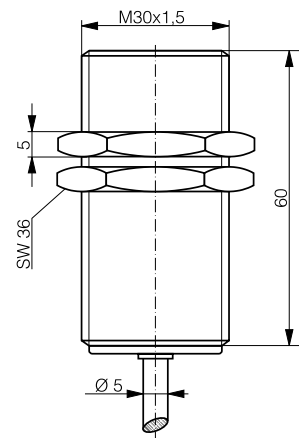
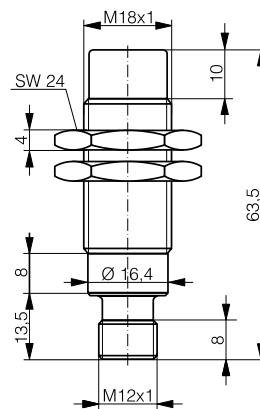
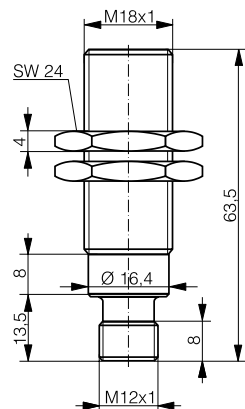
ANALOG OUTPUT

EXTRA DISTANCE		EXTRA DISTANCE		EXTRA DISTANCE		EXTRA DISTANCE		Inductive
M12		M12		M18		M18		
0 ... 6		0 ... 6		0 ... 10		0 ... 10		Photoelectric
								
								Capacitive
								RFID
								Accessories
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		Index
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)		
DW-AS-509-M12-120		DW-AS-509-M12		DW-AD-509-M18-120		DW-AD-509-M18		
DW-AS-509-M12-320								
		DW-AS-509-M12-390		DW-AD-509-M18-320		DW-AD-509-M18-390		
						On request		

ANALOG OUTPUT

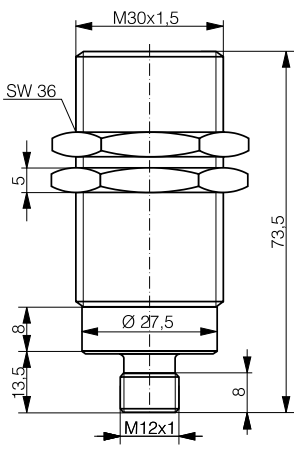
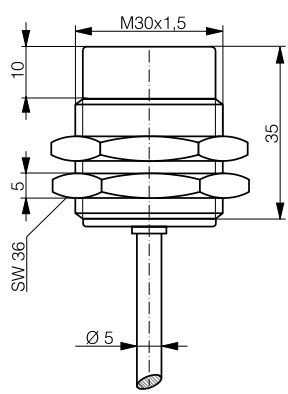
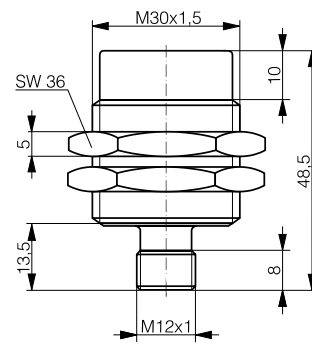
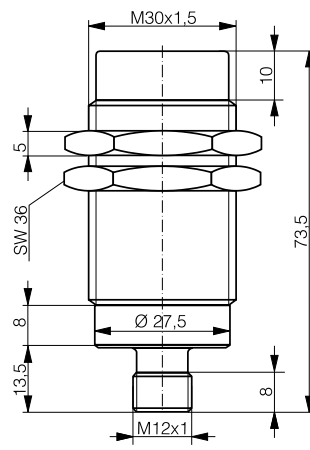
INDUCTIVE

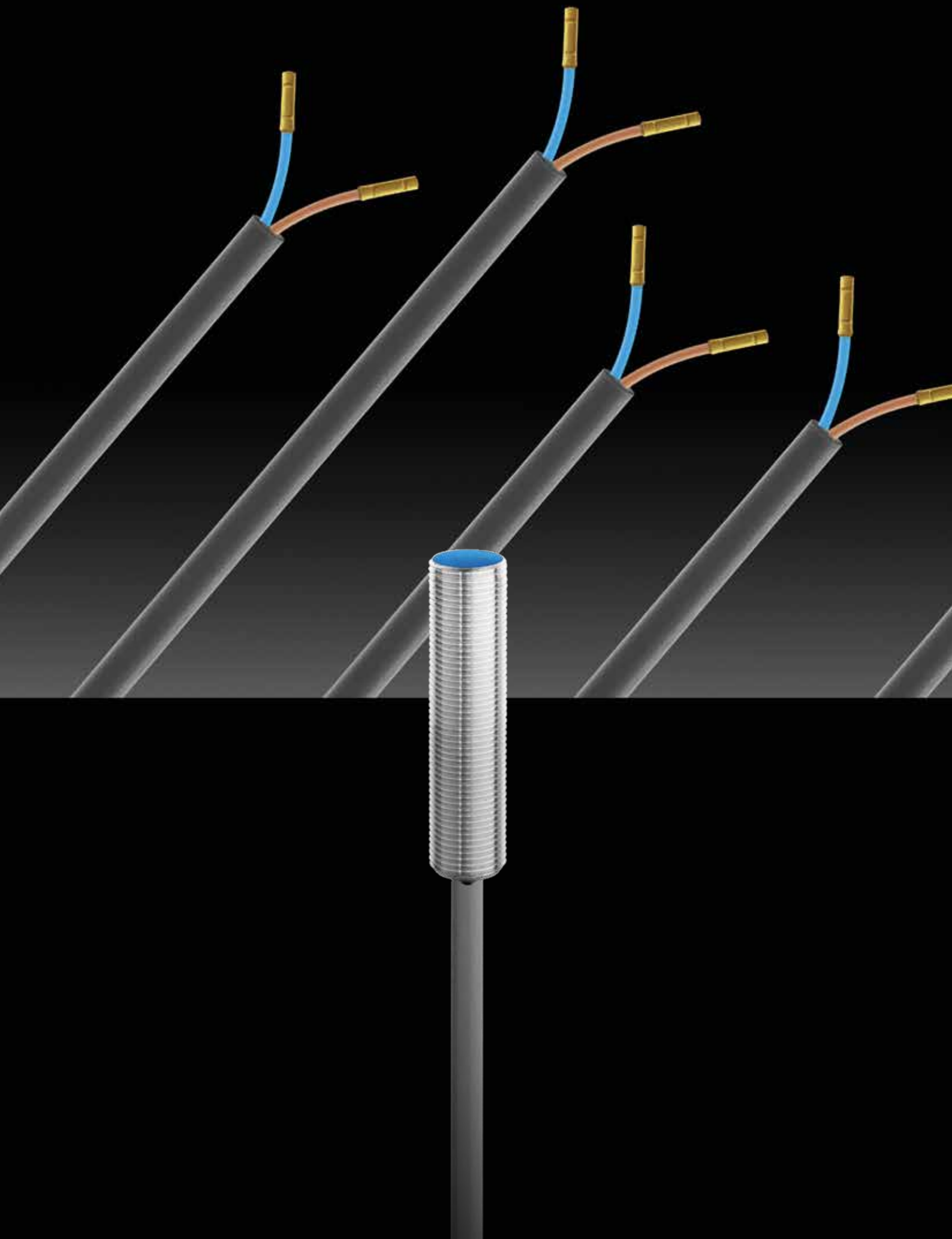
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M18	M18	M30
SENSING RANGE MM	0 ... 10	0 ... 20	0 ... 20



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	DW-AS-509-M18-002	DW-AS-519-M18-002	DW-AD-509-M30
Outputs 0...10 V / 4...20 mA	DW-AS-509-M18-390	DW-AS-519-M18-390	DW-AD-509-M30-390
Other types available	On request	On request	On request

ANALOG OUTPUT

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	Inductive
M30	M30	M30	M30	Photoelectric
0 ... 20	0 ... 40	0 ... 40	0 ... 40	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
200 Hz (at s = 10 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)	Glossary
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)	Index
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)	
DW-AS-509-M30-002	DW-AD-519-M30-120	DW-AS-519-M30-120	DW-AS-519-M30-002	
DW-AS-509-M30-390	DW-AD-519-M30-320	DW-AS-519-M30-320	DW-AS-519-M30-390	
On request	On request	On request	On request	



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

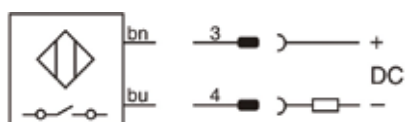
HOUSING SIZE

OPERATING DISTANCE MM

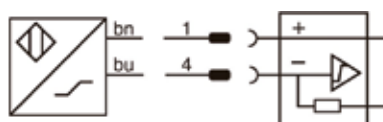
INDUCTIVE

WIRING DIAGRAMS

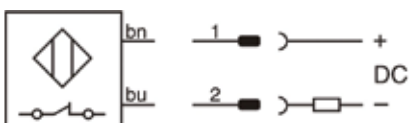
2-wire DC NO



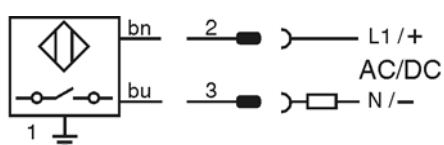
NAMUR



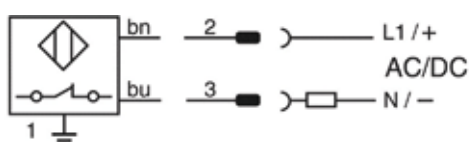
2-wire DC NC



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

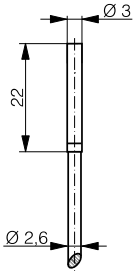
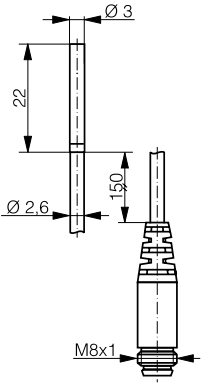
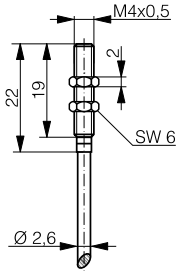
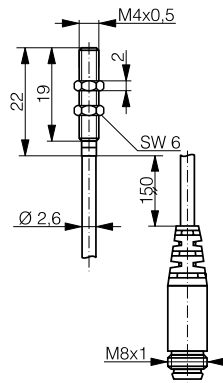
Output current

NAMUR

Other types available

* damped / non-damped

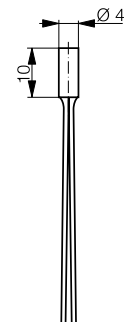
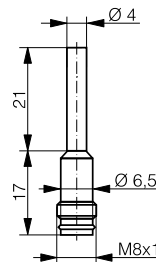
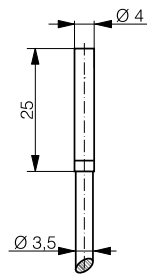
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
Ø 3	Ø 3	M4	M4	
0.6	0.6	0.6	0.6	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
NAMUR	NAMUR	NAMUR	NAMUR	Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	
PUR cable	PUR cable / Connector S8	PUR cable	PUR cable / Connector S8	
IP 67	IP 67	IP 67	IP 67	Glossary
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*	
DW-AD-605-03	DW-AS-605-03	DW-AD-605-M4	DW-AS-605-M4	Index

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



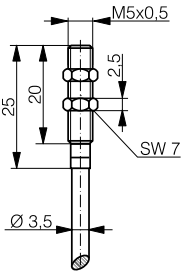
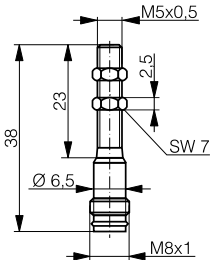
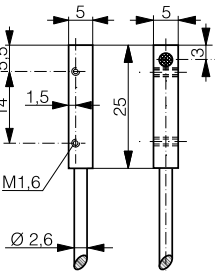
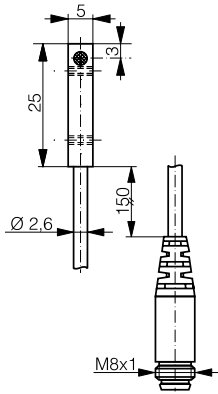
NAMUR

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	DW-AD-605-04	DW-AS-605-04	DW-AD-605-04K
Other types available			
* damped / non-damped			

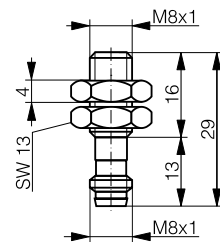
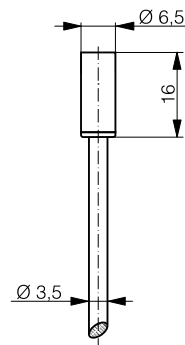
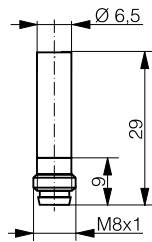
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M5	M5	5 x 5	5 x 5	
0.8	0.8	0.8	0.8	Photoelectric
				Ultrasonic
				Capacitive
NAMUR	NAMUR	NAMUR	NAMUR	Safety
				RFID
				Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Chrome-plated brass	Chrome-plated brass	Glossary
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*	
DW-AD-605-M5	DW-AS-605-M5	DW-AD-605-C5	DW-AS-605-C5	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



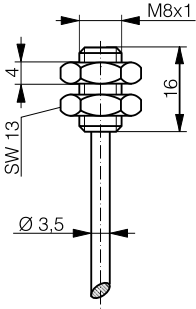
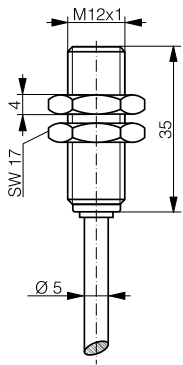
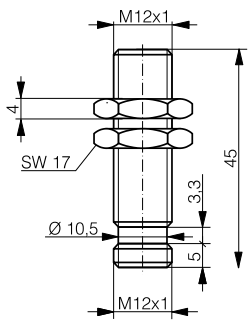
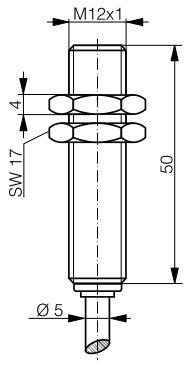
NAMUR

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	DW-AS-605-065-129	DW-AD-605-065-120	DW-AS-605-M8-129
Other types available			
* damped / non-damped			

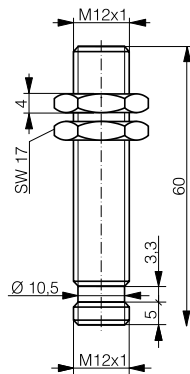
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M12	M12	M12	Photoelectric
1.5	2	2	2	Ultrasonic
				Capacitive
				Safety
NAMUR	NAMUR	NAMUR	NAMUR	RFID
				Connectivity
Stainless steel V2A	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Accessories
PVC cable	PVC cable	Connector S12	PVC cable	Glossary
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*	
DW-AD-605-M8-120	DW-AD-605-M12-120	DW-AS-605-M12-120	DW-AD-605-M12	Index

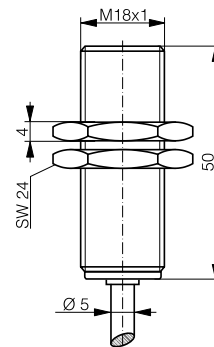
2-WIRE

INDUCTIVE

FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M18
OPERATING DISTANCE MM	2	5



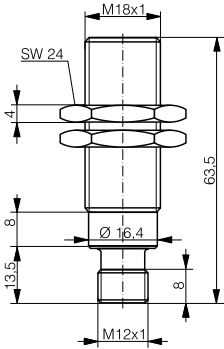
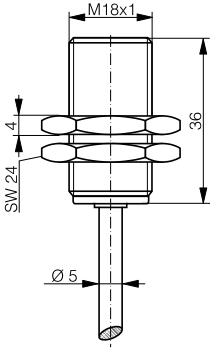
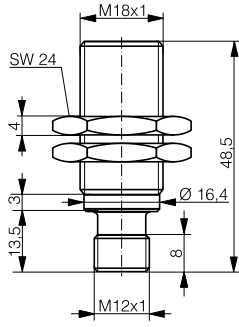
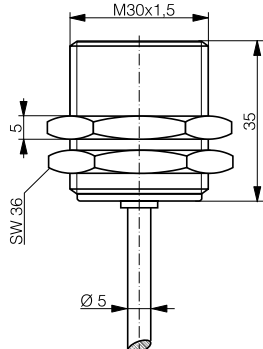
NAMUR



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	DW-AS-605-M12	DW-AD-605-M18
Other types available		
* damped / non-damped		

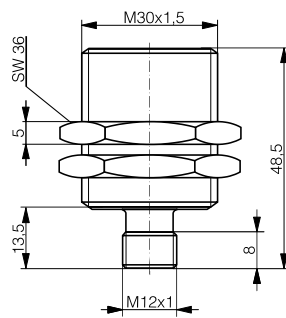
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M18	M18	M18	M30	
5	5	5	10	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	
Connector S12	PVC cable	Connector S12	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Embeddable	Glossary
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*	
DW-AS-605-M18-002	DW-AD-605-M18-120	DW-AS-605-M18-120	DW-AD-605-M30-120	Index

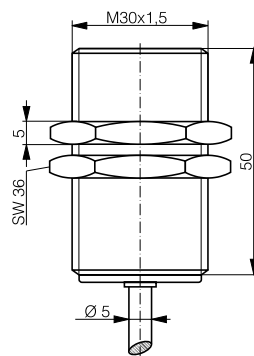
2-WIRE

INDUCTIVE

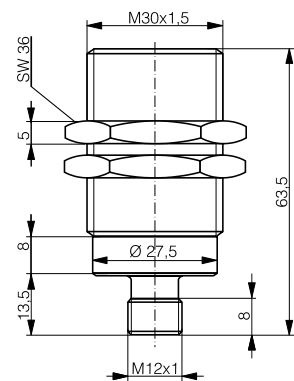
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30	M30
OPERATING DISTANCE MM	10	10	10



NAMUR



NAMUR



NAMUR

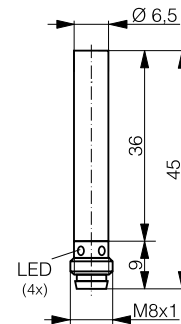
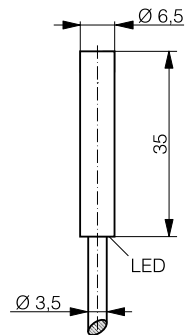
DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	400 Hz	400 Hz	400 Hz
Supply voltage range	7.7 ... 9 VDC	7.7 ... 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	DW-AS-605-M30-120	DW-AD-605-M30	DW-AS-605-M30-002
Other types available			
* damped / non-damped			



2-WIRE

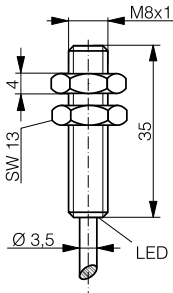
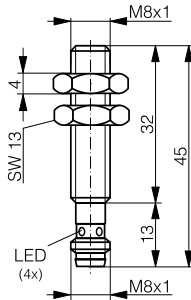
INDUCTIVE

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



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	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*
DC 2-wire NO	DW-DD-605-065	DW-DS-605-065
DC 2-wire NC	DW-DD-606-065	DW-DS-606-065
Other types available		

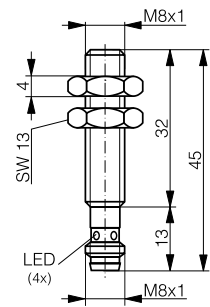
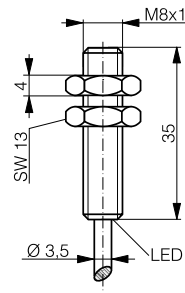
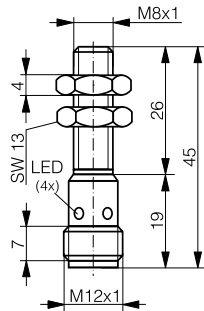
2-WIRE

CLASSICS		CLASSICS		Inductive	
M8		M8			
1.5		1.5			
				Photoelectric	
					Ultrasonic
				Capacitive	
				Safety	
				RFID	
				Connectivity	
				Accessories	
				Glossary	
				Index	
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			
DW-DD-605-M8		DW-DS-605-M8-001			
DW-DD-606-M8		DW-DS-606-M8-001			

2-WIRE

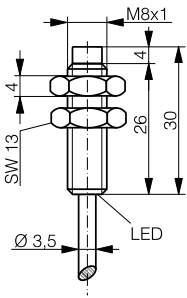
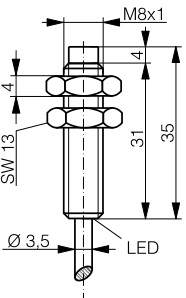
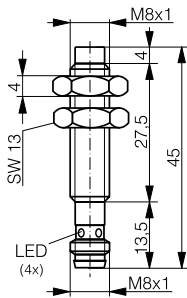
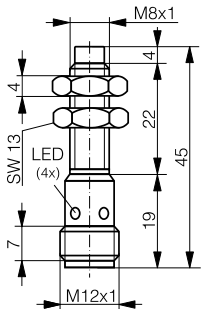
INDUCTIVE

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	DW-DS-605-M8	DW-DD-625-M8	DW-DS-625-M8-001
DC 2-wire NC	DW-DS-606-M8	DW-DD-626-M8	DW-DS-626-M8-001
Other types available			

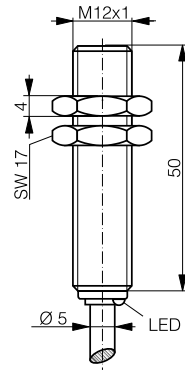
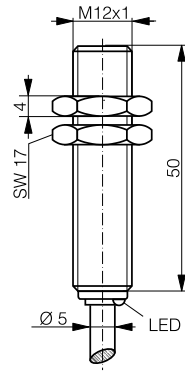
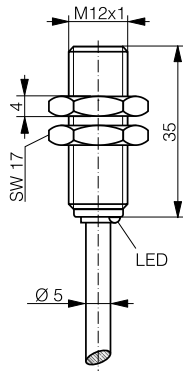
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M8	M8	M8	M8	Photoelectric
2.5	2.5	2.5	2.5	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Glossary
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	Index
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	
DW-DD-615-M8-122	DW-DD-615-M8	DW-DS-615-M8-001	DW-DS-615-M8	
DW-DD-616-M8-122	DW-DD-616-M8	DW-DS-616-M8-001	DW-DS-616-M8	

2-WIRE

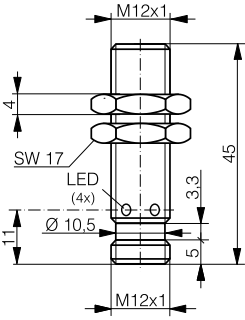
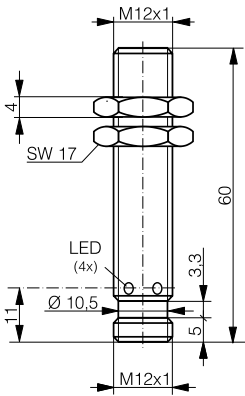
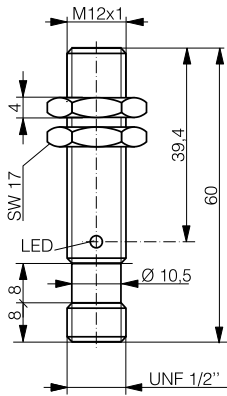
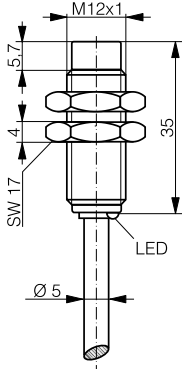
INDUCTIVE

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	DW-DD-605-M12-120	DW-DD-605-M12	DW-AD-607-M12 DW-AD-608-M12
DC 2-wire NC	DW-DD-606-M12-120	DW-DD-605-M12	
AC/DC 2-wire NO			
AC/DC 2-wire NC			
Other types available			

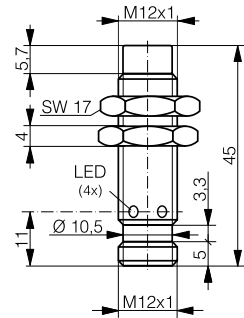
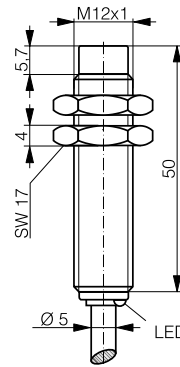
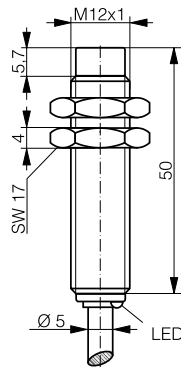
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M12	M12	M12	
2	2	2	4	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	
Connector S12	Connector S12	Connector 1/2"	PVC cable	
IP 67	IP 67	IP 67	IP 67	
Embeddable	Embeddable	Embeddable	Non-embeddable	
3000 Hz	3000 Hz	25 Hz (AC) / 3000 Hz (DC)	2500 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	
DW-DS-605-M12-120	DW-DS-605-M12		DW-DD-615-M12-120	
DW-DS-606-M12-120	DW-DS-606-M12	DW-AS-607-M12-069	DW-DD-616-M12-120	
		DW-AS-608-M12-069		Index

2-WIRE

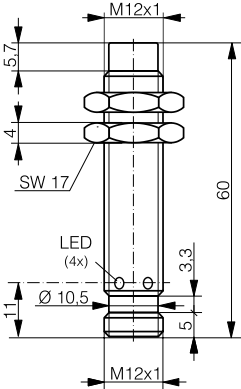
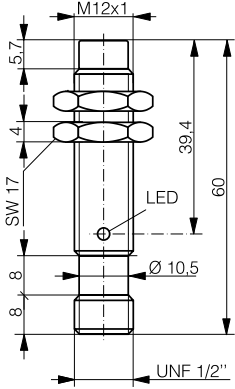
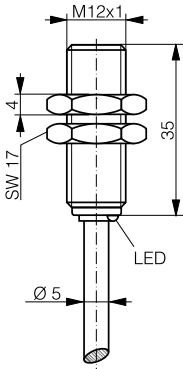
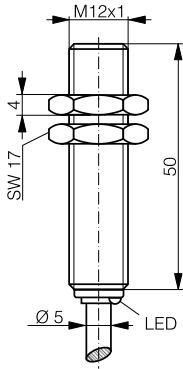
INDUCTIVE

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	DW-DD-615-M12		DW-DS-615-M12-120
DC 2-wire NC	DW-DD-616-M12		DW-DS-616-M12-120
AC/DC 2-wire NO		DW-AD-617-M12	
AC/DC 2-wire NC		DW-AD-618-M12	
Other types available			

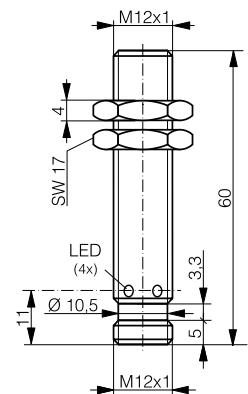
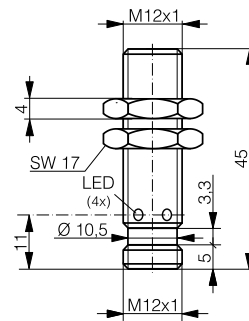
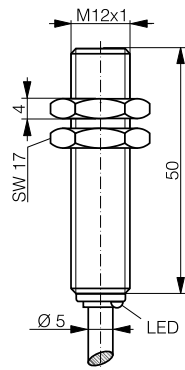
2-WIRE

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	
DW-DS-615-M12	DW-AS-617-M12-069	DW-DD-625-M12-120	DW-DD-625-M12	
DW-DS-616-M12	DW-AS-618-M12-069	DW-DD-626-M12-120	DW-DD-626-M12	

2-WIRE

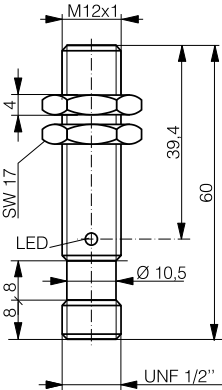
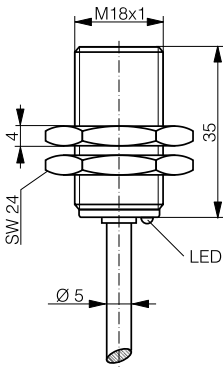
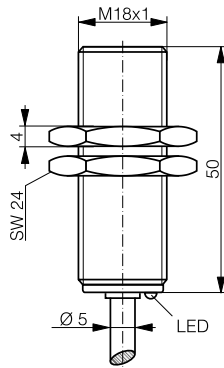
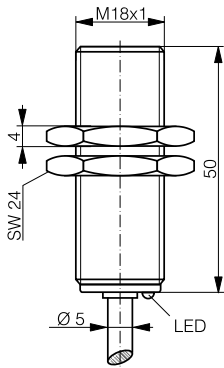
INDUCTIVE

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		DW-DS-625-M12-120	DW-DS-625-M12
DC 2-wire NC		DW-DS-626-M12-120	DW-DS-626-M12
AC/DC 2-wire NO	DW-AD-627-M12		
AC/DC 2-wire NC	DW-AD-628-M12		
Other types available			

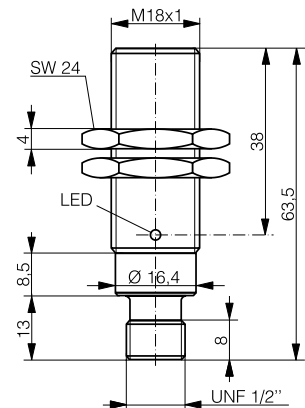
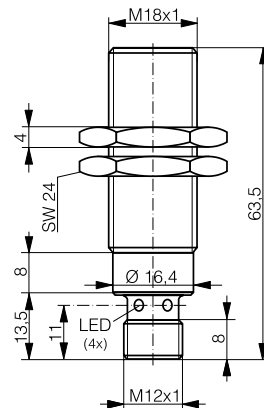
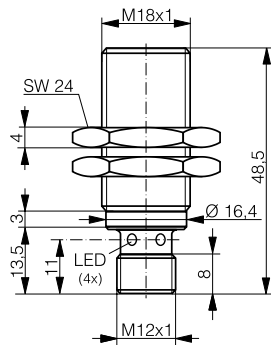
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M12	M18	M18	M18	Photoelectric
4	5	5	5	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Accessories
Connector 1/2"	PVC cable	PVC cable	PVC cable	Glossary
IP 67	IP 67	IP 67	IP 67	Index
Embeddable	Embeddable	Embeddable	Embeddable	
25 Hz (AC) / 2000 Hz (DC)	1500 Hz	1500 Hz	25 Hz (AC) / 1500 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	
DW-AS-627-M12-069	DW-DD-605-M18-120	DW-DD-605-M18	DW-AD-607-M18	
DW-AS-628-M12-069	DW-DD-606-M18-120	DW-DD-606-M18	DW-AD-608-M18	

2-WIRE

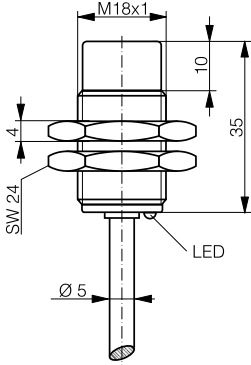
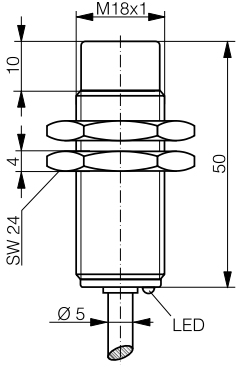
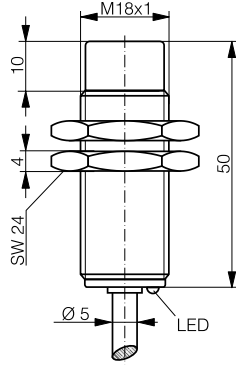
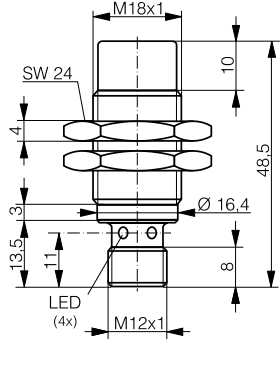
INDUCTIVE

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	DW-DS-605-M18-120	DW-DS-605-M18-002	
DC 2-wire NC	DW-DS-606-M18-120	DW-DS-606-M18-002	
AC/DC 2-wire NO			DW-AS-607-M18-069
AC/DC 2-wire NC			DW-AS-608-M18-069
Other types available			

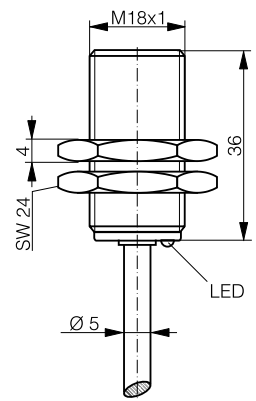
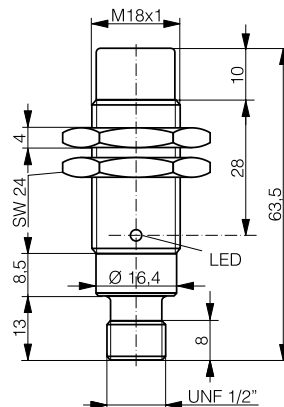
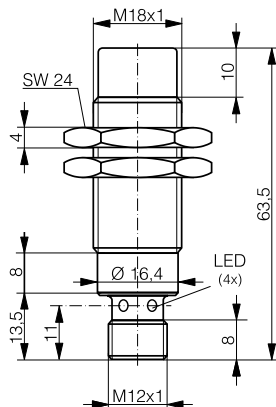
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M18	M18	M18	M18	
8	8	8	8	
				Photoelectric
				Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
				Accessories
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	
DW-DD-615-M18-120	DW-DD-615-M18		DW-DS-615-M18-120	
DW-DD-616-M18-120	DW-DD-616-M18	DW-AD-617-M18	DW-DS-616-M18-120	
		DW-AD-618-M18		Index

2-WIRE

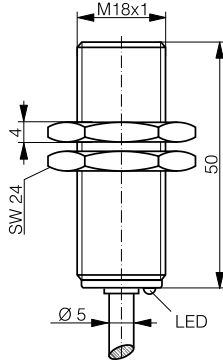
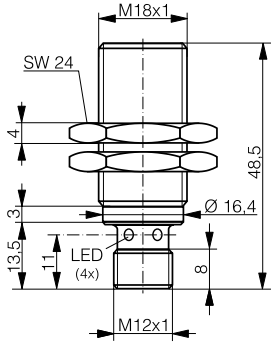
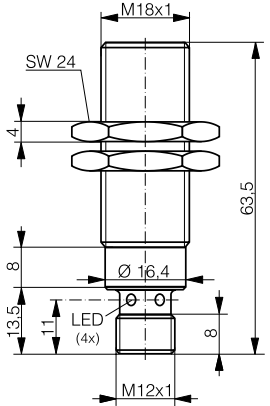
INDUCTIVE

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	DW-DS-615-M18-002		DW-DD-625-M18-120
DC 2-wire NC	DW-DS-616-M18-002		DW-DD-626-M18-120
AC/DC 2-wire NO		DW-AS-617-M18-069	
AC/DC 2-wire NC		DW-AS-618-M18-069	
Other types available			

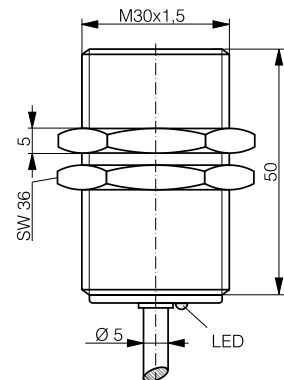
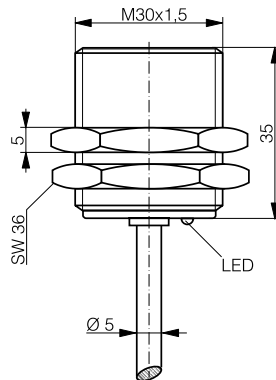
2-WIRE

CLASSICS	CLASSICS	CLASSICS	Inductive
M18	M18	M18	Photoelectric
8	8	8	Ultrasonic
			Capacitive
			Safety
			RFID
			Connectivity
			Accessories
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Glossary
PVC cable	Connector S12	Connector S12	Index
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	
DW-DD-625-M18	DW-DS-625-M18-120	DW-DS-625-M18-002	
DW-DD-626-M18	DW-DS-626-M18-120	DW-DS-626-M18-002	

2-WIRE

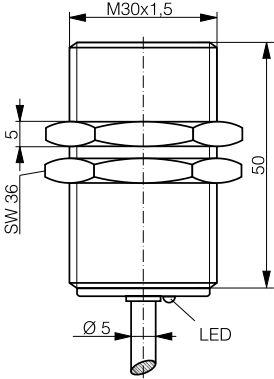
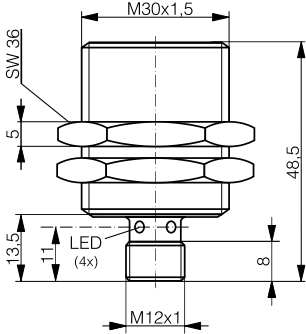
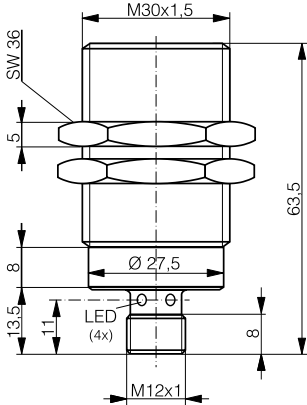
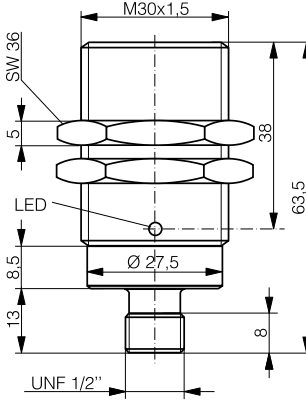
INDUCTIVE

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	DW-DD-605-M30-120	DW-DD-605-M30
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		

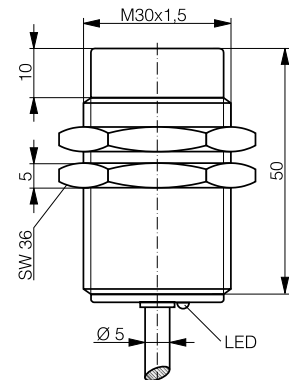
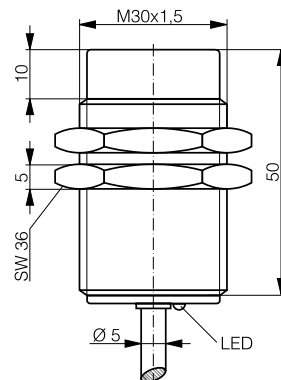
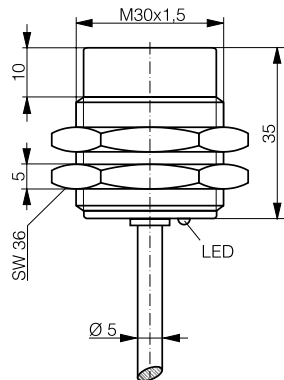
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive
M30	M30	M30	M30	Photoelectric
10	10	10	10	Ultrasonic
				Capacitive
				Safety
				RFID
				Connectivity
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Accessories
PVC cable	Connector S12	Connector S12	Connector 1/2"	Glossary
IP 67	IP 67	IP 67	IP 67	Index
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	
DW-AD-607-M30	DW-DS-605-M30-120	DW-DS-605-M30-002	DW-AS-607-M30-069	
DW-AD-608-M30	DW-DS-606-M30-120	DW-DS-606-M30-002	DW-AS-608-M30-069	

2-WIRE

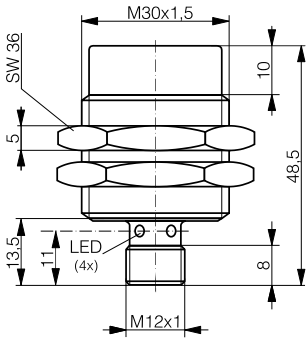
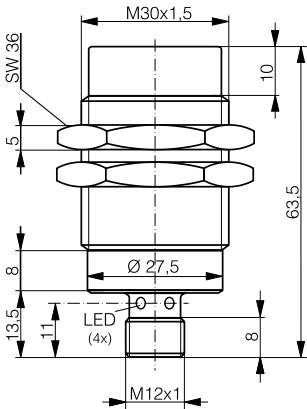
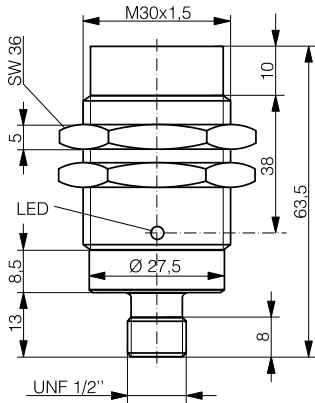
INDUCTIVE

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	DW-DD-615-M30-120	DW-DD-615-M30	DW-AD-617-M30
DC 2-wire NC	DW-DD-616-M30-120	DW-DD-616-M30	
AC/DC 2-wire NO			
AC/DC 2-wire NC			
Other types available			DW-AD-618-M30

2-WIRE

CLASSICS	CLASSICS	CLASSICS	Inductive
M30	M30	M30	Photoelectric
15	15	15	Ultrasonic
			Capacitive
			Safety
			RFID
			Connectivity
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Accessories
Connector S12	Connector S12	Connector 1/2"	Glossary
IP 67	IP 67	IP 67	Index
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	
DW-DS-615-M30-120	DW-DS-615-M30-002	DW-AS-617-M30-069	
DW-DS-616-M30-120	DW-DS-616-M30-002	DW-AS-618-M30-069	



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

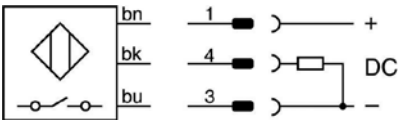
RANGE OVERVIEW	Housing size	Full Inox
WELD- IMMUNE	M8	p. 161
	M12	p. 161
	M18	p. 161

FAMILY	
HOUSING SIZE	
OPERATING DISTANCE MM	

INDUCTIVE

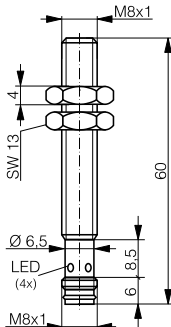
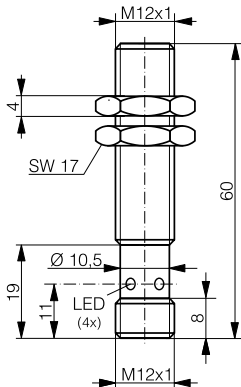
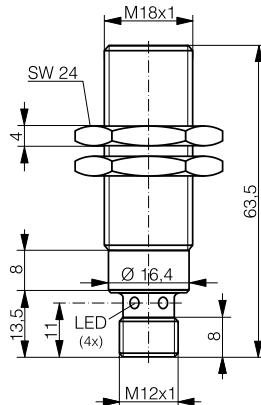
WIRING DIAGRAM

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		Inductive
M8		M12		M18		
3		6		10		
						Photoelectric
						Ultrasonic
						Capacitive
						Safety
						RFID
						Connectivity
Stainless steel V2A		Stainless steel V2A		Stainless steel V2A		Accessories
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)		Glossary
Stainless steel V2A		Stainless steel V2A		Stainless steel V2A		
Connector S8		Connector S12		Connector S12		Index
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		
DW-AS-703-M8-673		DW-AS-703-M12-673		DW-AS-703-M18-673		
DW-AS-703-M8-761		DW-AS-703-M12-761		DW-AS-703-M18-761		



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

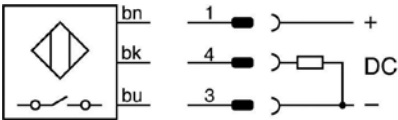
p. 165

FAMILY	
HOUSING SIZE MM	
OPERATING DISTANCE MM	

INDUCTIVE

WIRING DIAGRAM

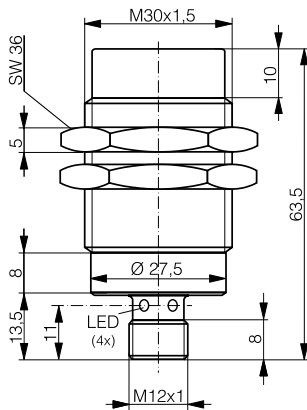
PNP NO



DATA	
Housing material	
Connection	
Degree of protection	
Mounting	
Max. switching frequency	
Supply voltage range	
Ambient temperature range	
Output current	
PNP NO	
Description	

SPECIAL

FULL INOX			Inductive
M30			
3 ... 5			



			Accessories
Stainless steel V2A			Glossary
Connector S12			
IP 68 / IP 69K			
Non-embeddable			
10 Hz			
10 ... 30 VDC			Index
-25 ... +70°C / -13 ... +158°F			
≤ 200 mA			
DW-AS-713-M30-618			
Double sheet			

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

<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>
DW-AD-501-04	1/75	DW-AD-519-M30-120	1/127	DW-AD-605-M4	1/131
DW-AD-501-065	1/35	DW-AD-519-M30-320	1/127	DW-AD-605-M5	1/133
DW-AD-501-065E	1/95	DW-AD-521-M8	1/43	DW-AD-605-M8-120	1/135
DW-AD-501-C8	1/46	DW-AD-521-M12	1/52	DW-AD-605-M12	1/135
DW-AD-501-M5	1/77	DW-AD-521-M12-120	1/52	DW-AD-605-M12-120	1/135
DW-AD-501-M8	1/42	DW-AD-523-M8	1/43	DW-AD-605-M18	1/136
DW-AD-501-M12	1/50	DW-AD-523-M12	1/52	DW-AD-605-M18-120	1/137
DW-AD-501-M12-120	1/50	DW-AD-523-M12-120	1/52	DW-AD-605-M30	1/138
DW-AD-501-M18	1/57	DW-AD-601-03	1/71	DW-AD-605-M30-120	1/137
DW-AD-501-M18-120	1/57	DW-AD-601-04	1/73	DW-AD-607-M12	1/144
DW-AD-501-M30	1/61	DW-AD-601-065	1/31	DW-AD-607-M18	1/149
DW-AD-501-M30-120	1/61	DW-AD-601-065-120	1/31	DW-AD-607-M30	1/155
DW-AD-501-P5	1/99	DW-AD-601-065-121	1/31	DW-AD-608-M12	1/144
DW-AD-501-P8	1/99	DW-AD-601-065-400	1/31	DW-AD-608-M18	1/149
DW-AD-501-P20	1/101	DW-AD-601-C5	1/78	DW-AD-608-M30	1/155
DW-AD-503-04	1/75	DW-AD-601-C8	1/45	DW-AD-611-M8	1/41
DW-AD-503-065	1/35	DW-AD-601-M4	1/72	DW-AD-611-M12	1/48
DW-AD-503-065E	1/95	DW-AD-601-M5	1/76	DW-AD-611-M12-120	1/48
DW-AD-503-C8	1/46	DW-AD-601-M5-735	1/107	DW-AD-611-M18	1/55
DW-AD-503-M5	1/77	DW-AD-601-M5E	1/95	DW-AD-611-M30	1/61
DW-AD-503-M8	1/42	DW-AD-601-M8	1/36	DW-AD-613-M8	1/41
DW-AD-503-M12	1/50	DW-AD-601-M8-120	1/35	DW-AD-613-M12	1/48
DW-AD-503-M12-120	1/50	DW-AD-601-M8-121	1/36	DW-AD-613-M12-120	1/48
DW-AD-503-M18	1/57	DW-AD-601-M8-122	1/36	DW-AD-613-M12-733	1/107
DW-AD-503-M18-120	1/57	DW-AD-601-M12	1/47	DW-AD-613-M18	1/55
DW-AD-503-M30	1/61	DW-AD-601-M12-120	1/47	DW-AD-613-M30	1/61
DW-AD-503-M30-120	1/61	DW-AD-601-M18	1/54	DW-AD-617-M12	1/146
DW-AD-503-P5	1/99	DW-AD-601-M18-120	1/54	DW-AD-617-M18	1/151
DW-AD-503-P8	1/99	DW-AD-601-M30	1/59	DW-AD-617-M30	1/156
DW-AD-503-P20	1/101	DW-AD-603-03	1/71	DW-AD-618-M12	1/146
DW-AD-504-M5	1/77	DW-AD-603-04	1/73	DW-AD-618-M18	1/151
DW-AD-504-M30	1/61	DW-AD-603-065	1/31	DW-AD-618-M30	1/156
DW-AD-509-C8-390	1/123	DW-AD-603-065-120	1/31	DW-AD-621-03	1/71
DW-AD-509-M8	1/123	DW-AD-603-065-121	1/31	DW-AD-621-03-960	1/71
DW-AD-509-M8-390	1/123	DW-AD-603-065-400	1/31	DW-AD-621-03E-961	1/95
DW-AD-509-M12	1/124	DW-AD-603-C5	1/78	DW-AD-621-04	1/74
DW-AD-509-M12-120	1/124	DW-AD-603-C8	1/45	DW-AD-621-065	1/34
DW-AD-509-M12-320	1/124	DW-AD-603-M4	1/72	DW-AD-621-065-120	1/33
DW-AD-509-M12-390	1/124	DW-AD-603-M5	1/76	DW-AD-621-065-121	1/33
DW-AD-509-M18	1/125	DW-AD-603-M5-735	1/107	DW-AD-621-065-122	1/34
DW-AD-509-M18-120	1/125	DW-AD-603-M5E	1/95	DW-AD-621-065-400	1/33
DW-AD-509-M18-320	1/125	DW-AD-603-M8	1/36	DW-AD-621-C5	1/79
DW-AD-509-M18-390	1/125	DW-AD-603-M8-120	1/35	DW-AD-621-C8	1/45
DW-AD-509-M30	1/126	DW-AD-603-M8-121	1/36	DW-AD-621-M4	1/73
DW-AD-509-M30-390	1/126	DW-AD-603-M8-122	1/36	DW-AD-621-M4-960	1/73
DW-AD-511-M8	1/44	DW-AD-603-M12	1/47	DW-AD-621-M5	1/76
DW-AD-511-M12	1/53	DW-AD-603-M12-120	1/47	DW-AD-621-M8	1/39
DW-AD-511-M12-120	1/53	DW-AD-603-M12-734	1/107	DW-AD-621-M8-120	1/38
DW-AD-511-M18	1/58	DW-AD-603-M18	1/54	DW-AD-621-M8-121	1/38
DW-AD-511-M18-120	1/58	DW-AD-603-M18-120	1/54	DW-AD-621-M8-122	1/38
DW-AD-511-M30	1/63	DW-AD-603-M18-718	1/107	DW-AD-621-M8-177	1/39
DW-AD-511-M30-120	1/63	DW-AD-603-M30	1/59	DW-AD-621-M12	1/49
DW-AD-513-M8	1/44	DW-AD-604-04	1/73	DW-AD-621-M12-120	1/48
DW-AD-513-M12	1/53	DW-AD-604-C5	1/78	DW-AD-621-M18	1/56
DW-AD-513-M12-120	1/53	DW-AD-604-M5	1/76	DW-AD-621-M18-120	1/55
DW-AD-513-M18	1/58	DW-AD-605-03	1/131	DW-AD-623-03	1/71
DW-AD-513-M18-120	1/58	DW-AD-605-04	1/132	DW-AD-623-03-960	1/71
DW-AD-513-M30	1/63	DW-AD-605-04K	1/132	DW-AD-623-03E-961	1/95
DW-AD-513-M30-120	1/63	DW-AD-605-065-120	1/134	DW-AD-623-04	1/74
DW-AD-514-M18	1/58	DW-AD-605-C5	1/133	DW-AD-623-065	1/34

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

INDUCTIVE SENSORS

<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>
DW-AD-623-065-120	1/33	DW-AD-713-M8	1/83	DW-AS-509-M12-390	1/125
DW-AD-623-065-121	1/33	DW-AD-713-M12	1/85	DW-AS-509-M18-002	1/126
DW-AD-623-065-122	1/34	DW-AD-713-M18	1/88	DW-AS-509-M18-390	1/126
DW-AD-623-065-400	1/33	DW-AD-713-M30	1/89	DW-AS-509-M30-002	1/127
DW-AD-623-C5	1/79	DW-AD-714-M8	1/83	DW-AS-509-M30-390	1/127
DW-AD-623-C8	1/45	DW-AS-60A-C44	1/65	DW-AS-511-M8-001	1/44
DW-AD-623-M4	1/73	DW-AS-60B-C44	1/65	DW-AS-511-M8	1/45
DW-AD-623-M4-960	1/73	DW-AS-61A-C44	1/65	DW-AS-511-M12	1/54
DW-AD-623-M5	1/76	DW-AS-61B-C44	1/65	DW-AS-511-M12-120	1/53
DW-AD-623-M8	1/39	DW-AS-62A-C44	1/65	DW-AS-511-M18-002	1/59
DW-AD-623-M8-120	1/38	DW-AS-62B-C44	1/65	DW-AS-511-M18-120	1/59
DW-AD-623-M8-121	1/38	DW-AS-63A-C44	1/66	DW-AS-511-M30-002	1/64
DW-AD-623-M8-122	1/38	DW-AS-63B-C44	1/66	DW-AS-511-M30-120	1/64
DW-AD-623-M8-177	1/39	DW-AS-501-04	1/75	DW-AS-513-M8-001	1/44
DW-AD-623-M12	1/49	DW-AS-501-065-001	1/35	DW-AS-513-M8	1/45
DW-AD-623-M12-120	1/48	DW-AS-501-C8	1/46	DW-AS-513-M12	1/54
DW-AD-623-M18	1/56	DW-AS-501-M5	1/77	DW-AS-513-M18-002	1/59
DW-AD-623-M18-120	1/55	DW-AS-501-M8-001	1/42	DW-AS-513-M12-120	1/53
DW-AD-624-04	1/74	DW-AS-501-M8	1/42	DW-AS-513-M18-120	1/59
DW-AD-624-C5	1/79	DW-AS-501-M12	1/51	DW-AS-513-M30-002	1/64
DW-AD-624-M5	1/76	DW-AS-501-M12-120	1/51	DW-AS-513-M30-120	1/64
DW-AD-627-M12	1/148	DW-AS-501-M18-002	1/58	DW-AS-514-M18-002	1/59
DW-AD-628-M12	1/148	DW-AS-501-M18-120	1/57	DW-AS-514-M30-002	1/64
DW-AD-631-M8	1/43	DW-AS-501-M30-002	1/62	DW-AS-519-M18-002	1/126
DW-AD-631-M12	1/51	DW-AS-501-M30-120	1/62	DW-AS-519-M18-390	1/126
DW-AD-633-M8	1/43	DW-AS-501-P12	1/100	DW-AS-519-M30-002	1/127
DW-AD-633-M12	1/51	DW-AS-501-P12-621	1/100	DW-AS-519-M30-120	1/127
DW-AD-701-C23	1/90	DW-AS-501-P12-622	1/101	DW-AS-519-M30-320	1/127
DW-AD-701-M8	1/83	DW-AS-501-P12-627	1/100	DW-AS-519-M30-390	1/127
DW-AD-701-M8-BAS	1/41	DW-AS-501-P12-635	1/101	DW-AS-521-M8-001	1/43
DW-AD-701-M12	1/85	DW-AS-501-P20	1/102	DW-AS-521-M8	1/43
DW-AD-701-M12-303	1/84	DW-AS-503-04	1/75	DW-AS-521-M12	1/53
DW-AD-701-M12-BAS	1/47	DW-AS-503-065-001	1/35	DW-AS-521-M12-120	1/52
DW-AD-701-M18	1/87	DW-AS-503-C8	1/46	DW-AS-523-M8-001	1/43
DW-AD-701-M18-303	1/86	DW-AS-503-M5	1/77	DW-AS-523-M8	1/43
DW-AD-701-M18-BAS	1/55	DW-AS-503-M8-001	1/42	DW-AS-523-M12	1/53
DW-AD-701-M30	1/88	DW-AS-503-M8	1/42	DW-AS-523-M12-120	1/52
DW-AD-701-M30-BAS	1/60	DW-AS-503-M12	1/51	DW-AS-523-P12-630	1/99
DW-AD-703-C23	1/90	DW-AS-503-M12-120	1/51	DW-AS-601-04	1/74
DW-AD-703-M8	1/83	DW-AS-503-M18-002	1/58	DW-AS-601-065-001	1/33
DW-AD-703-M8-BAS	1/41	DW-AS-503-M18-120	1/57	DW-AS-601-065-123	1/32
DW-AD-703-M12	1/85	DW-AS-503-M30-002	1/62	DW-AS-601-065-124	1/32
DW-AD-703-M12-303	1/84	DW-AS-503-M30-120	1/62	DW-AS-601-065-129	1/32
DW-AD-703-M12-BAS	1/47	DW-AS-503-P12	1/100	DW-AS-601-C8-001	1/45
DW-AD-703-M18	1/87	DW-AS-503-P12-621	1/100	DW-AS-601-M5	1/76
DW-AD-703-M18-303	1/86	DW-AS-503-P12-622	1/101	DW-AS-601-M8-001	1/37
DW-AD-703-M18-BAS	1/55	DW-AS-503-P12-627	1/100	DW-AS-601-M8	1/37
DW-AD-703-M30	1/88	DW-AS-503-P12-630	1/99	DW-AS-601-M8-123	1/37
DW-AD-703-M30-BAS	1/60	DW-AS-503-P12-635	1/101	DW-AS-601-M8-124	1/37
DW-AD-704-M8	1/83	DW-AS-503-P20	1/102	DW-AS-601-M12	1/47
DW-AD-704-M18	1/87	DW-AS-504-04	1/75	DW-AS-601-M12-120	1/47
DW-AD-704-M30	1/88	DW-AS-504-M5	1/77	DW-AS-601-M18-002	1/55
DW-AD-711-04	1/75	DW-AS-504-M18-002	1/58	DW-AS-601-M18-120	1/54
DW-AD-711-M5	1/78	DW-AS-504-P12-630	1/99	DW-AS-601-M30-002	1/60
DW-AD-711-M8	1/83	DW-AS-509-C8-390	1/123	DW-AS-601-M30-120	1/59
DW-AD-711-M12	1/85	DW-AS-509-M8-390	1/123	DW-AS-603-04	1/74
DW-AD-711-M18	1/88	DW-AS-509-M8-393	1/124	DW-AS-603-065-001	1/33
DW-AD-711-M30	1/89	DW-AS-509-M12	1/125	DW-AS-603-065-123	1/32
DW-AD-713-04	1/75	DW-AS-509-M12-120	1/125	DW-AS-603-065-124	1/32
DW-AD-713-M5	1/78	DW-AS-509-M12-320	1/125	DW-AS-603-065-129	1/32

INDUCTIVE SENSORS

<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>
DW-AS-603-C8-001	1/45	DW-AS-621-M8-124	1/40	DW-AS-703-M30-002	1/89
DW-AS-603-M5	1/76	DW-AS-621-M8-129	1/39	DW-AS-703-M30-BAS	1/60
DW-AS-603-M8-001	1/37	DW-AS-621-M8-193	1/40	DW-AS-704-M12	1/85
DW-AS-603-M8	1/37	DW-AS-621-M12	1/50	DW-AS-704-M18-002	1/87
DW-AS-603-M8-123	1/37	DW-AS-621-M12-120	1/49	DW-AS-711-M8-001	1/84
DW-AS-603-M8-124	1/37	DW-AS-621-M18-002	1/57	DW-AS-711-M8	1/84
DW-AS-603-M12	1/47	DW-AS-621-M18-120	1/56	DW-AS-711-M12	1/86
DW-AS-603-M12-120	1/47	DW-AS-623-04	1/75	DW-AS-711-M18-002	1/88
DW-AS-603-M18-002	1/55	DW-AS-623-065-123	1/34	DW-AS-711-M30-002	1/89
DW-AS-603-M18-120	1/54	DW-AS-623-065-124	1/35	DW-AS-713-M8-001	1/84
DW-AS-603-M30-002	1/60	DW-AS-623-C8-001	1/46	DW-AS-713-M8	1/84
DW-AS-603-M30-120	1/59	DW-AS-623-M5	1/77	DW-AS-713-M12	1/86
DW-AS-604-M5	1/76	DW-AS-623-M8-001	1/40	DW-AS-713-M18-002	1/88
DW-AS-604-M18-002	1/55	DW-AS-623-M8	1/40	DW-AS-713-M30-002	1/89
DW-AS-605-03	1/131	DW-AS-623-M8-123	1/39	DW-AS-713-M30-618	1/165
DW-AS-605-04	1/132	DW-AS-623-M8-124	1/40	DW-AS-731-M12	1/86
DW-AS-605-065-129	1/134	DW-AS-623-M8-129	1/39	DW-AS-733-M12	1/86
DW-AS-605-C5	1/133	DW-AS-623-M8-193	1/40	DW-AV-501-P5-276	1/99
DW-AS-605-M4	1/131	DW-AS-623-M12	1/50	DW-AV-503-P5-276	1/99
DW-AS-605-M5	1/133	DW-AS-623-M12-120	1/49	DW-AV-601-03-276	1/71
DW-AS-605-M8-129	1/134	DW-AS-623-M18-002	1/57	DW-AV-601-04-236	1/74
DW-AS-605-M12	1/136	DW-AS-623-M18-120	1/56	DW-AV-601-M4-276	1/72
DW-AS-605-M12-120	1/135	DW-AS-624-M5	1/77	DW-AV-603-03-276	1/71
DW-AS-605-M18-002	1/137	DW-AS-624-M12	1/50	DW-AV-603-04-236	1/74
DW-AS-605-M18-120	1/137	DW-AS-624-M18-002	1/57	DW-AV-603-M4-276	1/72
DW-AS-605-M30-002	1/138	DW-AS-627-M12-069	1/149	DW-AV-621-03-276	1/72
DW-AS-605-M30-120	1/138	DW-AS-628-M12-069	1/149	DW-AV-621-M4-276	1/73
DW-AS-607-M12-069	1/145	DW-AS-631-M8-001	1/44	DW-AV-623-03-276	1/72
DW-AS-607-M18-069	1/150	DW-AS-631-M12-120	1/51	DW-AV-623-M4-276	1/73
DW-AS-607-M30-069	1/155	DW-AS-633-M8-001	1/44	DW-AV-701-C23-276	1/90
DW-AS-608-M12-069	1/145	DW-AS-633-M8-732	1/107	DW-AV-703-C23-276	1/90
DW-AS-608-M18-069	1/150	DW-AS-633-M12-120	1/51	DW-DD-605-065	1/140
DW-AS-608-M30-069	1/155	DW-AS-701-M8-001	1/83	DW-DD-605-M8	1/141
DW-AS-611-M8-001	1/41	DW-AS-701-M8	1/83	DW-DD-605-M12	1/144
DW-AS-611-M8	1/41	DW-AS-701-M8-001-BAS	1/41	DW-DD-605-M12-120	1/144
DW-AS-611-M12	1/49	DW-AS-701-M12	1/85	DW-DD-605-M18	1/149
DW-AS-611-M12-120	1/49	DW-AS-701-M12-303	1/85	DW-DD-605-M18-120	1/149
DW-AS-611-M18-002	1/56	DW-AS-701-M12-BAS	1/48	DW-DD-605-M30	1/154
DW-AS-611-M30-002	1/61	DW-AS-701-M18-002	1/87	DW-DD-605-M30-120	1/154
DW-AS-613-M8-001	1/41	DW-AS-701-M18-120	1/87	DW-DD-606-065	1/140
DW-AS-613-M8	1/41	DW-AS-701-M18-303	1/87	DW-DD-606-M8	1/141
DW-AS-613-M12	1/49	DW-AS-701-M18-BAS	1/55	DW-DD-606-M12	1/144
DW-AS-613-M12-120	1/49	DW-AS-701-M30-002	1/89	DW-DD-606-M12-120	1/144
DW-AS-613-M18-002	1/56	DW-AS-701-M30-BAS	1/60	DW-DD-606-M18	1/149
DW-AS-613-M30-002	1/61	DW-AS-703-M8-001	1/83	DW-DD-606-M18-120	1/149
DW-AS-614-M18-002	1/56	DW-AS-703-M8	1/83	DW-DD-606-M30	1/154
DW-AS-617-M12-069	1/147	DW-AS-703-M8-001-BAS	1/41	DW-DD-606-M30-120	1/154
DW-AS-617-M18-069	1/152	DW-AS-703-M8-673	1/161	DW-DD-615-M8	1/143
DW-AS-617-M30-069	1/157	DW-AS-703-M8-761	1/161	DW-DD-615-M8-122	1/143
DW-AS-618-M12-069	1/147	DW-AS-703-M12	1/85	DW-DD-615-M12	1/146
DW-AS-618-M18-069	1/152	DW-AS-703-M12-303	1/85	DW-DD-615-M12-120	1/145
DW-AS-618-M30-069	1/157	DW-AS-703-M12-673	1/161	DW-DD-615-M18	1/151
DW-AS-621-04	1/75	DW-AS-703-M12-761	1/161	DW-DD-615-M18-120	1/151
DW-AS-621-065-123	1/34	DW-AS-703-M12-BAS	1/48	DW-DD-615-M30	1/156
DW-AS-621-065-124	1/35	DW-AS-703-M18-002	1/87	DW-DD-615-M30-120	1/156
DW-AS-621-C8-001	1/46	DW-AS-703-M18-120	1/87	DW-DD-616-M8	1/143
DW-AS-621-M5	1/77	DW-AS-703-M18-303	1/87	DW-DD-616-M8-122	1/143
DW-AS-621-M8-001	1/40	DW-AS-703-M18-673	1/161	DW-DD-616-M12	1/146
DW-AS-621-M8	1/40	DW-AS-703-M18-761	1/161	DW-DD-616-M12-120	1/145
DW-AS-621-M8-123	1/39	DW-AS-703-M18-BAS	1/55	DW-DD-616-M18	1/151

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

Index

INDUCTIVE SENSORS

<i>Part reference</i>	<i>Chapter/page</i>	<i>Part reference</i>	<i>Chapter/page</i>
DW-DD-616-M18-120	1/151	DW-HD-601-M30-310	1/111
DW-DD-616-M30	1/156	DW-HD-603-M12-200	1/111
DW-DD-616-M30-120	1/156	DW-HD-603-M18-310	1/111
DW-DD-625-M8	1/142	DW-HD-603-M30-310	1/111
DW-DD-625-M12	1/147	DW-HD-613-M50-503	1/112
DW-DD-625-M12-120	1/147	DW-HD-613-M50-511	1/112
DW-DD-625-M18	1/153	DW-HD-621-M8-100	1/111
DW-DD-625-M18-120	1/152	DW-HD-623-M8-100	1/111
DW-DD-626-M8	1/142	DW-LD-703-M12	1/117
DW-DD-626-M12	1/147	DW-LD-703-M18	1/117
DW-DD-626-M12-120	1/147	DW-LD-703-M30	1/118
DW-DD-626-M18	1/153	DW-LS-603-M12	1/117
DW-DD-626-M18-120	1/152	DW-LS-701-P12G	1/101
DW-DS-605-065	1/140	DW-LS-703-M12	1/117
DW-DS-605-M8-001	1/141	DW-LS-703-M18-002	1/118
DW-DS-605-M8	1/142	DW-LS-703-M30-002	1/118
DW-DS-605-M12	1/145	DW-LS-703-P12G	1/101
DW-DS-605-M12-120	1/145		
DW-DS-605-M18-002	1/150		
DW-DS-605-M18-120	1/150		
DW-DS-605-M30-002	1/155		
DW-DS-605-M30-120	1/155		
DW-DS-606-065	1/140		
DW-DS-606-M8-001	1/141		
DW-DS-606-M8	1/142		
DW-DS-606-M12	1/145		
DW-DS-606-M12-120	1/145		
DW-DS-606-M18-002	1/150		
DW-DS-606-M18-120	1/150		
DW-DS-606-M30-002	1/155		
DW-DS-606-M30-120	1/155		
DW-DS-615-M8-001	1/143		
DW-DS-615-M8	1/143		
DW-DS-615-M12	1/147		
DW-DS-615-M12-120	1/146		
DW-DS-615-M18-002	1/152		
DW-DS-615-M18-120	1/151		
DW-DS-615-M30-002	1/157		
DW-DS-615-M30-120	1/157		
DW-DS-616-065	1/141		
DW-DS-616-M8-001	1/143		
DW-DS-616-M8	1/143		
DW-DS-616-M12	1/147		
DW-DS-616-M12-120	1/146		
DW-DS-616-M18-002	1/152		
DW-DS-616-M18-120	1/151		
DW-DS-616-M30-002	1/157		
DW-DS-616-M30-120	1/157		
DW-DS-625-M8-001	1/142		
DW-DS-625-M12	1/148		
DW-DS-625-M12-120	1/148		
DW-DS-625-M18-002	1/153		
DW-DS-625-M18-120	1/153		
DW-DS-626-M8-001	1/142		
DW-DS-626-M12	1/148		
DW-DS-626-M12-120	1/148		
DW-DS-626-M18-002	1/153		
DW-DS-626-M18-120	1/153		
DW-HD-601-M12-200	1/111		
DW-HD-601-M18-310	1/111		



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