



NEW

INDUCTIVE SENSORS

- Full Inox Chip-Immune
- Full Inox Maritime DNV-GL Approved

INDUCTIVE SENSOR SECTION



**LARGEST SELECTION
OF IO-LINK SENSORS
IN THE INDUSTRY ***

**A
Swiss
Company**

INTRODUCTION

CONTRINEX

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

Since its foundation in 1972 by Peter Heimlicher, Dipl Ing ETH, Contrinex has grown from a one-man operation to a multinational group with over 580 employees worldwide. More than 14 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

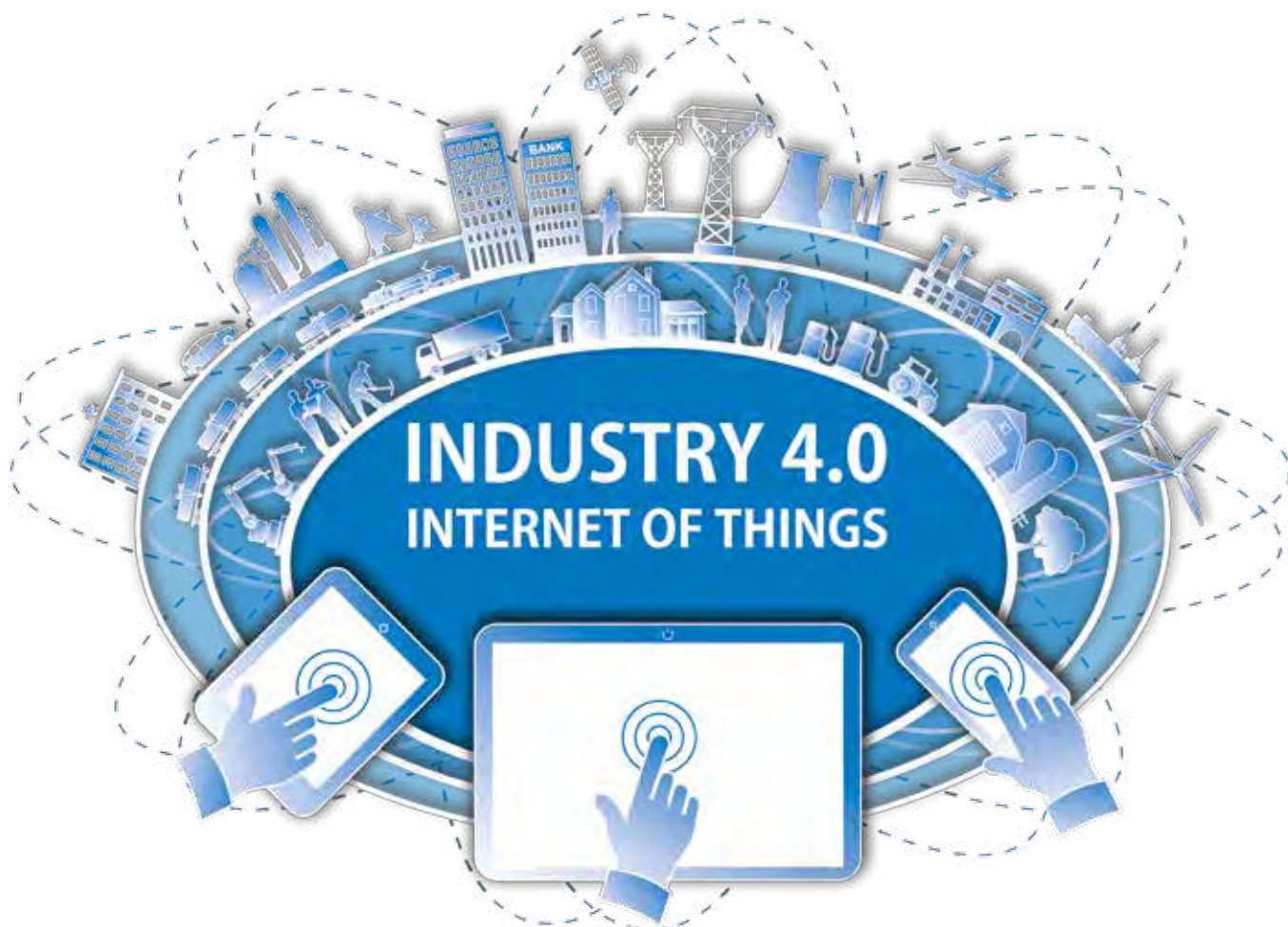
Fit for the future with IO-Link

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.

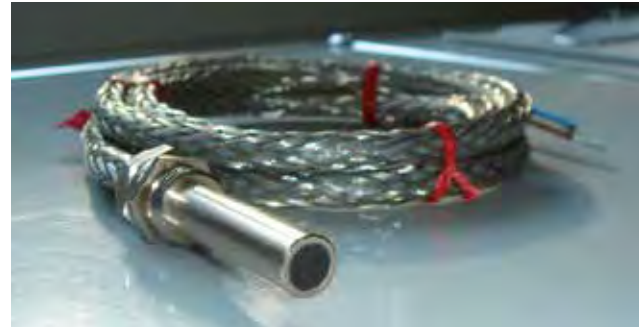
Another advantage is the fact that, with Contrinex sensors, there is no extra charge for IO-Link. This makes them not only quick and simple to install, but also highly economic.

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 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
- 2017** Launch of photoelectric sensor with patented UV technology for transparent object detection



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



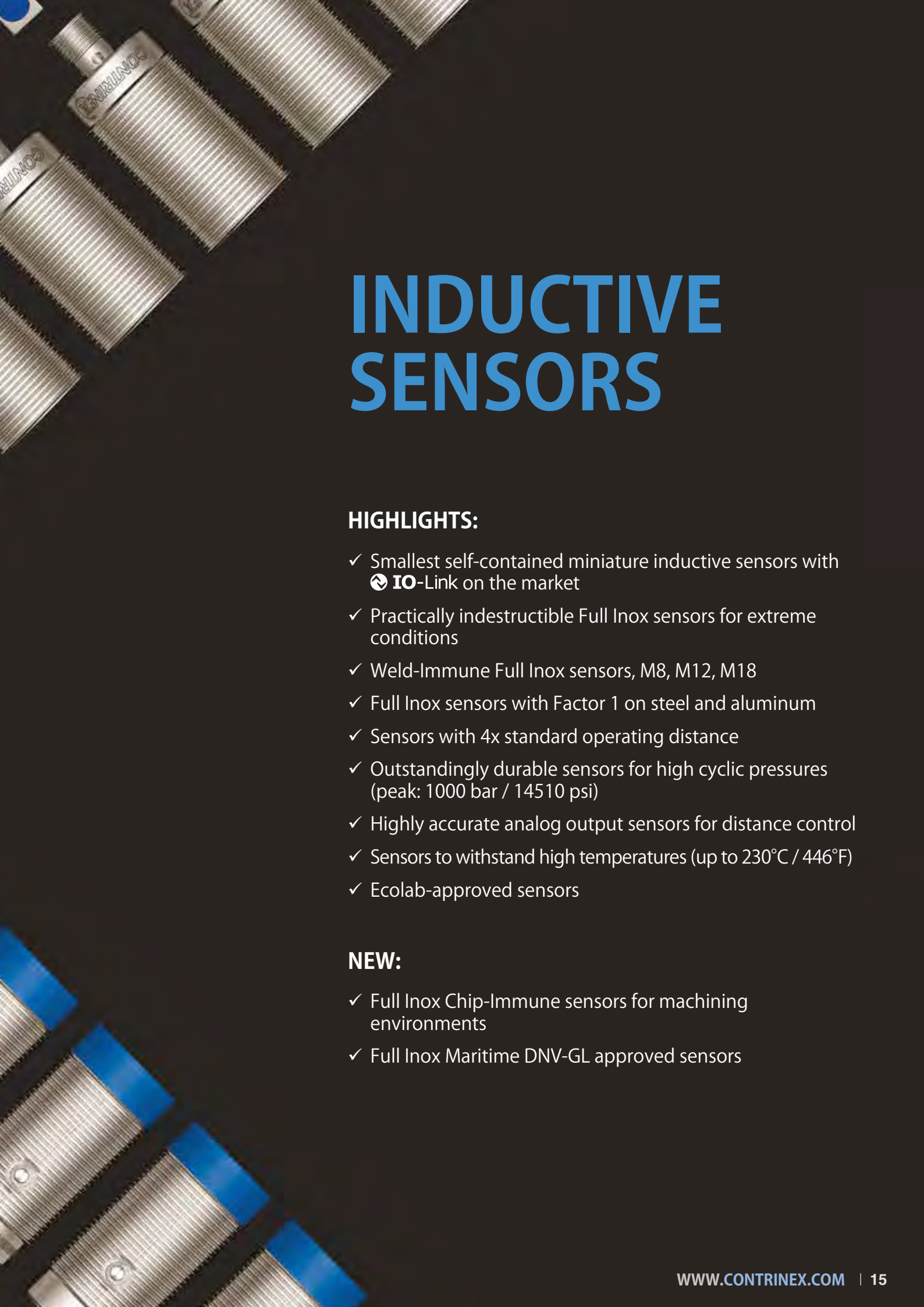
ASIC sensor technology



Safety product range




Subminiature photoelectric sensor



INDUCTIVE SENSORS



































HIGHLIGHTS:























- ✓ Smallest self-contained miniature inductive sensors with  IO-Link 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 Chip-Immune sensors for machining environments
- ✓ Full Inox Maritime DNV-GL approved sensors

PROGRAM OVERVIEW

FAMILY	HOUSING SIZE	OPERATING DISTANCE	BASIC	MINIATURE	EXTREME	ANALOG OUTPUT	
			 IO-Link	 IO-Link	 IO-Link		
CLASSICS Series 600 1 x S _n / 2 x S _n	∅ 3	0.6 ... 1 mm		 p. 71-72			
	M4	0.6 ... 1 mm		 p. 72-73			
	∅ 4	0.8 ... 1.5 mm		 p. 73-75			
	M5	0.8 ... 1.5 mm		 p. 76-77			
	C5	0.8 ... 1.5 mm		 p. 78-79			
	∅ 6.5	1.5 ... 2 mm	 p. 31-35				
	M8	1.5 ... 4 mm	 p. 35-41, 43-44				
	C8	1.5 ... 2 mm	 p. 45-46				
	M12	2 ... 8 mm	 p. 47-51				
	M18	5 ... 8 mm	 p. 54-57				
	M30	10 ... 15 mm	 p. 60-61				
	M50	25 mm					
	40 x 40	15 ... 40 mm	 p. 66-67				
EXTRA DISTANCE Series 500 3 x S _n / 4 x S _n	∅ 4	2.5 mm		 p. 75			
	M5 / P5	1 ... 2.5 mm		 p. 77			
	∅ 6.5	2.5 ... 3 mm	 p. 35				
	M8 / P8	1.5 ... 6 mm	 p. 42-45			p. 95-96	
	C8	2 ... 4 mm	 p. 46			p. 95	
	M12 / P12	1.5 ... 10 mm	 p. 50-54			p. 96-97	
	M18	12 ... 20 mm	 p. 57-59			p. 97-98	
	M30	20 ... 40 mm	 p. 62-65			p. 98-99	
	M14 / P20	3 mm					
FULL INOX Series 700 full-metal housing	∅ 4	3 mm		 p. 75			
	M5	3 mm		 p. 78			
	∅ 6.5						
	M8	3 ... 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. 87-88		
	M30	3 ... 40 mm	 p. 61		 p. 89-90		
	C23	7 mm			 p. 91		

	2-WIRE	EXTRA/HIGH PRESSURE up to 1000 bar peak  IO-Link	EXTRA TEMP. HIGH TEMP. -40 to +230°C  IO-Link	WELD-IMMUNE CHIP-IMMUNE DOUBLE-SHEET  IO-Link	MARITIME  IO-Link	WASHDOWN  IO-Link	Inductive
	p.103	 p.131					Photoelectric
	p. 103						
	p. 104	 p.131					
	p. 105	 p.131	 p.143				Safety
	p. 105						
	p. 106, 110						
	p. 107, 110-113		 p.143, 147				RFID
	p. 107, 114-119		 p.143, 147			 p.171	
	p. 108, 119-123		 p.143, 147-148				
	p. 109, 124-127		148-149				Connectivity
			p.149				
		 p.135					Accessories
		 p.131					
		 p.135					
		 p.135-137					Glossary
							Index
		 p.137		p.153			
				 p.153, 157	 p.165	 p.171-172	
				 p.153, 157	 p.166	 p.172-173	
				 p.157, 161	 p.166-167	 p.173-174	
					 p.167		

PROGRAM OVERVIEW

MINIATURE + BASIC

HOUSING SIZE	OPERATING DISTANCE													PAGE
	5 mm	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	55 mm	60 mm	65 mm	
∅ 3 mm / M4	0.6 mm													71 - 72
	1 mm													71 - 73
∅ 4 mm / M5	0.8 mm													73-74, 76
	1.5 mm													74 - 77
	2.5 mm													75, 77
	3 mm													75, 78
C5	0.8 mm													78
	1.5 mm													79
∅ 6.5 mm	1.5 mm													31 - 33
	2 mm													33 - 35
	3 mm													35
M8	1.5 mm													35 - 37
	2 mm													38 - 41
	2.5 mm													41
	3 mm													42
	4 mm													43 - 44
	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													59
M30	10 mm													60 - 61
	15 mm													61
	22 mm													62 - 63
	40 mm													64 - 65
C44	15 mm													66
	20 mm													66
	30 mm													67
	40 mm													67

OTHER RANGES

HOUSING SIZE	OPERATING DISTANCE													PAGE	Inductive
	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 / M12	2 ... 3 mm													83 - 84	Photoelectric
M8 / M12	6 mm													83 - 85	
M18 / C23	5 ... 7 mm													87, 91	
M12 / M18	10 mm													85 - 88	
M12	15 mm													86	
M18 / M30	20 mm													88 - 89	
M30	40 mm													90	
ANALOG OUTPUT															
C8 / M8	0 ... 4 mm													95 - 96	Safety
M12	0 ... 6 mm													96 - 97	
M18	0 ... 10 mm													97 - 98	
M18 / M30	0 ... 20 mm													98 - 99	
M30	0 ... 40 mm													99	
2-WIRE															
∅ 3 / ∅ 4 / M4 / M5 / C5	0.6 ... 0.8 mm													103 - 105	RFID
∅ 6.5	1.5 mm													106, 110	
M8	1.5 ... 2.5 mm													107, 110 - 113	
M12	2 ... 4 mm													107, 114 - 119	
M18	5 ... 8 mm													108, 119 - 123	
M30	10 ... 15 mm													109, 124 - 127	
EXTRA/HIGH PRESSURE															
∅ 3 / ∅ 4 / M5	0.6 ... 0.8 mm													131	Connectivity
∅ 6.5	2.5 mm													131	
M5 / P5	1 mm													135	
M8 / P8 / M12 / P12	1.5 ... 2.5 mm													135 - 137	
M14 / P20	3.0 mm													137 - 138	
EXTRA/HIGH TEMP.															
M5	0.8 mm													143	Accessories
M8	2 ... 4 mm													143, 147	
M12	2 ... 4 mm													143, 147	
M18	5 mm													143, 147-148	
M30	10 mm													148 - 149	
M50	25 mm													149	
WELD-IMMUNE CHIP-IMMUNE DOUBLE SHEET															
M8 / M12	3 ... 6 mm													153, 157	Glossary
M18	5 ... 10 mm													153, 157	
M30	12 mm													157	
M30	3 ... 5 mm													161	
MARITIME															
M12	1.5 mm													165	Index
M12	6 mm													165	
M18	10 mm													166	
M30	20 mm													166 - 167	
C23	7 mm													167	
WASHDOWN															
M12	2 mm													171	
M12	6 mm													171	
M12 / M18	10 mm													171 - 172	
M18 / M30	20 mm													173 - 174	
M30	40 mm													174	

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 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.

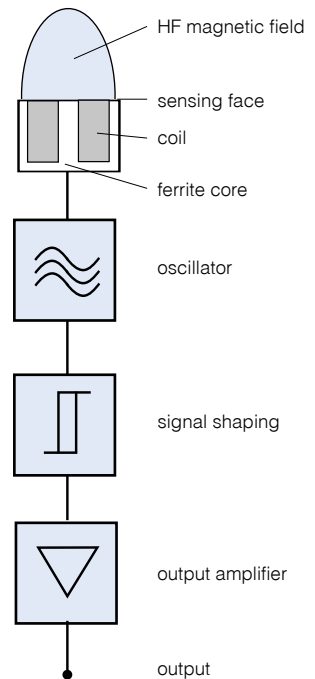


Fig. 1: Conventional inductive sensor technology, as used in the **Classics** family

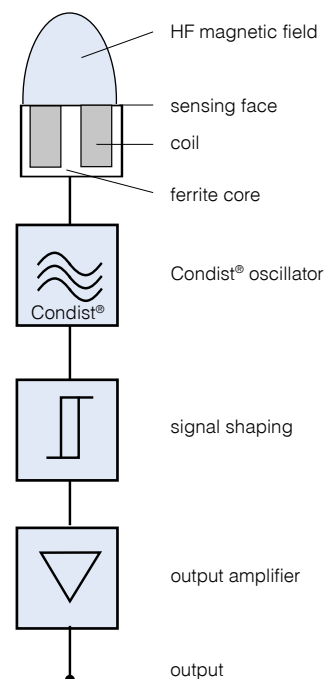


Fig. 2: Contrinex's Condist® inductive sensor technology, as used in the **Extra Distance** family

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

The **Extra Distance** technology family includes devices from the **Basic, Miniature, Extra pressure, High pressure** and **Analog output** ranges. This technology is used in series 500 devices.

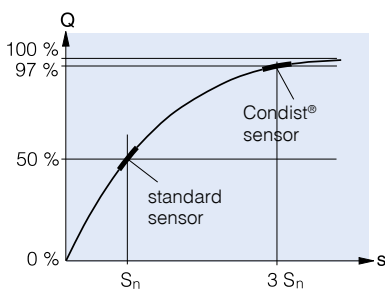


Fig. 3: **Extra Distance** family sensors have a longer operating distance, due to Condist® oscillator technology

FULL INOX FAMILY:

All-round stainless steel protection - practically indestructible

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

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

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

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

The coupling between the target and the coil is rather **like a transformer**, and is hence **temperature independent** and only **slightly influenced by the target's material**. Operating distances are therefore identical on steel and aluminum. Only metals which are non-ferromagnetic and also have poor electrical conductivity give a reduced usable signal.

The **Full Inox** family includes devices from the **Basic, Miniature, Extreme, High Pressure, Washdown, Weld-Immune, Chip-Immune, Maritime** and **Double-Sheet** ranges.

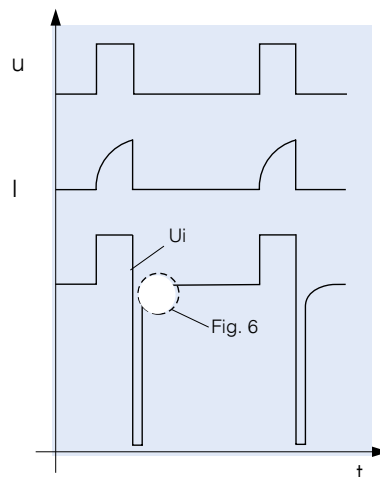


Fig. 5: Evolution of main signals

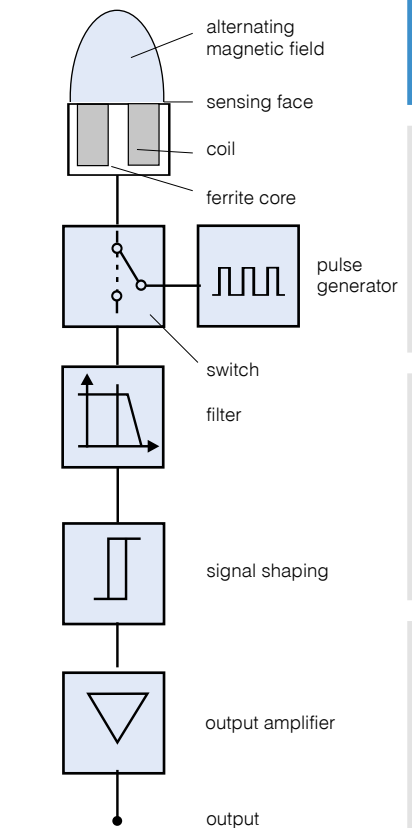


Fig. 4: **Full Inox** family sensors use Condete® pulse generator technology instead of an oscillator

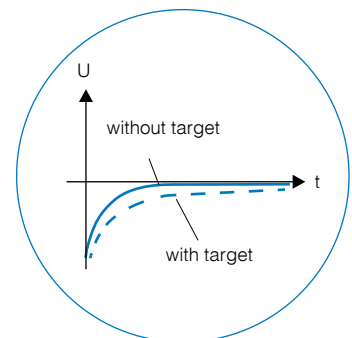


Fig. 6 (detail fig. 5): Effect of a target on the measured signal

INTRODUCTION

PRODUCT RANGES

BASIC

First choice in all environments

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

Available in sizes from M8 to M30 and C44, with optional Ø 6.5 plain and 8 mm square-section models, **Basic** range inductive sensors are ideal for general position-sensing and presence-sensing applications in almost any industry. Embeddable or non-embeddable variants are available, with either hard-wired, hermetically sealed connecting cables or integral metal connectors. **Basic** range devices, whether from the **Classics** (Fig. 1), **Extra Distance** (Fig. 2) or **Full Inox** (Fig. 4) technology families, all utilize Contrinex application-specific integrated circuits (ASICs) that ensure highly repeatable results at operating temperatures between -25°C and +70°C. An **IO-Link** interface is also available for communication in PNP NO versions.



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. 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 NO or NC 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. An **IO-Link** interface is also available for communication in PNP NO versions.



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 **100 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. An **IO-Link** interface is also available for communication in PNP NO versions.

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. 7). 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.

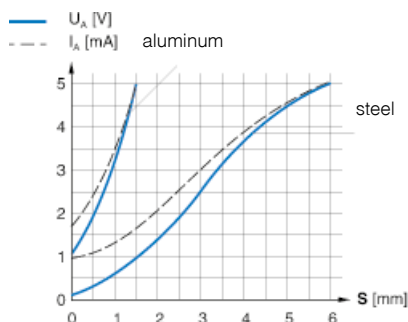


Fig. 7

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.

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 Ø 3 to M30, plus a 5 x 5 mm square-section type.



Devices are available for embeddable or non-embeddable mounting and connection is by means of cable or connector. With a sensing range up to 15 mm, Contrinex **2-Wire** sensors ensure optimal equipment utilization.

EXTRA PRESSURE

Pressure resistant up to 200 bar

Dependable, accurate presence- and position-sensing at pressures up to **200 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 M6.5.

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) or **Extra Distance** (Fig. 2) 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. An **IO-Link** interface is also available for communication in PNP NO versions.



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.



INTRODUCTION

Contrinex **High pressure** sensors are available in either **Extra Distance** (Fig. 2) or **Full Inox** (Fig 4) versions. Both of these 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. 8 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**. An **IO-Link** interface is also available for communication in PNP NO versions.

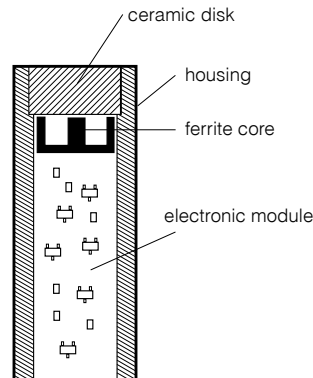


Fig. 8

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.



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. An **IO-Link** interface is also available for communication in PNP NO versions.



High temperature sensors use **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 include highly durable 100% silicone-free types. Connection is by means of an FEP, Teflon or silicone cable. 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.

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°C.



DOUBLE-SHEET

Detection of double-sheets in metalworking

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.



CHIP-IMMUNE

For the harshest machining environments

Even when covered with chips of steel, stainless steel, aluminum, brass, copper or titanium, **Chip-Immune** inductive sensors from the **Full Inox** technology family will reliably detect targets made of these metals. The sensors achieve this with a slightly modified form of Condet® technology. In a one-piece stainless steel housing with **IP 68/IP 69K** protection rating and a wide operating temperature range from -25 to +85°C (-13 to +185°F), they are particularly suitable for use in the harsh environments of the machining industry. Depending on sensor diameter (**M12**, **M18** or **M30**), operating distances of 3, 5 or 12 mm are available. In the PNP version, sensors also include an **IO-Link** interface for point-to-point communication with the controller of the system.



INTRODUCTION

MARITIME

DNV-GL approved for ships, ports and offshore

The **Maritime** range of embeddable inductive sensors, certified by Germanischer Lloyd, offers unrivalled performance features based on **Full Inox** technology (Fig. 4). With a one-piece housing in V4A/AISI 316L stainless steel and an enclosure rating of **IP 68/IP 69K**, they are not only impervious, but also corrosion-proof and resistant to salt water. Their EMC protection also meets specific maritime requirements, particularly with regard to power supply variations and low frequency immunity. They offer the longest service life of any inductive sensor on the market, even in the harshest marine environments. The maximum operating pressure is 80 bar or 500 bar (peak 800 bar) for P12G high-pressure types. Depending on sensor size (**M12**, **C23**, **M18** or **M30**), operating distances of 6, 7, 10 or 20 mm are available. In the PNP version, sensors also include an **IO-Link** interface for point-to-point communication with the controller of the system. The range also includes **M10** types with **Classics** technology.



Conversion of temperature	
Celsius	Fahrenheit
-40	-40
-25	-13
0	+32
+70	+158
+85	+185
+100	+212
+120	+248
+180	+356
+230	+446

Conversion of pressure	
Bar	PSI
1	14.5
80	1160
100	1451
200	2901
500	7255
800	11603
1000	14510

WASHDOWN

Ecolab approved for strictest production hygiene

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

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

Washdown sensors meet the increasingly demanding sensing needs of the food, beverage and pharmaceutical industries, delivering best-in-class performance with an attractive total cost of ownership. An **IO-Link** interface is also available for communication in PNP NO versions.



IO-LINK FUNCTIONALITY* WITH INDUCTIVE SENSORS (PNP N.O. TYPES)

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:

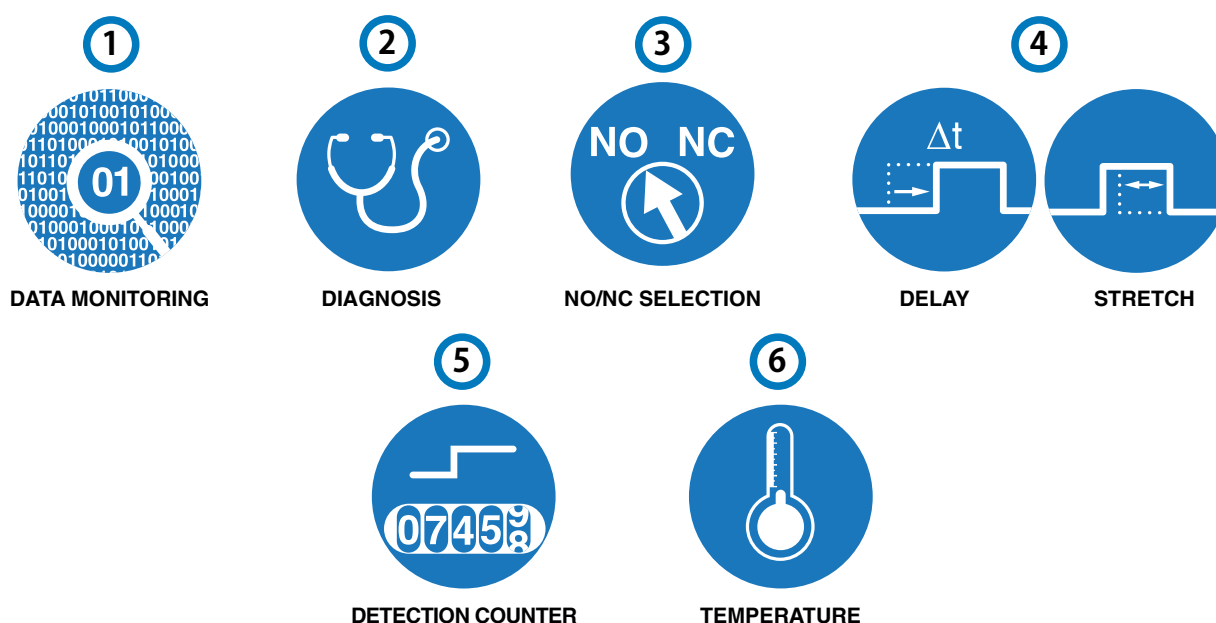
- 4 The timing of output switching can be configured. Depending on the needs of an application, output switching can be delayed or the duration stretched through programming.

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
- ✓ 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 (1160 psi)

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. 60-61	p. 62-65	p. 61
	C44	p. 66-67		

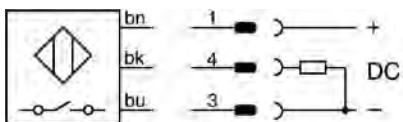
FAMILY

HOUSING SIZE MM

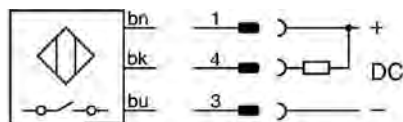
OPERATING DISTANCE MM

WIRING DIAGRAMS

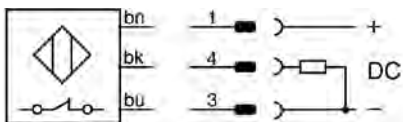
PNP NO



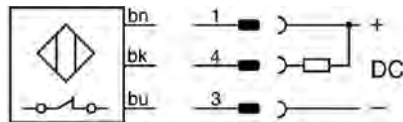
NPN NO



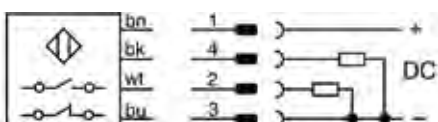
PNP NC



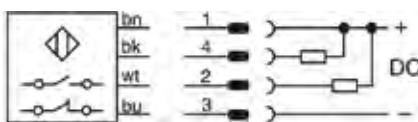
NPN NC



PNP Changeover



NPN Changeover



INDUCTIVE

DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

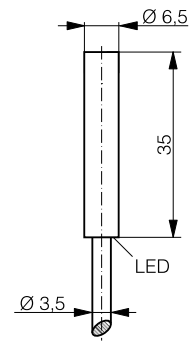
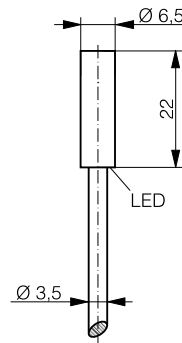
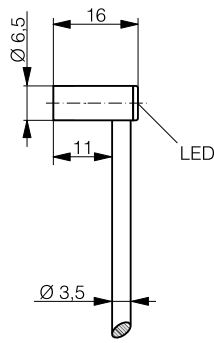
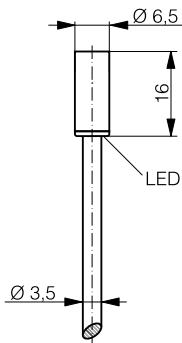
PNP NO

NPN NO

Other types available

BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5
1.5	1.5	1.5	1.5 (4)



IO-Link	IO-Link	IO-Link	IO-Link
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, non-embeddable (Sn 4 mm)

BASIC

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 6.5

Ø 6.5

Ø 6.5

OPERATING DISTANCE MM

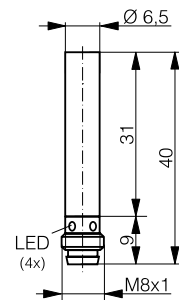
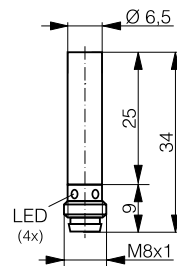
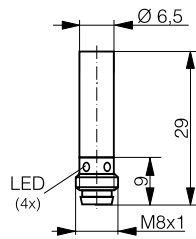
1.5

1.5

1.5



INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

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

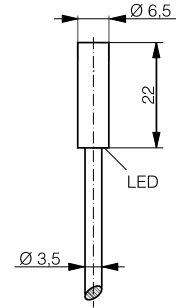
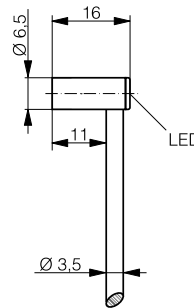
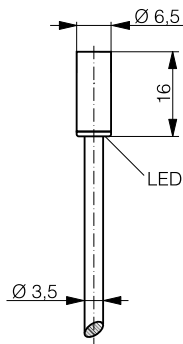
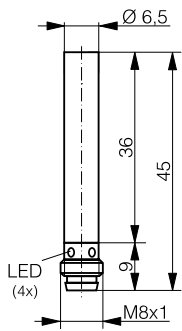
PNP NC, NPN NC

PNP NC, NPN NC

PNP NC, NPN NC

BASIC

CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5
1.5 (4)	2	2	2

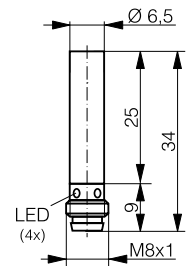
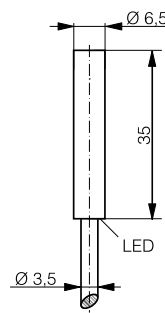
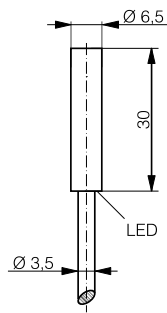


IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S8	PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 Hz	5000 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 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
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, non-embeddable (Sn 4 mm)	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	IO-Link	IO-Link	IO-Link
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
Ø 6.5	Ø 6.5	Ø 6.5	M8
2	3	3	1.5

Inductive

Photoelectric

Safety

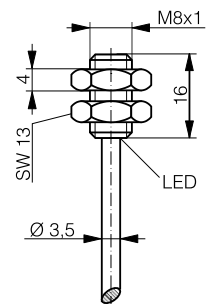
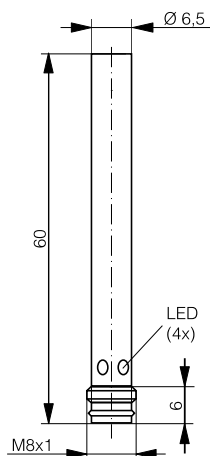
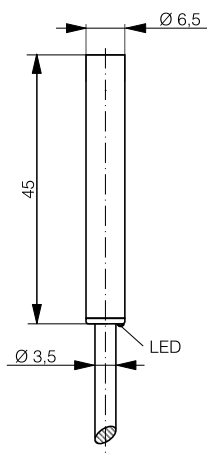
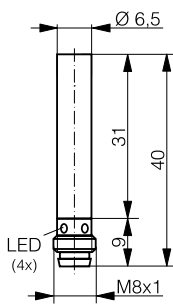
RFID

Connectivity

Accessories

Glossary

Index



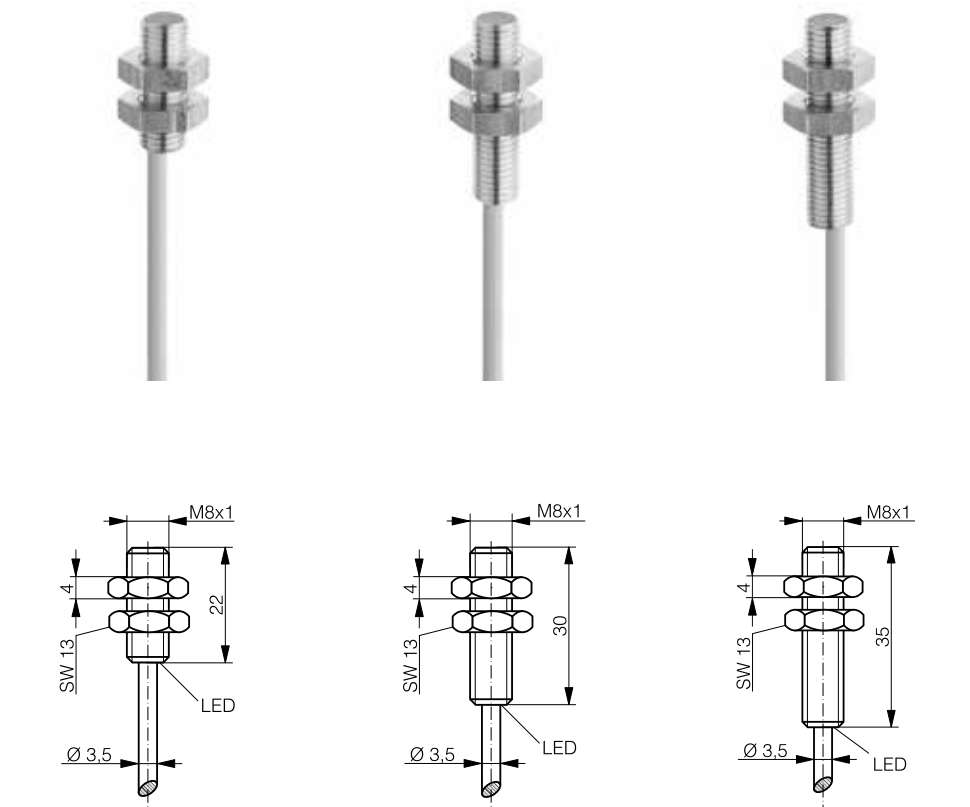
* IO-Link available from Q4/18

IO-Link	* IO-Link	* IO-Link	IO-Link
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, length 66 mm	PNP NC, NPN NC

BASIC

INDUCTIVE

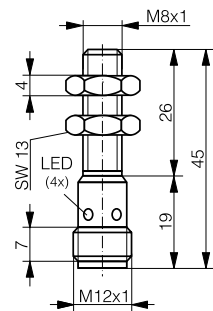
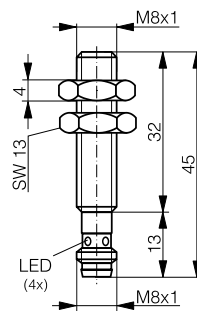
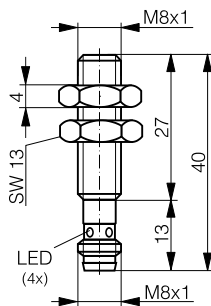
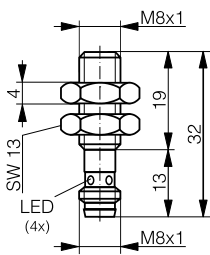
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M8	M8	M8
OPERATING DISTANCE MM	1.5	1.5	1.5



DATA	IO-Link	IO-Link	IO-Link
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
M8	M8	M8	M8
1.5	1.5	1.5	1.5

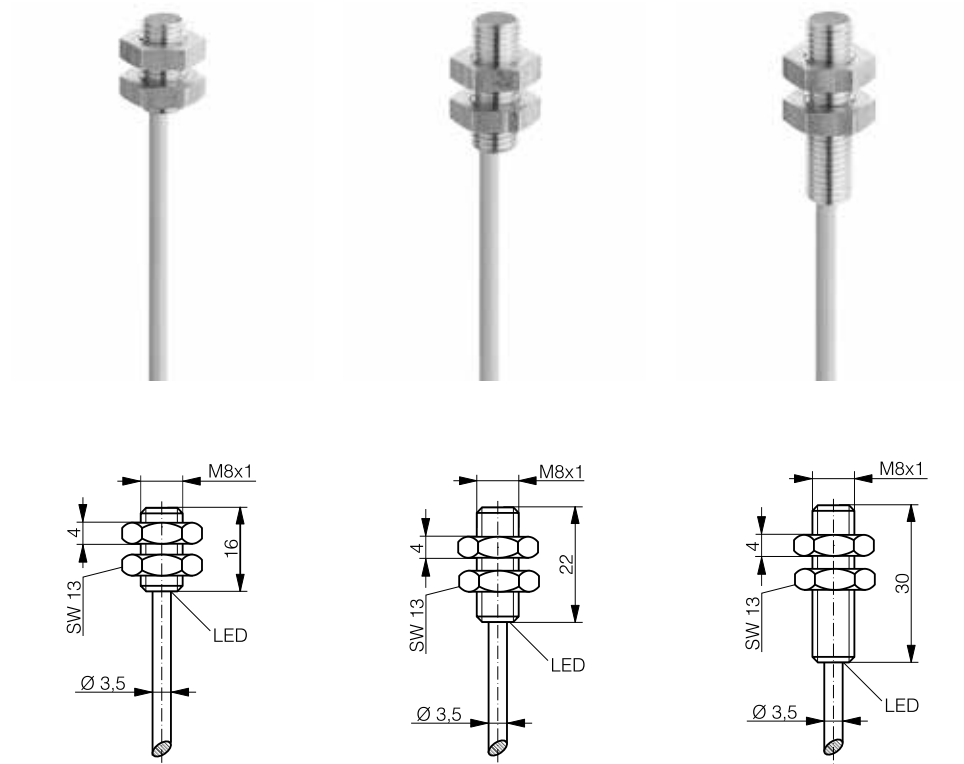


IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S8	Connector S8	Connector S8	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 Hz	5000 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AS-603-M8-123	DW-AS-603-M8-124	DW-AS-603-M8-001	DW-AS-603-M8
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	IO-Link	IO-Link	IO-Link
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

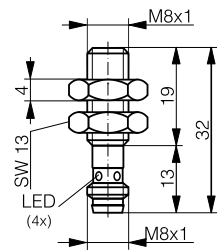
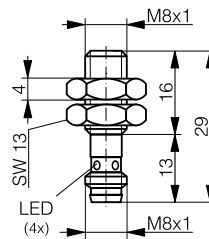
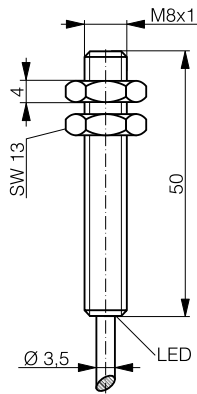
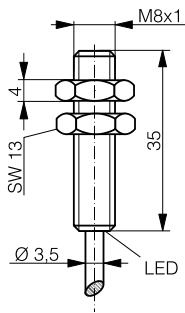
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M8	M8	M8
2	2	2	2

Inductive



Photoelectric

Safety



RFID

Connectivity

Accessories

IO-Link	IO-Link	IO-Link	IO-Link
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

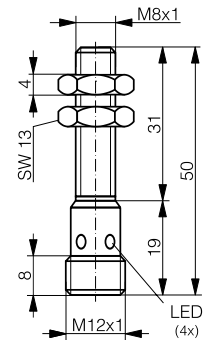
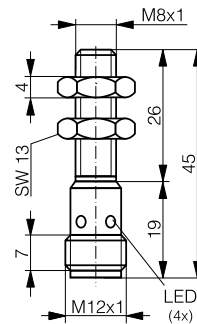
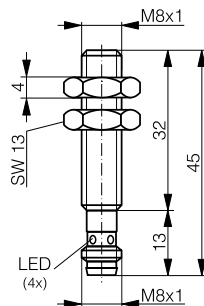
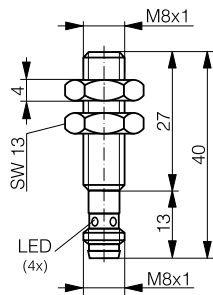
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INDUCTIVE

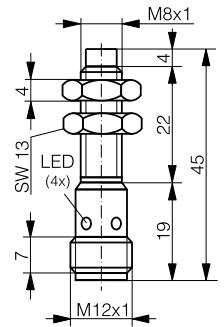
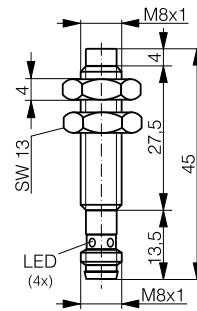
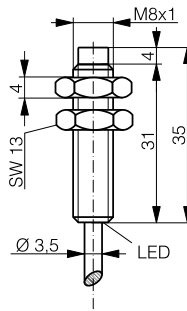
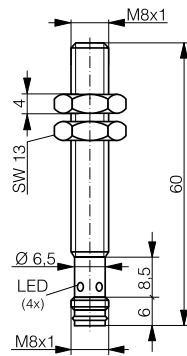
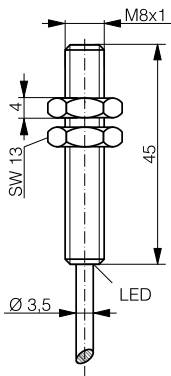
FAMILY	CLASSICS	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M8	M8	M8	M8
OPERATING DISTANCE MM	2	2	2	2



DATA	IO-Link	IO-Link	IO-Link	IO-Link
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	
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	

BASIC

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



IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S8	PVC cable	Connector S8	Connector S12
IP 68	IP 68 / IP 69K	IP 67	IP 67	IP 67
Embeddable	Embeddable	Non-embeddable	Non-embeddable	Non-embeddable
100 Hz	100 Hz	4500 Hz	4500 Hz	4500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F	-25 ... +70°C/-13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
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
		PNP NC, NPN NC, lengths 22 & 30 mm	PNP NC, NPN NC, lengths 32 & 40 mm	PNP NC, NPN NC

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

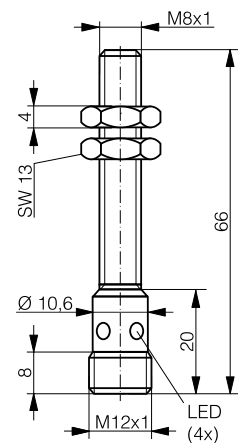
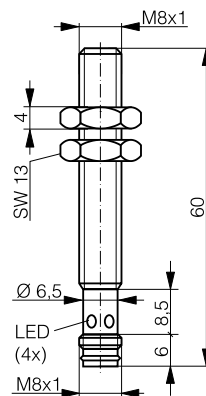
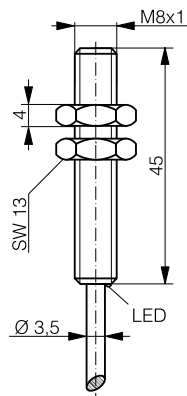
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BASIC

INDUCTIVE

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

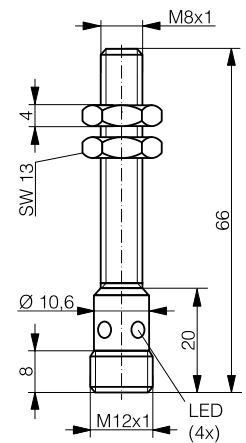
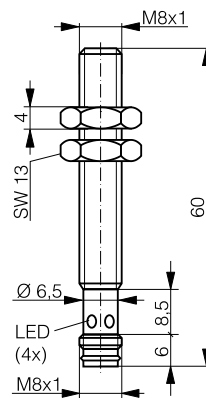
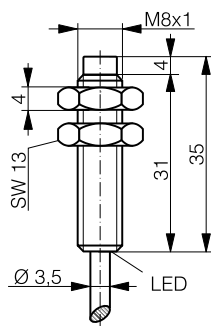
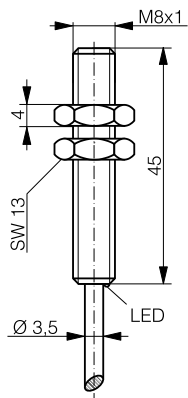


* IO-Link available from Q4/18

DATA	* IO-Link	* IO-Link	* IO-Link
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
M8	M8	M8	M8
4	4	4	4



* IO-Link	IO-Link	* IO-Link	* IO-Link
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

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

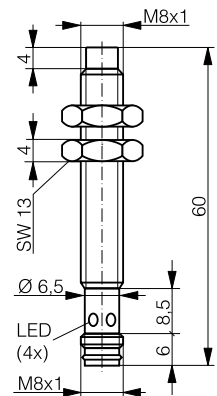
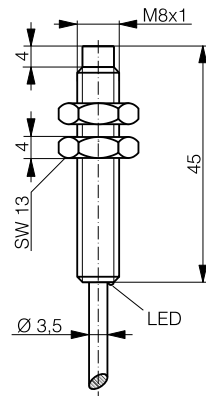
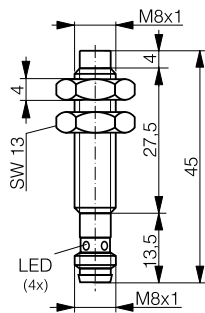
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BASIC

INDUCTIVE

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

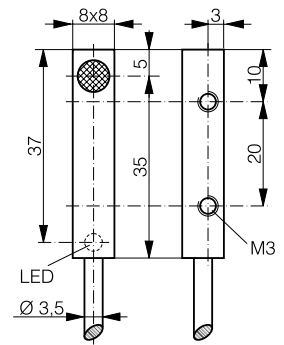
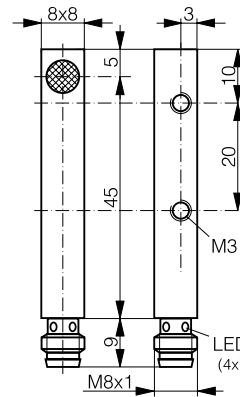
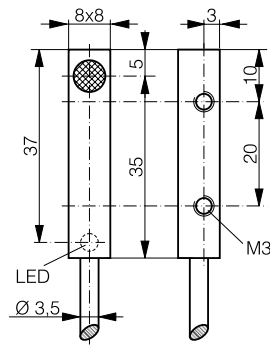
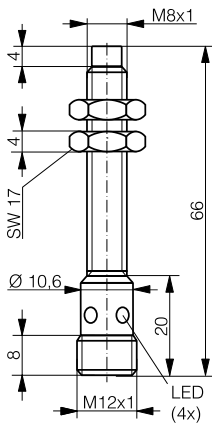


* IO-Link available from Q4/18

DATA	IO-Link	* IO-Link	* IO-Link
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
M8	□ 8 x 8	□ 8 x 8	□ 8 x 8
6	1.5	1.5	2



* IO-Link	IO-Link	IO-Link	IO-Link
Chrome-plated brass	Zamak	Zamak	Zamak
Connector S12	PVC cable	Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Embeddable	Embeddable	Embeddable
500 Hz	3500 Hz	3500 Hz	5000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
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

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

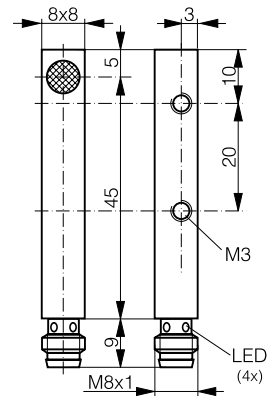
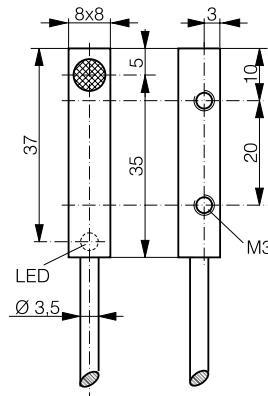
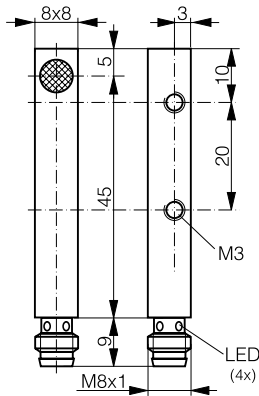
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BASIC

INDUCTIVE

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

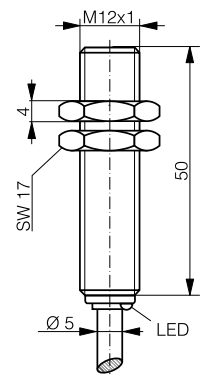
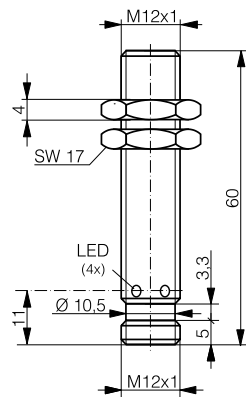
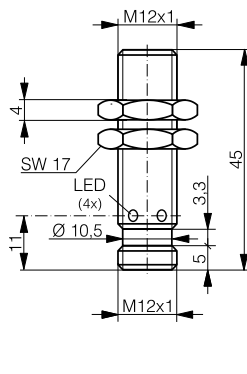
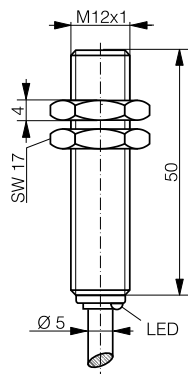
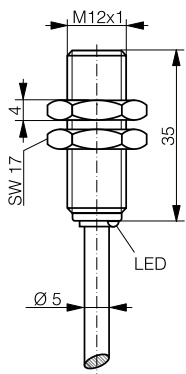


* IO-Link available from Q4/18

DATA	IO-Link	* IO-Link	* IO-Link
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
M12	M12	M12	M12	M12
2	2	2	2	3



IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
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	

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

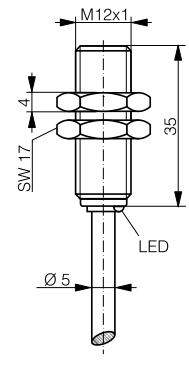
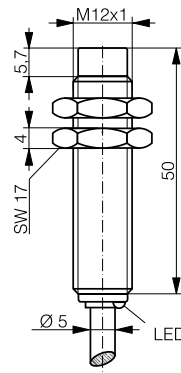
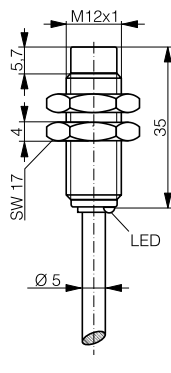
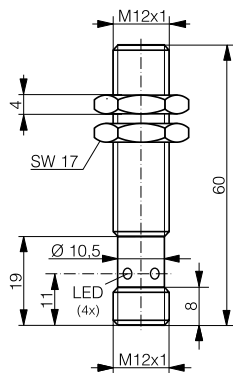
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BASIC

INDUCTIVE

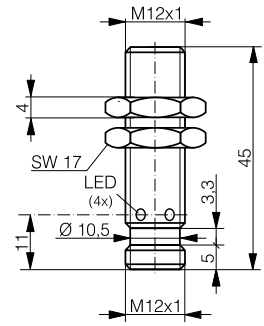
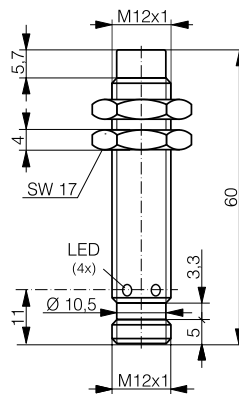
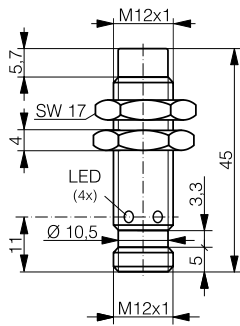
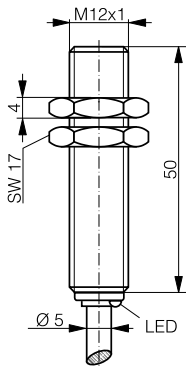
FAMILY	FULL INOX	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M12	M12	M12	M12
OPERATING DISTANCE MM	3	4	4	4



DATA	IO-Link	IO-Link	IO-Link	IO-Link
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
M12	M12	M12	M12
4	4	4	4

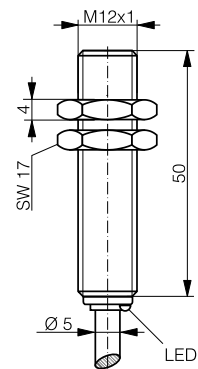
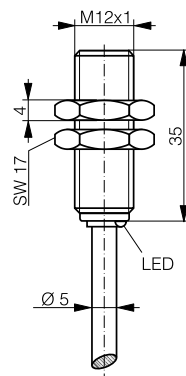
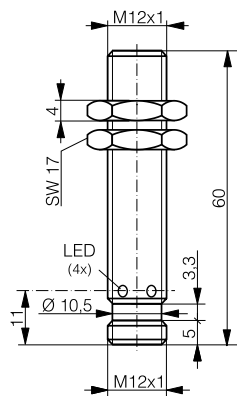


IO-Link	IO-Link	IO-Link	IO-Link
Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
PVC cable	Connector S12	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-embeddable	Embeddable
2500 Hz	2000 Hz	2000 Hz	2500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 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

BASIC

INDUCTIVE

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

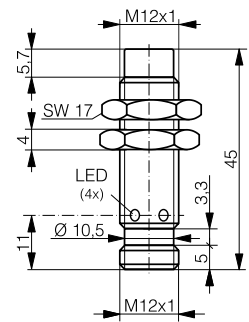
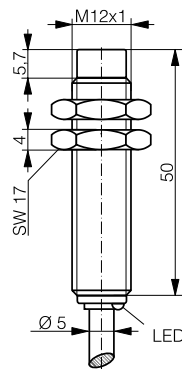
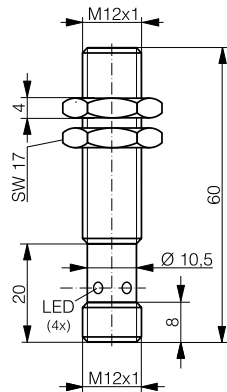
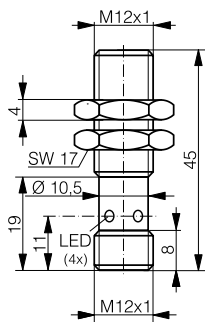


* IO-Link available from Q4/18

DATA	IO-Link	* IO-Link	* IO-Link
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
M12	M12	M12	M12
6	6	8	8



* IO-Link	* IO-Link	IO-Link	IO-Link
Chrome-plated brass	Chrome-plated brass	Nickel-plated brass	Nickel-plated brass
Connector S12	Connector S12	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Non-embeddable	Non-embeddable
800 Hz	800 Hz	1400 Hz	1400 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
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

Inductive

Photoelectric

Safety

RFID

Connectivity

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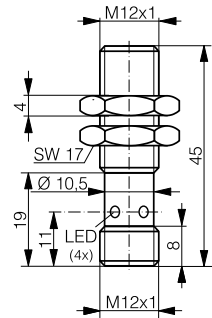
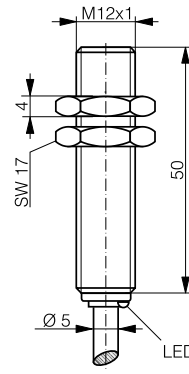
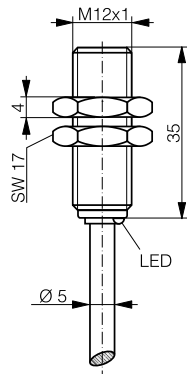
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INDUCTIVE

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

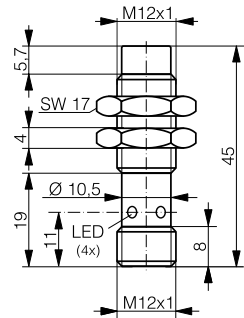
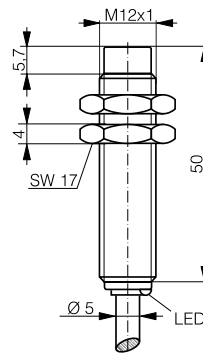
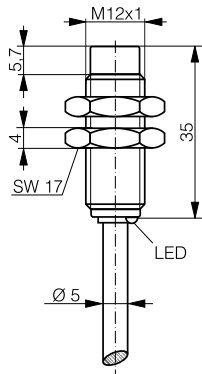
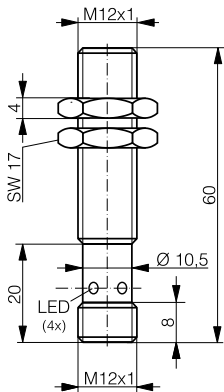


* IO-Link available from Q4/18

DATA	* IO-Link	* IO-Link	* IO-Link
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
M12	M12	M12	M12
8	10	10	10

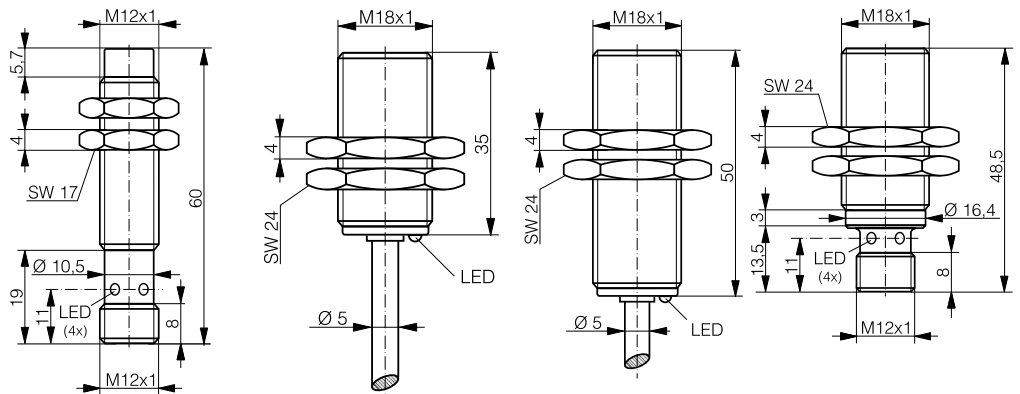


* IO-Link	* IO-Link	* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
400 Hz	400 Hz	400 Hz	400 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AS-523-M12	DW-AD-513-M12-120	DW-AD-513-M12	DW-AS-513-M12-120
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

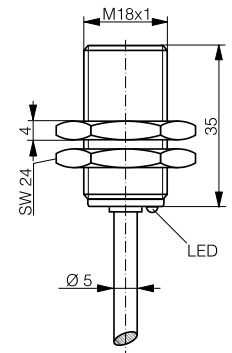
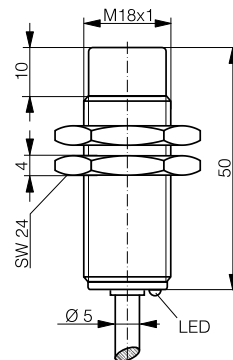
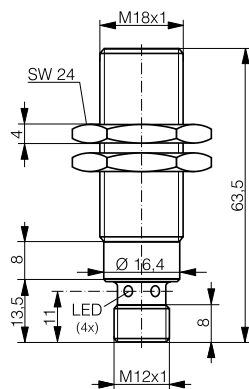
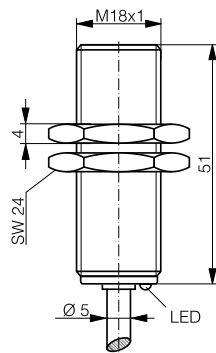
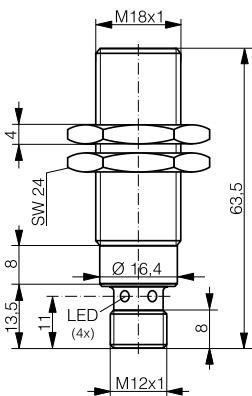


* IO-Link available from Q4/18

DATA	* IO-Link	IO-Link	IO-Link	IO-Link
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
M18	M18	M18	M18	M18
5	5	5	8	8



Inductive

Photoelectric

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IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
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	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			DW-AD-614-M18	
NPN NC			NPN NC, length 35 mm	PNP NC, NPN NC

BASIC

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE

M18

M18

M18

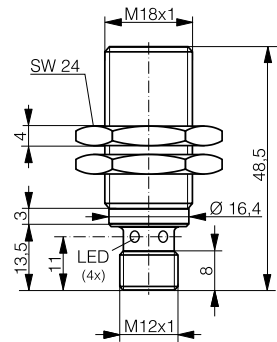
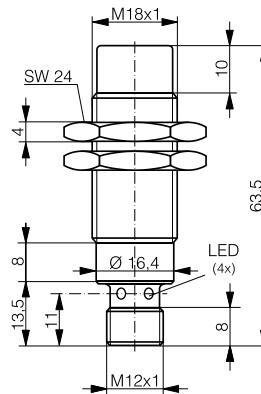
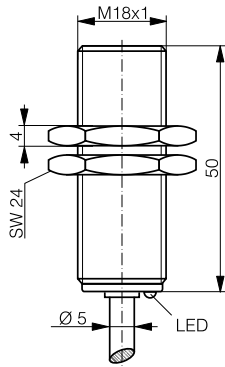
OPERATING DISTANCE MM

8

8

8

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

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

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, length 35 mm

PNP NC, NPN NC

BASIC

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

Inductive



Photoelectric

Safety

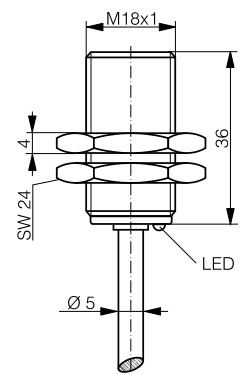
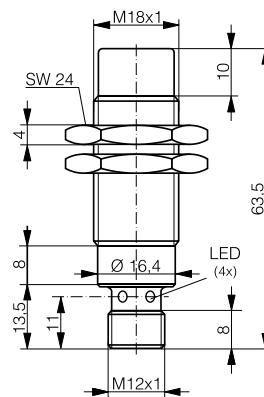
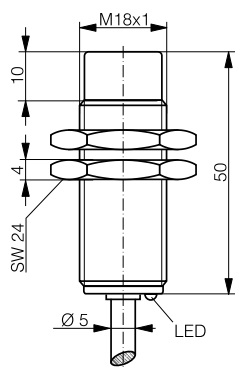
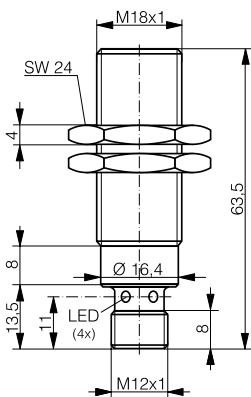
RFID

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* IO-Link available from Q4/18

IO-Link	IO-Link	IO-Link	* IO-Link
Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Chrome-plated brass
Connector S12	PVC cable	Connector S12	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-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-633-M18	DW-AS-633-M18-002	DW-AD-503-M18-120
DW-AS-621-M18-002	DW-AD-631-M18	DW-AS-631-M18-002	DW-AD-501-M18-120
DW-AS-624-M18-002			
NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

BASIC

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE

M18

M18

M18

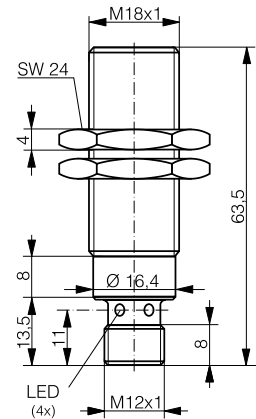
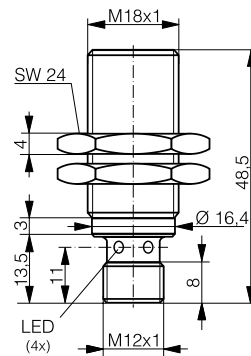
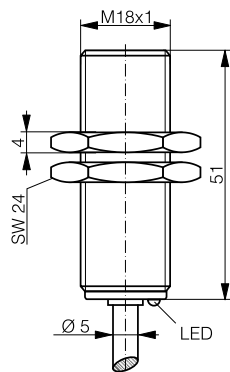
OPERATING DISTANCE MM

12

12

12

INDUCTIVE



* IO-Link available from Q4/18

DATA	* IO-Link	* IO-Link	* IO-Link
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	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	500 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-AD-503-M18	DW-AS-503-M18-120	DW-AS-503-M18-002
NPN NO	DW-AD-501-M18	DW-AS-501-M18-120	DW-AS-501-M18-002
PNP NC			DW-AS-504-M18-002
Other types available	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

BASIC

EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M18	M18	M18	M18
20	20	20	20

Inductive

Photoelectric

Safety

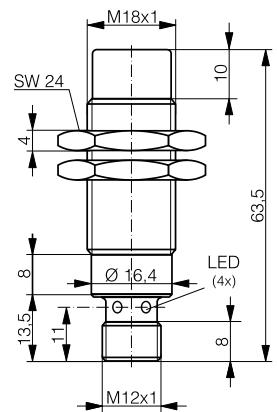
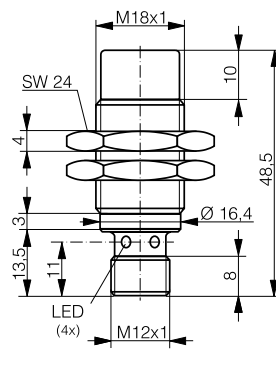
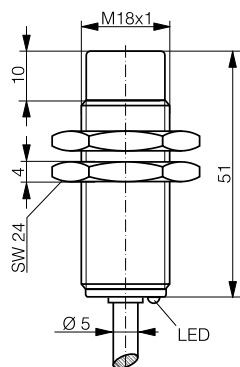
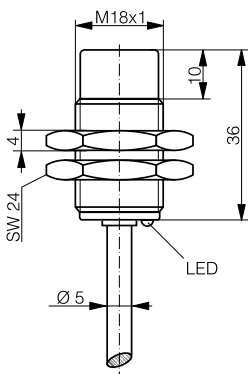
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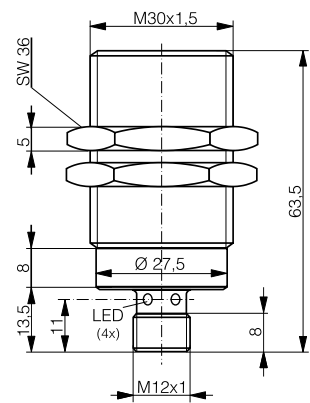
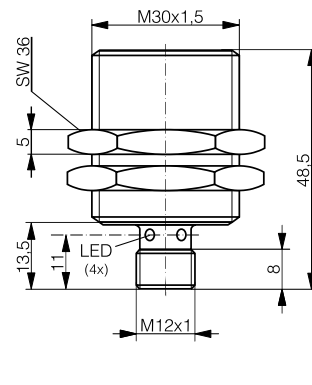
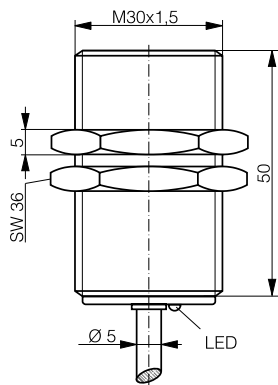


* IO-Link	* IO-Link	* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
200 Hz	200 Hz	200 Hz	200 Hz
10 ... 30 VDC	10 ... 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
DW-AD-513-M18-120	DW-AD-513-M18	DW-AS-513-M18-120	DW-AS-513-M18-002
DW-AD-511-M18-120	DW-AD-511-M18	DW-AS-511-M18-120	DW-AS-511-M18-002
	DW-AD-514-M18		DW-AS-514-M18-002
PNP NC, NPN NC	NPN NC	PNP NC, NPN NC	NPN NC

BASIC

INDUCTIVE

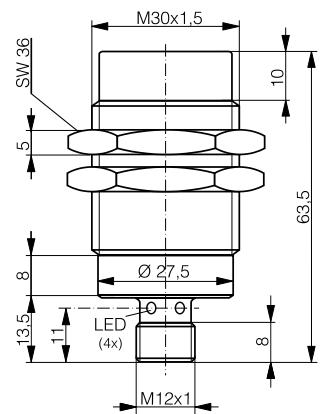
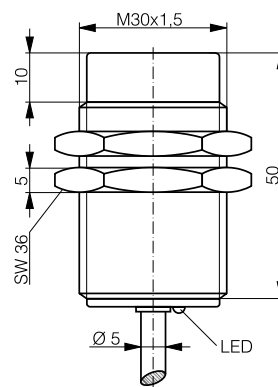
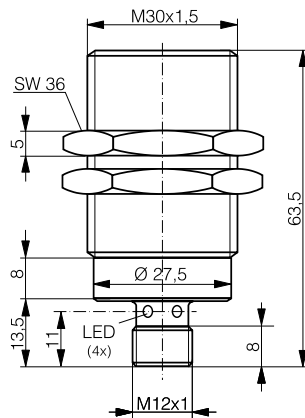
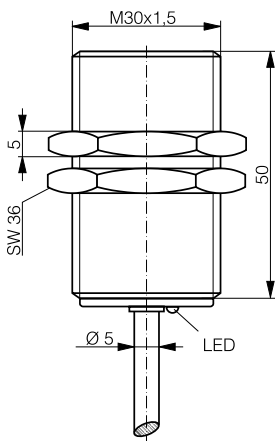
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M30	M30	M30
OPERATING DISTANCE MM	10	10	10



DATA	IO-Link	IO-Link	IO-Link
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	Embeddable	Embeddable	Embeddable
Max. switching frequency	1200 Hz	1200 Hz	1200 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-M30	DW-AS-603-M30-120	DW-AS-603-M30-002
NPN NO	DW-AD-601-M30	DW-AS-601-M30-120	DW-AS-601-M30-002
PNP NC			
Other types available	PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC	PNP NC, NPN NC

BASIC

FULL INOX	FULL INOX	CLASSICS	CLASSICS
M30	M30	M30	M30
10	10	15	15



IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass
PUR cable	Connector S12	PVC cable	Connector S12
IP 68	IP 68 & IP 69K	IP 67	IP 67
Embeddable	Embeddable	Non-embeddable	Non-embeddable
50 Hz	50 Hz	700 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-AS-703-M30-BAS	DW-AD-703-M30-BAS	DW-AD-613-M30	DW-AS-613-M30-002
DW-AS-701-M30-BAS	DW-AD-701-M30-BAS	DW-AD-611-M30	DW-AS-611-M30-002
		PNP NC, NPN NC, length 35 mm	PNP NC, NPN NC, length 35 mm

Inductive

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BASIC

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE

M30

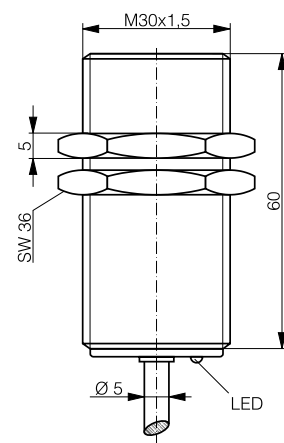
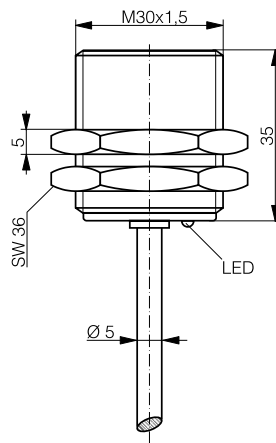
M30

OPERATING DISTANCE MM

22

22

INDUCTIVE

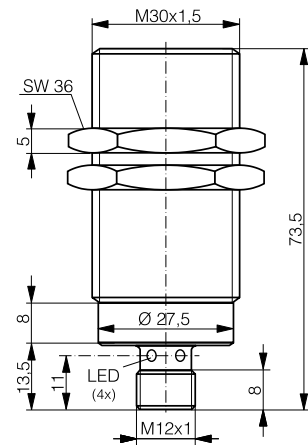
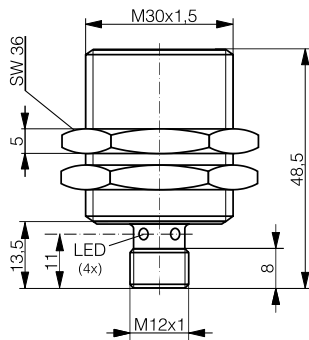


* IO-Link available from Q4/18

DATA	* IO-Link	* IO-Link
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
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-AD-503-M30-120	DW-AD-503-M30
NPN NO	DW-AD-501-M30-120	DW-AD-501-M30
PNP NC		DW-AD-504-M30
Other types available	PNP NC, NPN NC	NPN NC

BASIC

EXTRA DISTANCE	EXTRA DISTANCE
M30	M30
22	22



* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12
IP 67	IP 67
Quasi-embeddable	Quasi-embeddable
200 Hz	200 Hz
10 ... 30 VDC	10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA
DW-AS-503-M30-120	DW-AS-503-M30-002
DW-AS-501-M30-120	DW-AS-501-M30-002
	DW-AS-504-M30-002
PNP NC, NPN NC	NPN NC

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BASIC

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE MM

M30

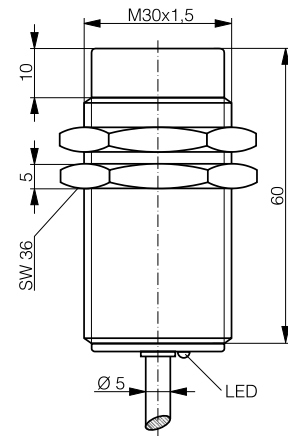
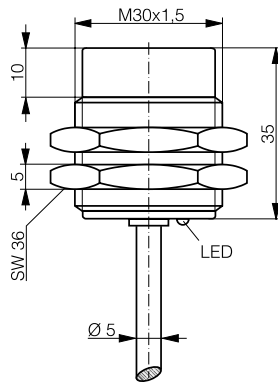
M30

OPERATING DISTANCE MM

40

40

INDUCTIVE



* IO-Link available from Q4/18

DATA

*  IO-Link

*  IO-Link

Housing material

Chrome-plated brass

Chrome-plated brass

Connection

PVC cable

PVC cable

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-AD-513-M30-120

DW-AD-513-M30

NPN NO

DW-AD-511-M30-120

DW-AD-511-M30

PNP NC

Other types available

PNP NC, NPN NC

PNP NC, NPN NC

BASIC

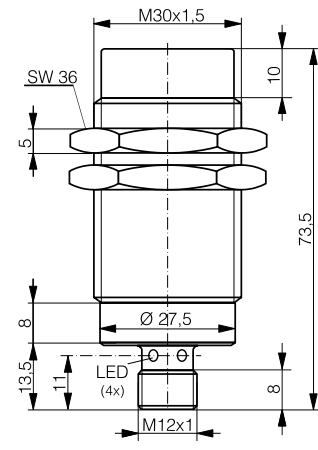
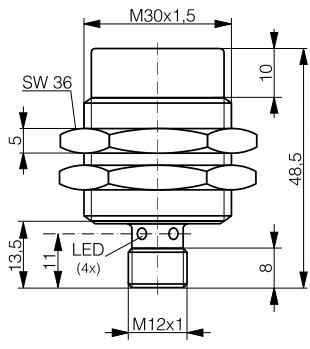
EXTRA DISTANCE	EXTRA DISTANCE
M30	M30
40	40

Inductive



Photoelectric

Safety



RFID

Connectivity

* IO-Link

* IO-Link

Accessories

Chrome-plated brass
Connector S12
IP 67
Non-embeddable
100 Hz
10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F
≤ 200 mA
DW-AS-513-M30-120
DW-AS-511-M30-120
PNP NC, NPN NC

Chrome-plated brass
Connector S12
IP 67
Non-embeddable
100 Hz
10 ... 30 VDC
-25 ... +70°C / -13 ... +158°F
≤ 200 mA
DW-AS-513-M30-002
DW-AS-511-M30-002
DW-AS-514-M30-002

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BASIC

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

□ 40 x 40

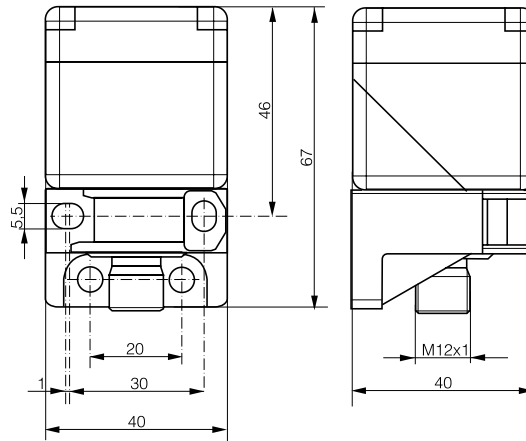
□ 40 x 40

OPERATING DISTANCE MM

15

20

INDUCTIVE



DATA

IO-Link

IO-Link

Housing material

PA GF

PA GF

Connection

Connector S12

Connector S12

Degree of protection

IP 68 / IP 69K

IP 68 / IP 69K

Mounting

Embeddable

Embeddable

Max. switching frequency

100 Hz

100 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 + NC

DW-AS-60A-C44

DW-AS-62A-C44

NPN NO + NC

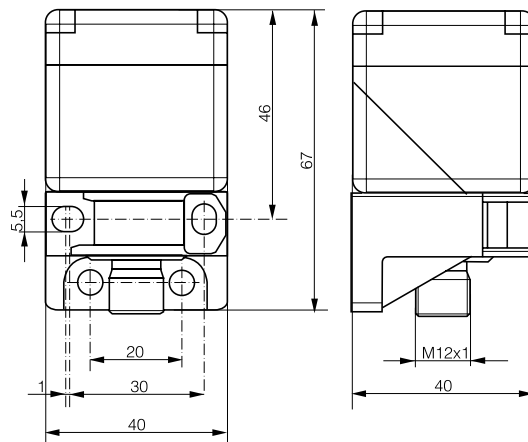
DW-AS-60B-C44

DW-AS-62B-C44

Other types available

BASIC

CLASSICS	CLASSICS
□ 40 x 40	□ 40 x 40
30	40



IO-Link	IO-Link
PA GF	PA GF
Connector S12	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K
Non-embeddable	Non-embeddable
100 Hz	100 Hz
10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA
DW-AS-61A-C44	DW-AS-63A-C44
DW-AS-61B-C44	DW-AS-63B-C44

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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 (1160 psi)

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

FAMILY

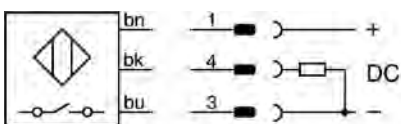
HOUSING SIZE MM

OPERATING DISTANCE MM

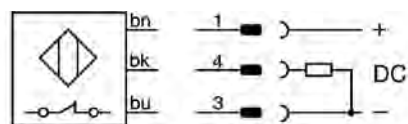
INDUCTIVE

WIRING DIAGRAMS

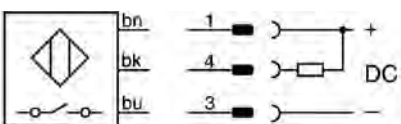
PNP NO



PNP NC



NPN NO



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

PNP NO

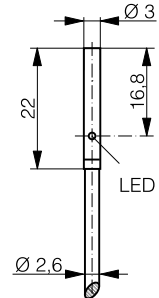
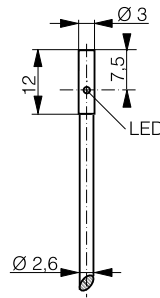
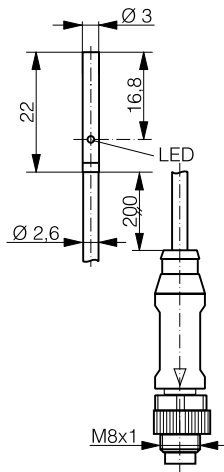
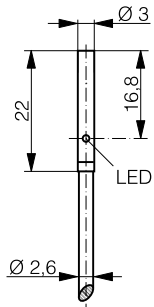
NPN NO

PNP NC

Other types available

MINIATURE

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



IO-Link	IO-Link	IO-Link	IO-Link
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

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

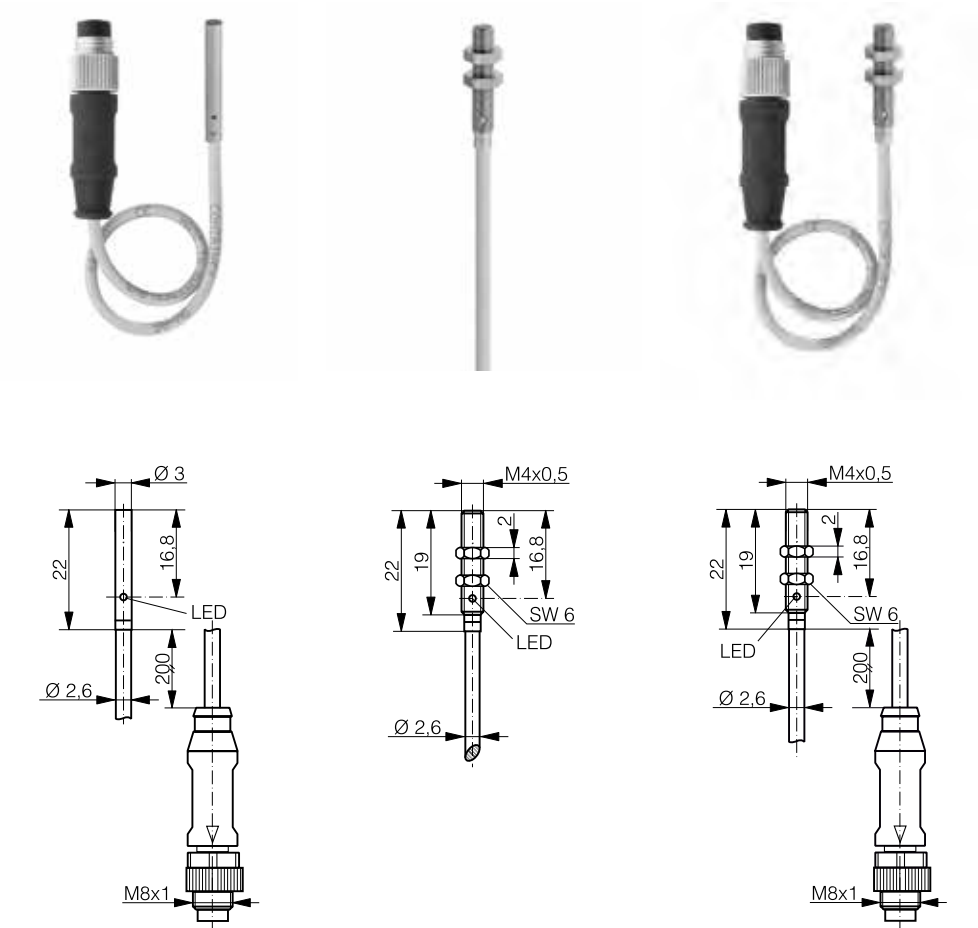
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MINIATURE

INDUCTIVE

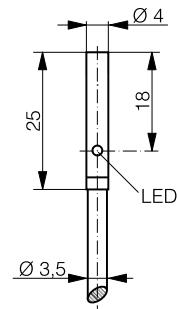
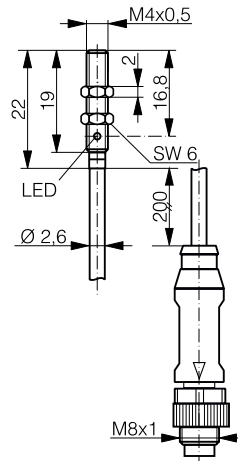
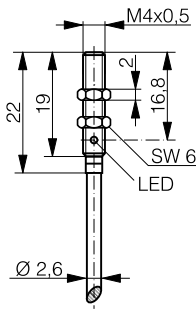
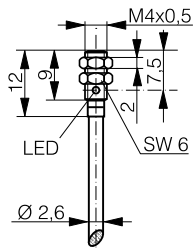
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 3	M4	M4
OPERATING DISTANCE MM	1	0.6	0.6



DATA	IO-Link	IO-Link	IO-Link
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
M4	M4	M4	Ø 4
1	1	1	0.8



IO-Link	IO-Link	IO-Link	IO-Link
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

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 4

Ø 4

Ø 4

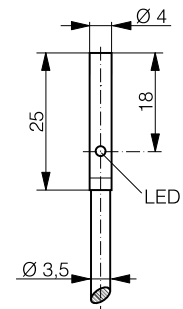
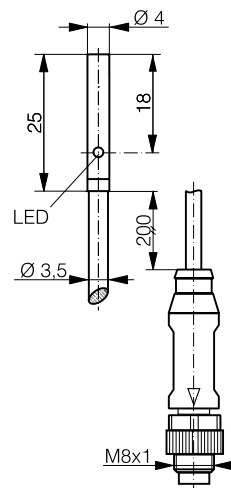
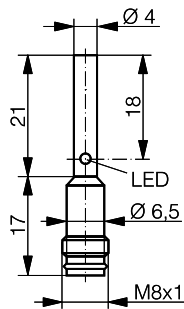
OPERATING DISTANCE MM

0.8

0.8

1.5

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

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, PUR cable

NPN NC, pigtail

MINIATURE

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

Inductive

Photoelectric

Safety

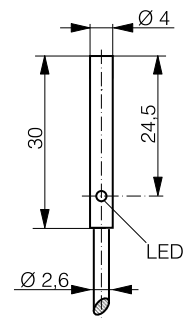
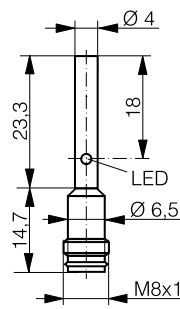
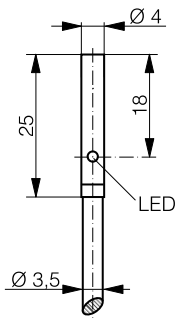
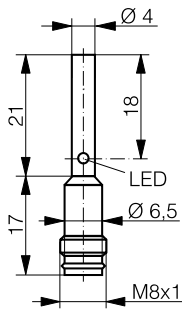
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* IO-Link available from Q4/18

IO-Link	* IO-Link	* IO-Link	IO-Link
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 68 / IP 69K
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, pigtail	NPN NC	pigtail

MINIATURE

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

M5

M5

M5

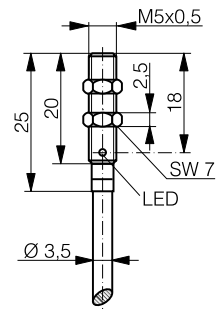
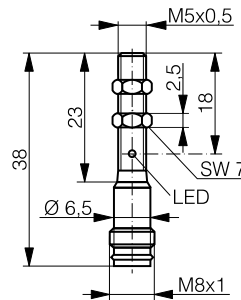
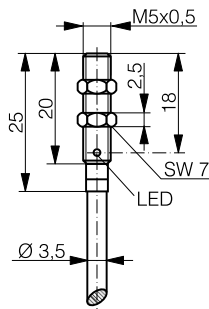
OPERATING DISTANCE MM

0.8

0.8

1.5

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

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

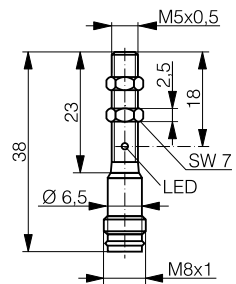
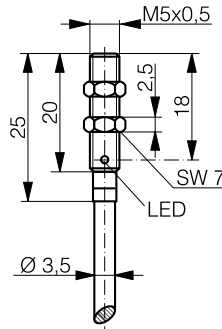
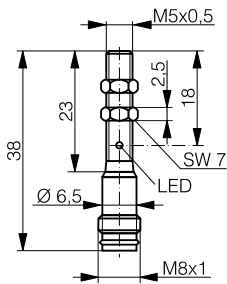
NPN NC, pigtail

NPN NC

NPN NC, pigtail

MINIATURE

CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
M5	M5	M5
1.5	2.5	2.5



* IO-Link available from Q4/18

IO-Link	* IO-Link	* IO-Link
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

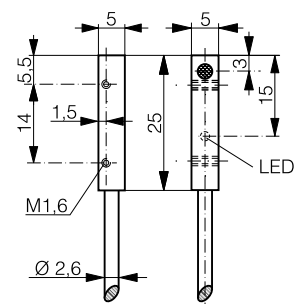
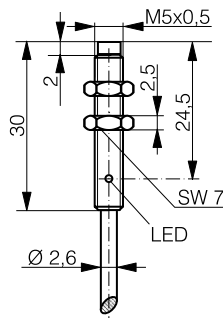
□ 5 x 5

OPERATING DISTANCE MM

3

0.8

INDUCTIVE



DATA

 IO-Link

 IO-Link

Housing material

Stainless steel V2A

Chrome-plated brass

Connection

PVC cable

PUR cable

Degree of protection

IP 68 / IP 69K

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

Pigtail

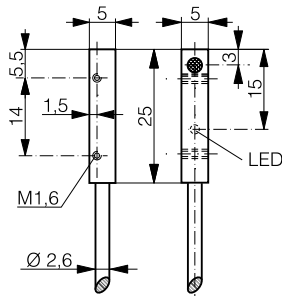
NPN NC, pigtail

MINIATURE

CLASSICS

□ 5 x 5

1.5



Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

Glossary

Index

IO-Link

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, pigtail




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 100 bar (1451 psi)
- ✓  IO-Link

RANGE OVERVIEW

Housing size

Full Inox

EXTREME

M8

p. 83-84

M12

p. 84-86

M18

p. 87-88

M30

p. 89-90

C23

p. 91

FAMILY

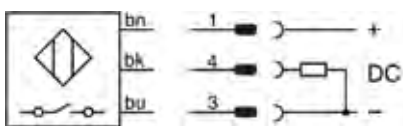
HOUSING SIZE

OPERATING DISTANCE MM

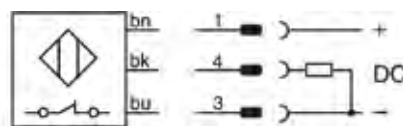
INDUCTIVE

WIRING DIAGRAMS

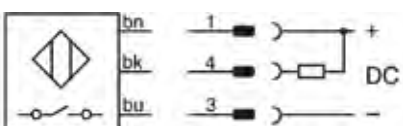
PNP NO



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

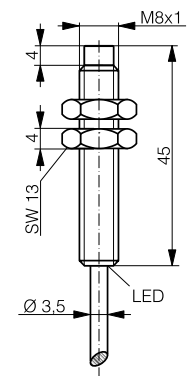
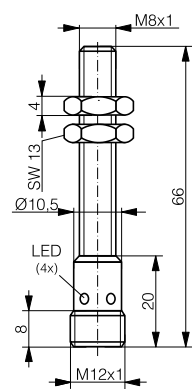
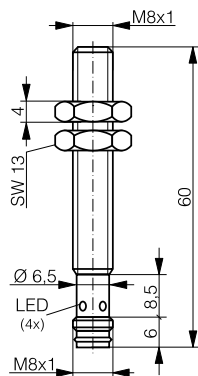
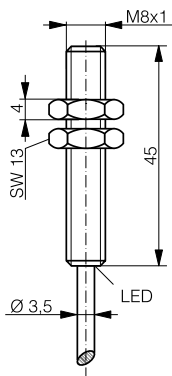
FULL INOX	FULL INOX	FULL INOX	FULL INOX
M8	M8	M8	M8
3	3	3	6

Inductive



Photoelectric

Safety



RFID

Connectivity

IO-Link	IO-Link	IO-Link	IO-Link
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 ... +85°C / -13 ... +185°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-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, pigtail	PNP NC, NPN NC	PNP NC, NPN NC	NPN NC

Accessories

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EXTREME

FAMILY

FULL INOX

FULL INOX

FULL INOX

HOUSING SIZE

M8

M8

M12

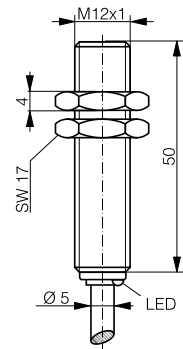
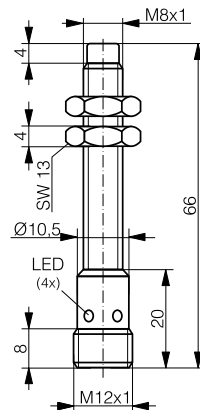
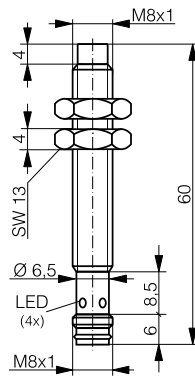
OPERATING DISTANCE MM

6

6

2 (4)

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

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 ... +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-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

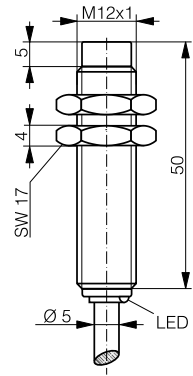
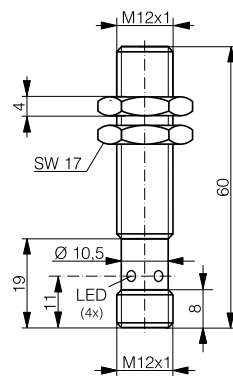
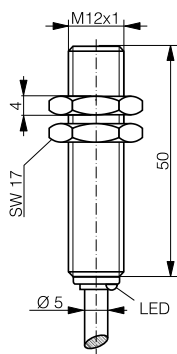
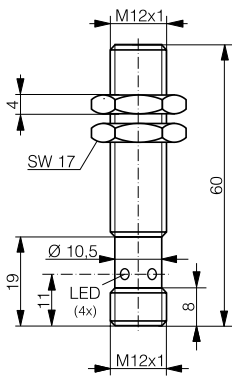
PNP NC, NPN NC

PNP NC, NPN NC

PNP NC, NPN NC,
non-embeddable (Sn 4 mm)

EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX
M12	M12	M12	M12
2 (4)	6	6	10



IO-Link	IO-Link	IO-Link	IO-Link
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 ... +85°C / -13 ... +185°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-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, non-embeddable (Sn 4 mm)	PNP NC, NPN NC	NPN NC	PNP NC, NPN NC

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

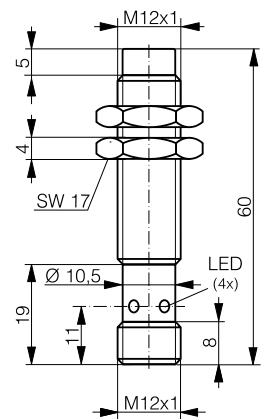
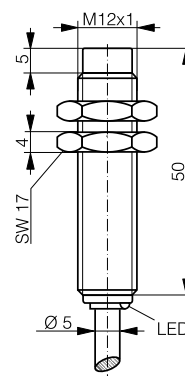
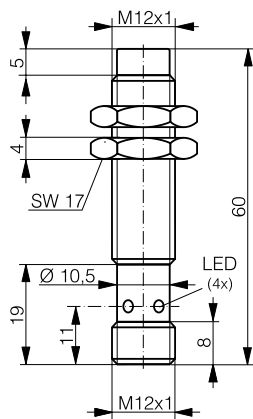
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EXTREME

INDUCTIVE

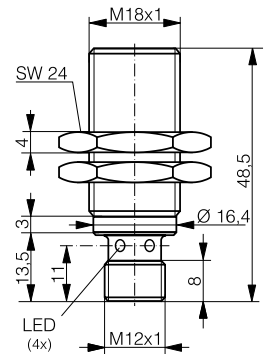
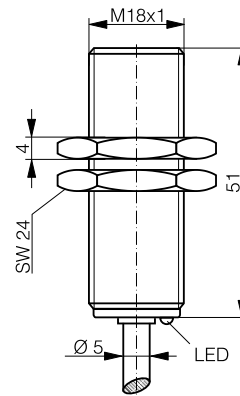
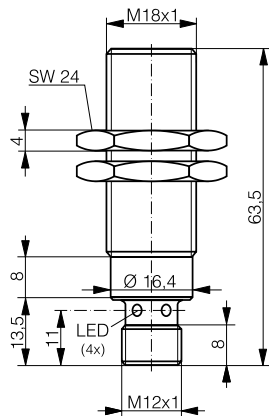
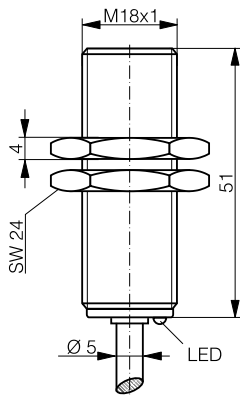
FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M12	M12	M12
OPERATING DISTANCE MM	10	15	15



DATA	IO-Link	IO-Link	IO-Link
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	PUR cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	400 Hz	300 Hz	300 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-AS-713-M12	DW-AD-733-M12	DW-AS-733-M12
NPN NO	DW-AS-711-M12	DW-AD-731-M12	DW-AS-731-M12
PNP NC			
Other types available	PNP NC, NPN NC		

EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX
M18	M18	M18	M18
5	5 (8)	10	10

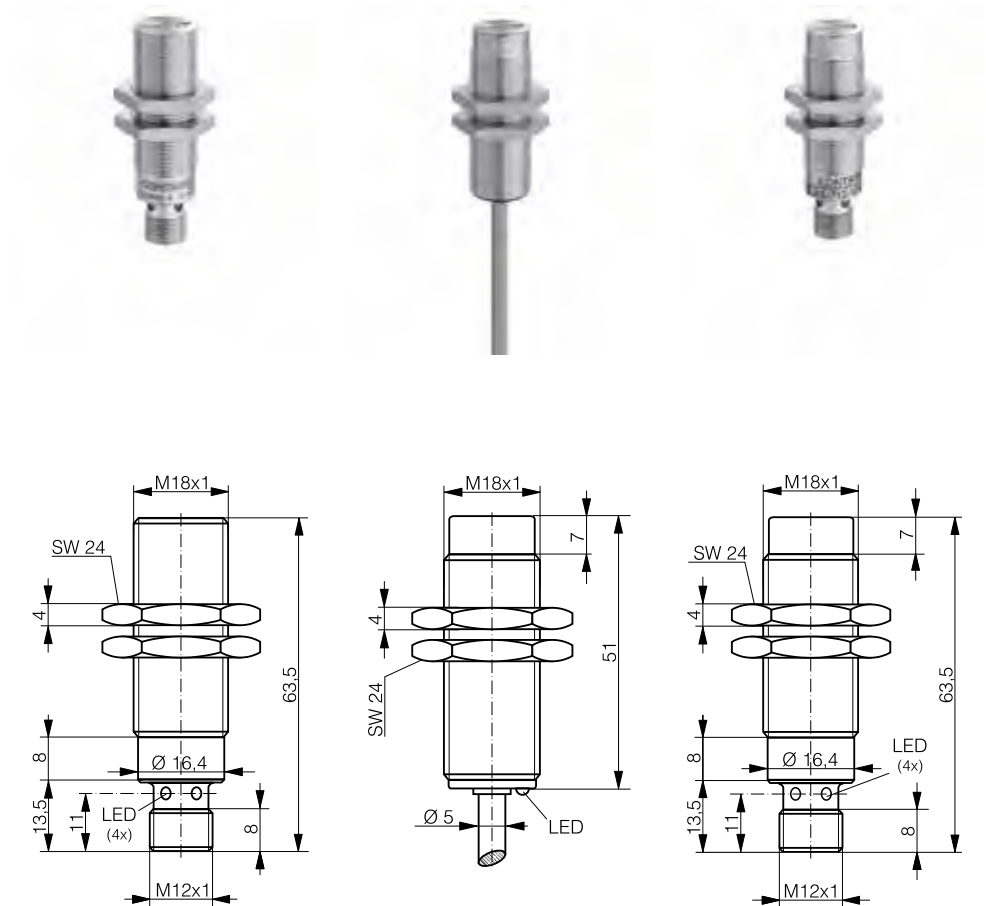


IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S12	PUR cable	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	Embeddable
500 Hz	500 Hz	200 Hz	200 Hz
10 ... 30 VDC	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	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AD-703-M18-303	DW-AS-703-M18-303	DW-AD-703-M18	DW-AS-703-M18-120
DW-AD-701-M18-303	DW-AS-701-M18-303	DW-AD-701-M18	DW-AS-701-M18-120
		DW-AD-704-M18	
PNP NC, NPN NC	PNP NC, NPN NC, non-embeddable (Sn 8 mm)	NPN NC, length 35 mm	PNP NC, NPN NC

EXTREME

INDUCTIVE

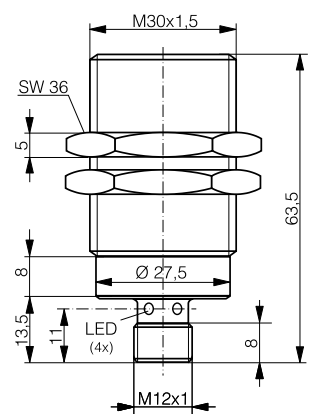
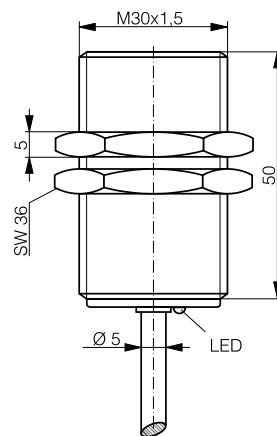
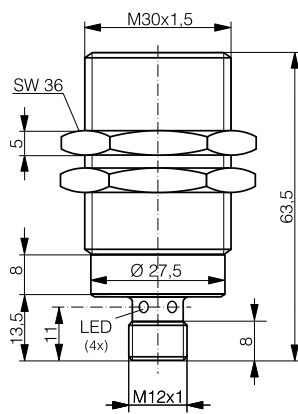
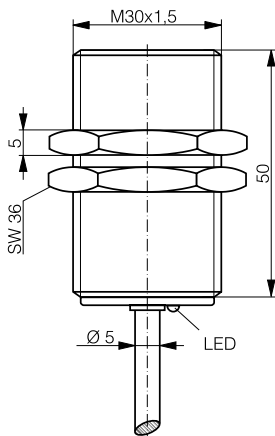
FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M18	M18	M18
OPERATING DISTANCE MM	10	20	20



DATA	IO-Link	IO-Link	IO-Link
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	PUR cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	200 Hz	200 Hz	200 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-AS-703-M18-002	DW-AD-713-M18	DW-AS-713-M18-002
NPN NO	DW-AS-701-M18-002	DW-AD-711-M18	DW-AS-711-M18-002
PNP NC	DW-AS-704-M18-002		
Other types available	NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

EXTREME

FULL INOX	FULL INOX	FULL INOX	FULL INOX
M30	M30	M30	M30
10	10	20	20



IO-Link	IO-Link	IO-Link	IO-Link
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 S12	PUR cable	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	Embeddable
250 Hz	250 Hz	100 Hz	100 Hz
10 ... 30 VDC	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	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AD-703-M30-303	DW-AS-703-M30-303	DW-AD-703-M30	DW-AS-703-M30-002
		DW-AD-701-M30	DW-AS-701-M30-002
		DW-AD-704-M30	
NPN NC		NPN NC	PNP NC, NPN NC

Inductive

Photoelectric

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EXTREME

FAMILY

FULL INOX

FULL INOX

HOUSING SIZE

M30

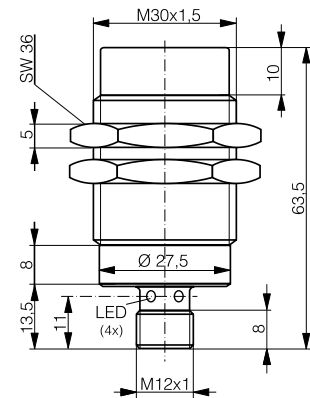
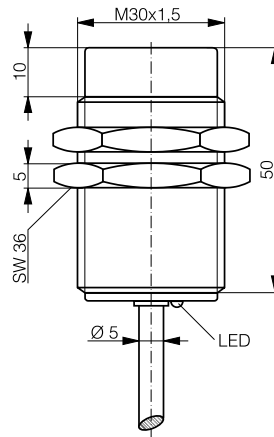
M30

OPERATING DISTANCE MM

40

40

INDUCTIVE



DATA

IO-Link

IO-Link

Housing material

Stainless steel V2A

Stainless steel V2A

Sensing face material

Stainless steel V2A

Stainless steel V2A

Connection

PUR cable

Connector S12

Degree of protection

IP 68 & IP 69K

IP 68 & IP 69K

Mounting

Non-embeddable

Non-embeddable

Max. switching frequency

90 Hz

90 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-713-M30

DW-AS-713-M30-002

NPN NO

DW-AD-711-M30

DW-AS-711-M30-002

Other types available

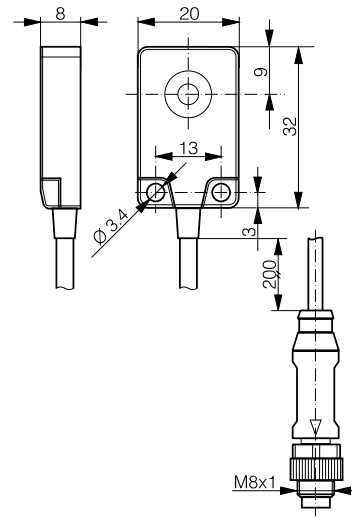
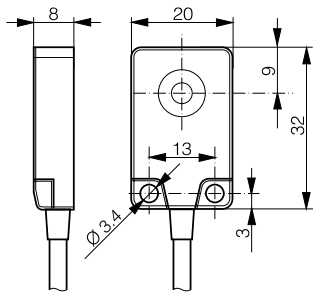
PNP NC, NPN NC

PNP NC, NPN NC

EXTREME

FULL INOX	FULL INOX
C23	C23
7	7

Inductive
Photoelectric
Safety
RFID
Connectivity
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IO-Link	IO-Link
Stainless steel V4A/AISI/316L	Stainless steel V4A/AISI/316L
Stainless steel V4A/AISI/316L	Stainless steel V4A/AISI/316L
PUR cable	PUR cable / Connector S8
IP 68 & IP 69K	IP 68 & IP 69K
Embeddable	Embeddable
180 Hz	180 Hz
10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA
DW-AD-703-C23	DW-AV-703-C23-276
DW-AD-701-C23	DW-AV-701-C23-276



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. 95

M8

p. 95-96

M12

p. 96-97

M18

p. 97-98

M30

p. 98-99

FAMILY

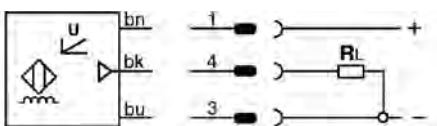
HOUSING SIZE MM

SENSING RANGE MM

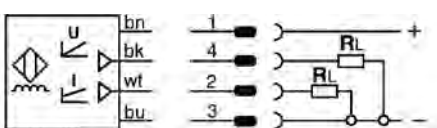
INDUCTIVE

WIRING DIAGRAMS

Analog C8/M8



Analog M12/M18/M30



DATA

Bandwidth (-3 dB)

Output voltage

Housing material

Connection

Degree of protection

Mounting

Supply voltage range

Ambient temperature range

Output current

Output 0...10 V

Output 0...5 V

Other types available

ANALOG OUTPUT

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

Inductive

Photoelectric

Safety

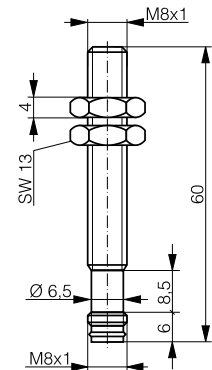
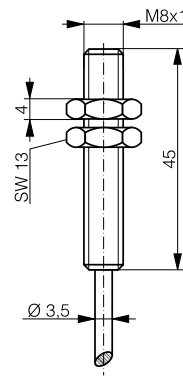
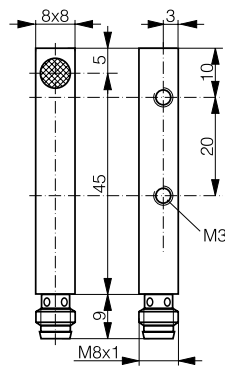
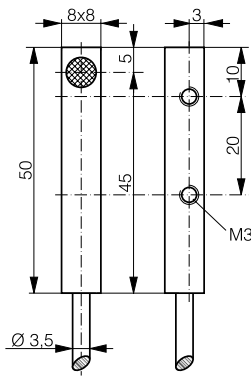
RFID

Connectivity

Accessories

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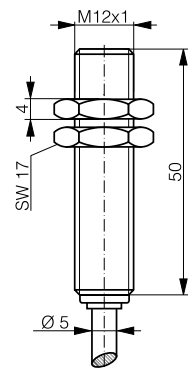
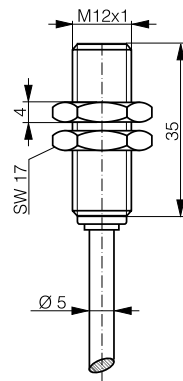
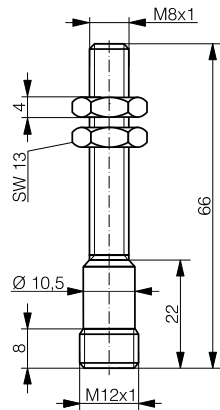


1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)
0 ... 10 V	0 ... 10 V	0 ... 5 V / 0 ... 10 V (-390)	0 ... 10 V
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PUR cable	Connector S8	PUR cable	Connector S8
IP 67	IP 67	IP 67	IP 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

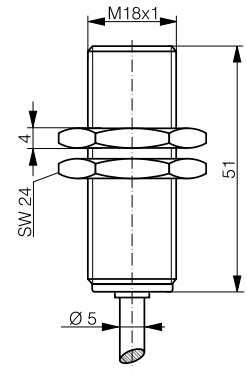
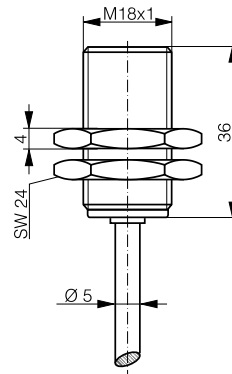
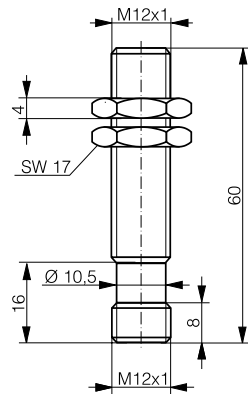
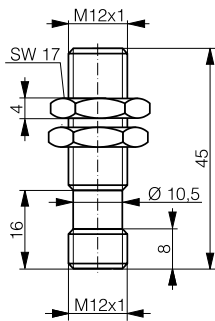
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M8	M12	M12
SENSING RANGE MM	0 ... 4	0 ... 6	0 ... 6



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
M12	M12	M18	M18
0 ... 6	0 ... 6	0 ... 10	0 ... 10



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

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

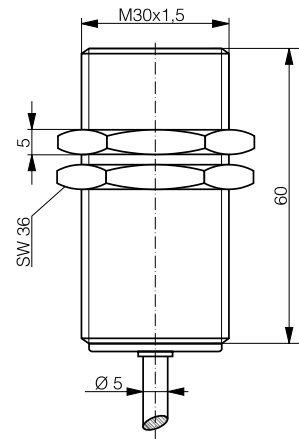
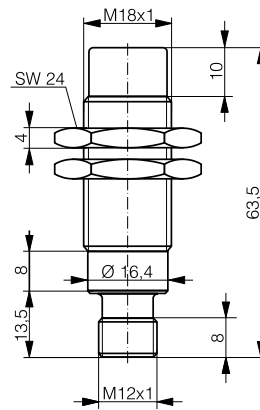
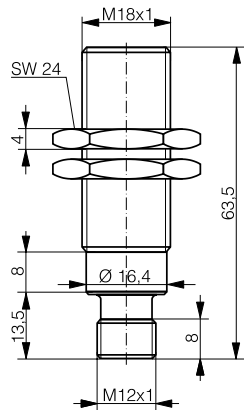
Glossary

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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

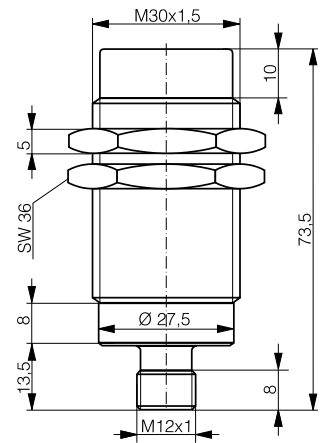
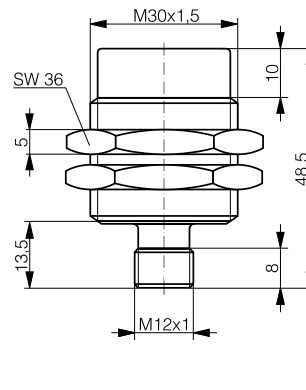
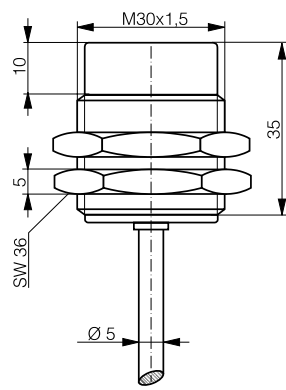
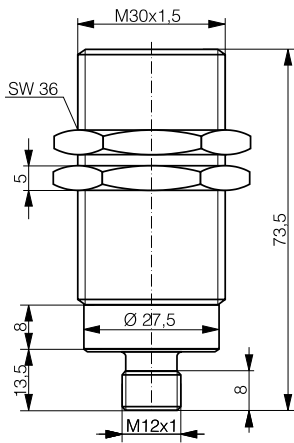
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M30	M30	M30	M30
0 ... 20	0 ... 40	0 ... 40	0 ... 40

Inductive



Photoelectric

Safety



RFID

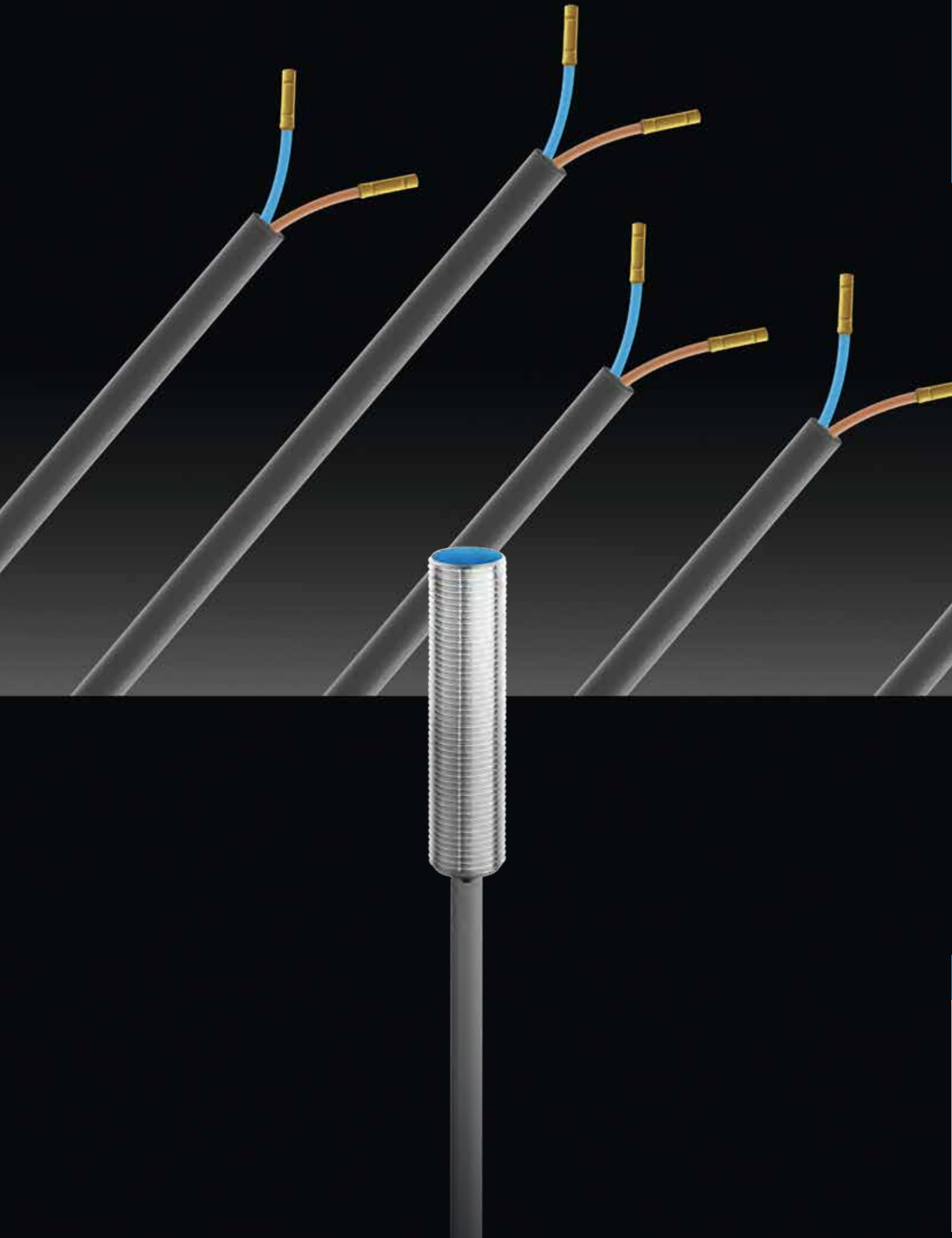
Connectivity

200 Hz (at s = 10 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)	100 Hz (at s = 20 mm)
0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-390)
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PUR cable	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
10 ... 30 / 15 ... 30 VDC (-390)	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-320)	10 ... 30 / 15 ... 30 VDC (-390)
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
1 ... 5 mA / 4 ... 20 mA (-390)	1 ... 5 mA / 4 ... 20 mA (-320)	1 ... 5 mA / 4 ... 20 mA (-320)	1 ... 5 mA / 4 ... 20 mA (-390)
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

Accessories

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EASY INSTALLATION AND HIGH
SWITCHING FREQUENCY

2-WIRE

INDUCTIVE SENSORS



KEY ADVANTAGES

- ✓ Two-wire sensors for series connection
- ✓ Sizes from Ø 3 mm to M30 and 5 x 5 mm
- ✓ DC and AC/DC types
- ✓ NAMUR types with switching frequencies up to 10,000 Hz

RANGE OVERVIEW	Housing size	Classics
2-WIRE	Ø 3 mm	p. 103
	M4	p. 103
	Ø 4 mm	p. 104
	M5	p. 105
	C5	p. 105
	Ø 6.5 mm	p. 106, 110
	M8	p. 107, 110-113
	M12	p. 107, 114-119
	M18	p. 108, 119-123
	M30	p. 109, 124-127

FAMILY

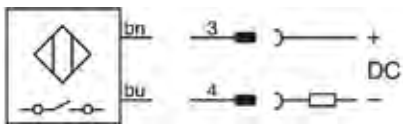
HOUSING SIZE

OPERATING DISTANCE MM

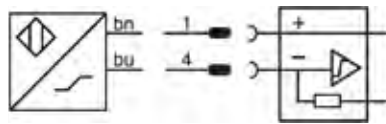
INDUCTIVE

WIRING DIAGRAMS

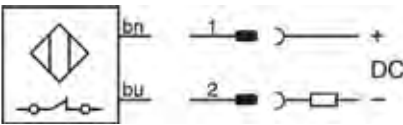
2-wire DC NO



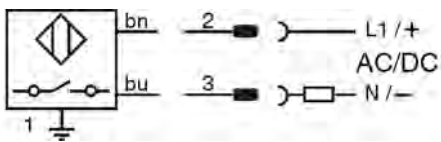
NAMUR



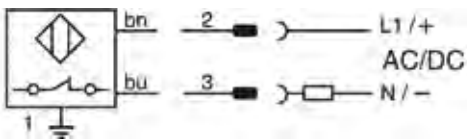
2-wire DC NC



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





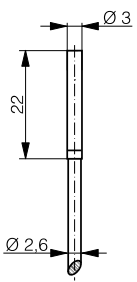
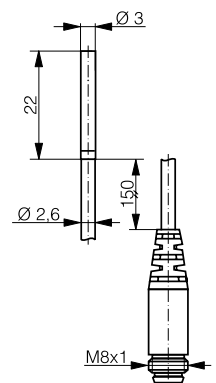
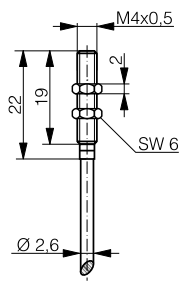
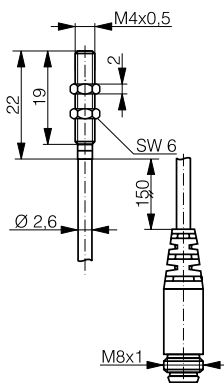
Output current

NAMUR

Other types available

* damped / non-damped

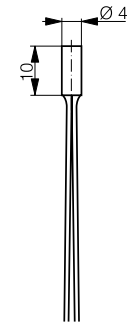
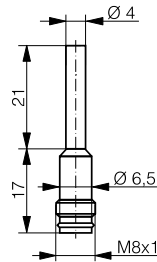
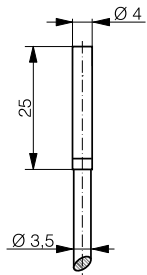
2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS	Inductive	
Ø 3	Ø 3	M4	M4		
0.6	0.6	0.6	0.6		
				Photoelectric	
					Safety
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		
Embeddable	Embeddable	Embeddable	Embeddable	Index	
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		

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

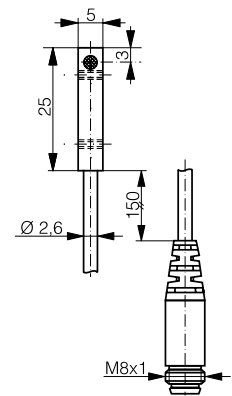
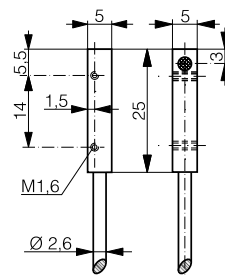
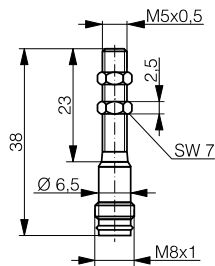
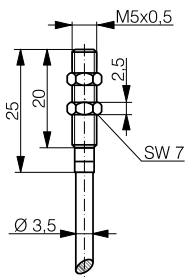
NAMUR

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



NAMUR

NAMUR

NAMUR

NAMUR

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

Inductive

Photoelectric

Safety

RFID

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2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 6.5

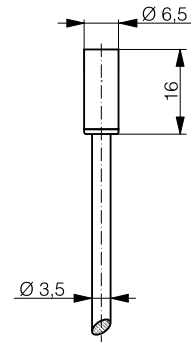
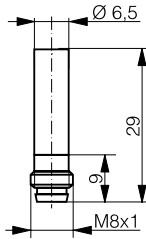
Ø 6.5

OPERATING DISTANCE MM

1.5

1.5

INDUCTIVE



NAMUR

NAMUR

DATA

Housing material

Stainless steel V2A

Stainless steel V2A

Connection

Connector S8

PVC cable

Degree of protection

IP 67

IP 67

Mounting

Embeddable

Embeddable

Max. switching frequency

10,000 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-605-065-129

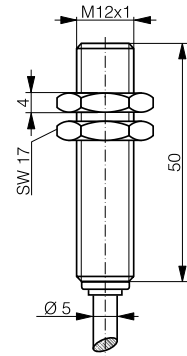
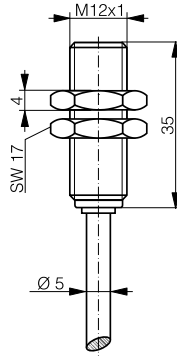
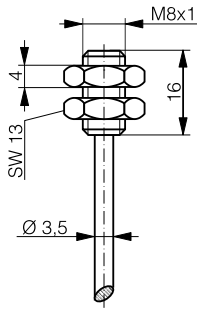
DW-AD-605-065-120

Other types available

* damped / non-damped

2-WIRE

CLASSICS	CLASSICS	CLASSICS
M8	M12	M12
1.5	2	2



NAMUR

NAMUR

NAMUR

Stainless steel V2A	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable
10,000 Hz	2500 Hz	2500 Hz
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
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
DW-AD-605-M8-120	DW-AD-605-M12-120	DW-AD-605-M12
	Non-embeddable	Non-embeddable

Inductive

Photoelectric

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2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

M18

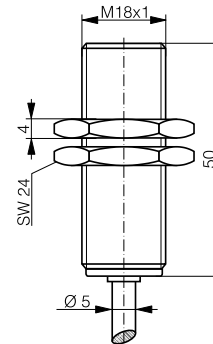
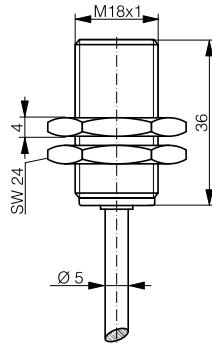
M18

OPERATING DISTANCE MM

5

5

INDUCTIVE



NAMUR

NAMUR

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

1000 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-AD-605-M18-120

DW-AD-605-M18

Other types available

* damped / non-damped

2-WIRE

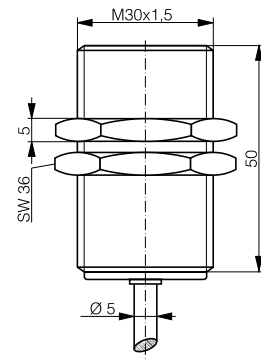
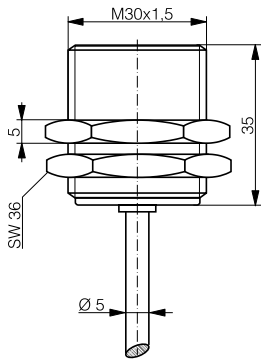
CLASSICS	CLASSICS
M30	M30
10	10

Inductive



Photoelectric

Safety



RFID

Connectivity

NAMUR

NAMUR

Accessories

Chrome-plated brass
PVC cable
IP 67
Embeddable
400 Hz
7.7 ... 9 VDC
-25 ... +70°C / -13 ... +158°F
≤ 1 / ≥ 2.2 mA*
DW-AD-605-M30-120

Chrome-plated brass
PVC cable
IP 67
Embeddable
400 Hz
7.7 ... 9 VDC
-25 ... +70°C / -13 ... +158°F
≤ 1 / ≥ 2.2 mA*
DW-AD-605-M30

Glossary

Index

2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

Ø 6.5

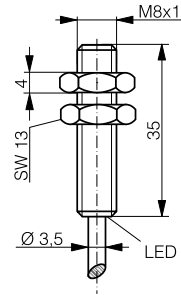
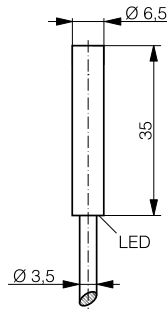
M8

OPERATING DISTANCE MM

1.5

1.5

INDUCTIVE



DATA

Housing material

Stainless steel V2A

Stainless steel V2A

Connection

PVC cable

PVC cable

Degree of protection

IP 67

IP 67

Mounting

Embeddable

Embeddable

Max. switching frequency

5000 Hz

5000 Hz

Supply voltage range

10 ... 65 VDC

10 ... 65 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

100 mA

≤ 100 mA

DC 2-wire NO

DW-DD-605-065

DW-DD-605-M8

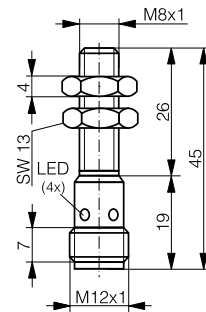
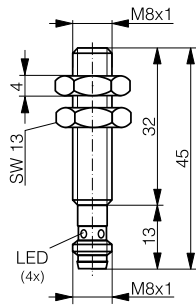
DC 2-wire NC

DW-DD-606-M8

Other types available

2-WIRE

CLASSICS	CLASSICS
M8	M8
1.5	1.5



Stainless steel V2A	Stainless steel V2A
Connector S8	Connector S12
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-DS-605-M8-001	DW-DS-605-M8
DW-DS-606-M8-001	DW-DS-606-M8

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

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2-WIRE

FAMILY

CLASSICS

CLASSICS

HOUSING SIZE MM

M8

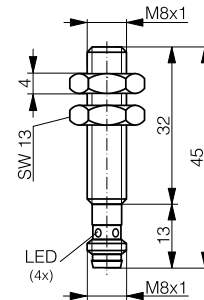
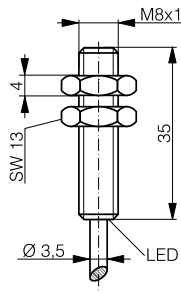
M8

OPERATING DISTANCE MM

2

2

INDUCTIVE



DATA

Housing material

Stainless steel V2A

Stainless steel V2A

Connection

PVC cable

Connector S8

Degree of protection

IP 67

IP 67

Mounting

Embeddable

Embeddable

Max. switching frequency

5000 Hz

5000 Hz

Supply voltage range

10 ... 65 VDC

10 ... 65 VDC

Ambient temperature range

-25 ... +70°C / -13 ... +158°F

-25 ... +70°C / -13 ... +158°F

Output current

≤ 100 mA

≤ 100 mA

DC 2-wire NO

DW-DD-625-M8

DW-DS-625-M8-001

DC 2-wire NC

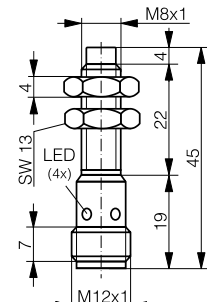
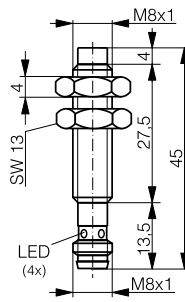
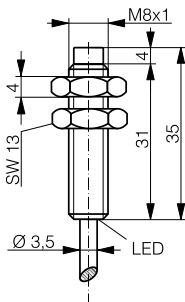
DW-DD-626-M8

DW-DS-626-M8-001

Other types available

2-WIRE

CLASSICS	CLASSICS	CLASSICS
M8	M8	M8
2.5	2.5	2.5



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PVC cable	Connector S8	Connector S12
IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable
5000 Hz	5000 Hz	5000 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-615-M8	DW-DS-615-M8-001	DW-DS-615-M8
DW-DD-616-M8	DW-DS-616-M8-001	DW-DS-616-M8

Inductive

Photoelectric

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RFID

Connectivity

Accessories

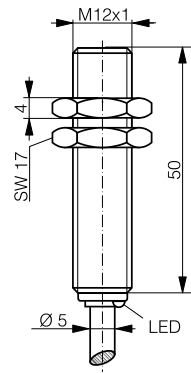
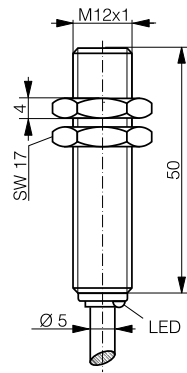
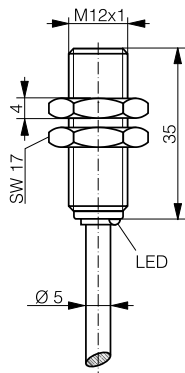
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2-WIRE

INDUCTIVE

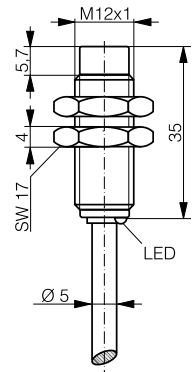
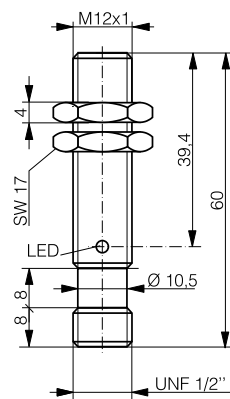
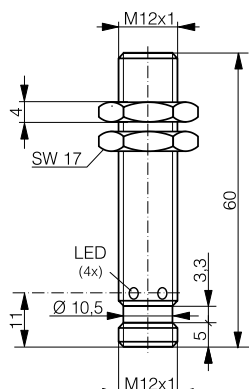
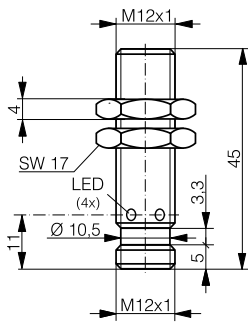
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	2	2	2



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

2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12	M12	M12	M12
2	2	2	4



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-DD-616-M12-120
		DW-AS-607-M12-069	

Inductive

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Connectivity

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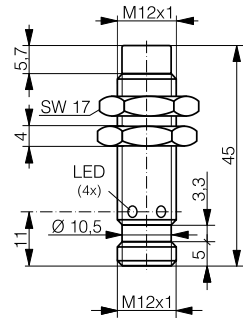
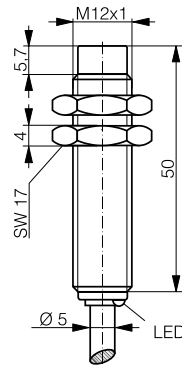
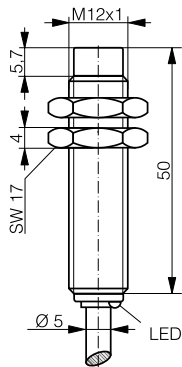
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2-WIRE

INDUCTIVE

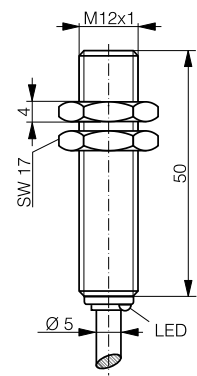
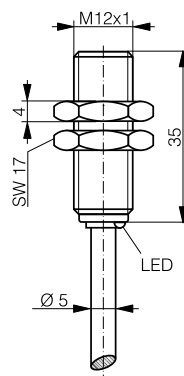
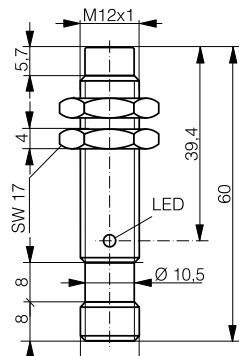
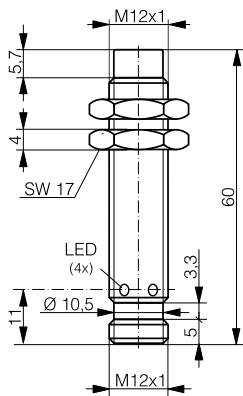
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	4	4	4



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
M12	M12	M12	M12
4	4	4	4



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

Inductive

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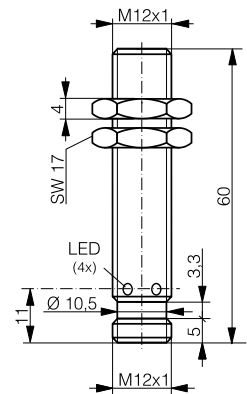
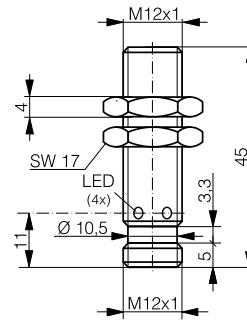
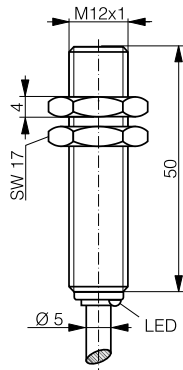
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2-WIRE

INDUCTIVE

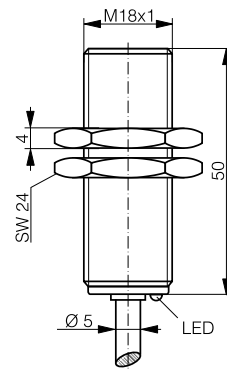
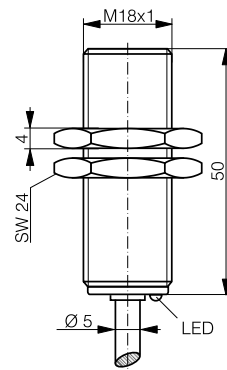
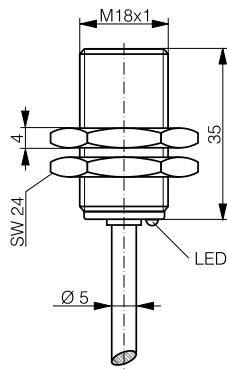
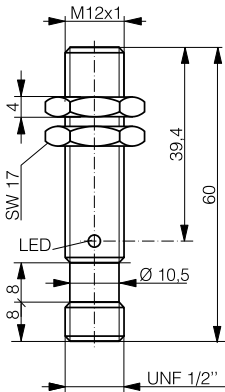
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M12	M12	M12
OPERATING DISTANCE MM	4	4	4



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
M12	M18	M18	M18
4	5	5	5



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector 1/2"	PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
25 Hz (AC) / 2000 Hz (DC)	1500 Hz	1500 Hz	25 Hz (AC) / 1500 Hz (DC)
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

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2-WIRE

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

M18

M18

M18

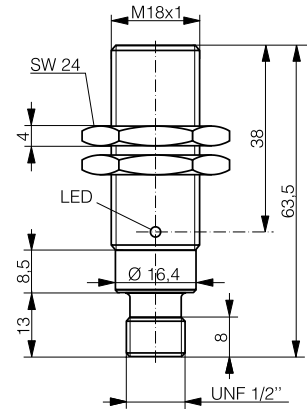
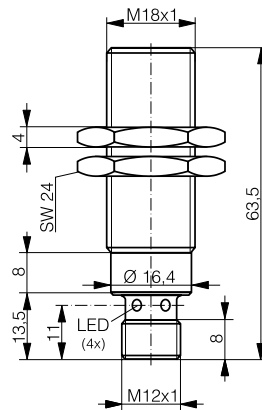
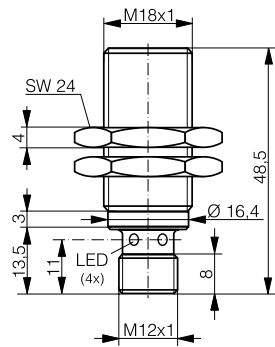
OPERATING DISTANCE MM

5

5

5

INDUCTIVE

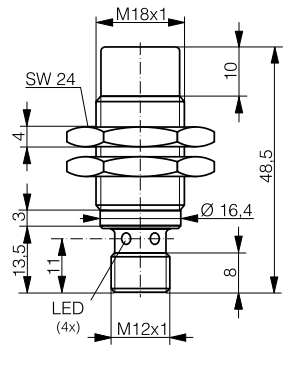
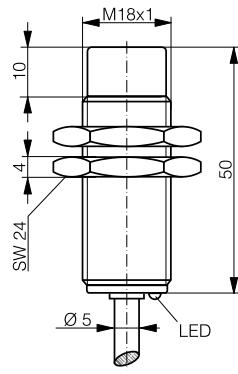
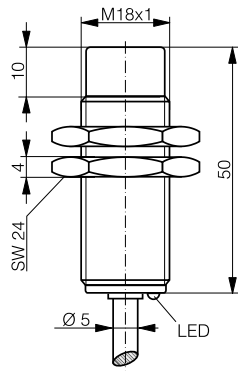
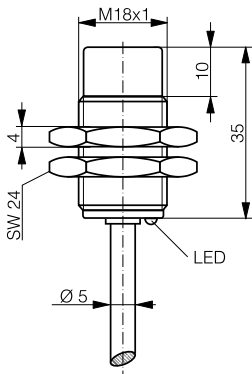


DATA

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
M18	M18	M18	M18
8	8	8	8



Inductive

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Connectivity

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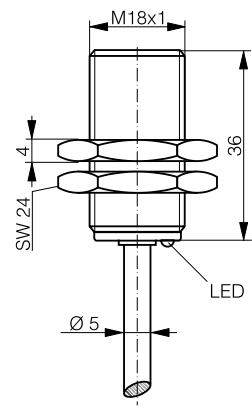
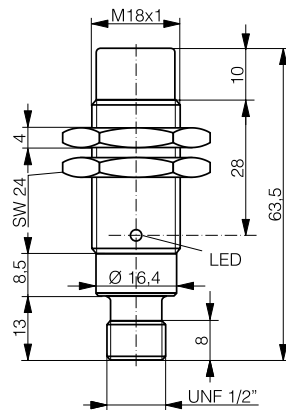
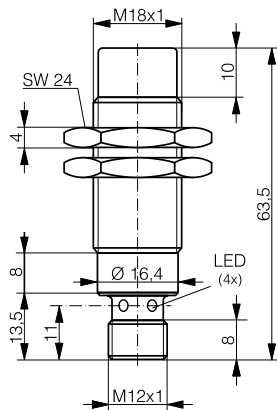
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Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
1200 Hz	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	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-AD-617-M18	DW-DS-615-M18-120
DW-DD-616-M18-120	DW-DD-616-M18	DW-AD-618-M18	DW-DS-616-M18-120

2-WIRE

INDUCTIVE

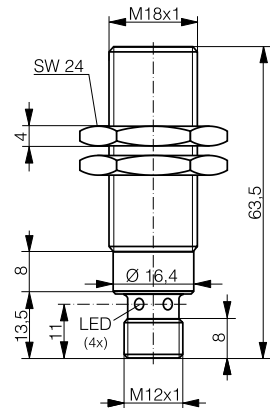
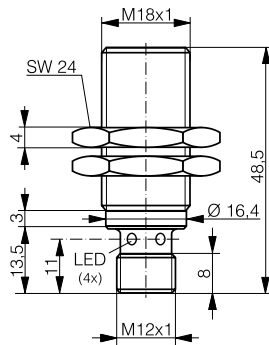
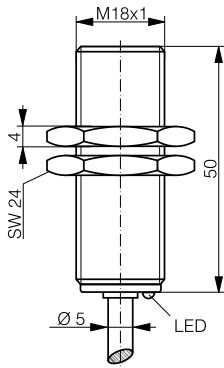
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M18	M18	M18
OPERATING DISTANCE MM	8	8	8



DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector 1/2"	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Quasi-embeddable
Max. switching frequency	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	1000 Hz
Supply voltage range	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 200 mA	≤ 100 mA
DC 2-wire NO	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
M18	M18	M18
8	8	8



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12
IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
1000 Hz	1000 Hz	1000 Hz
10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 100 mA
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

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

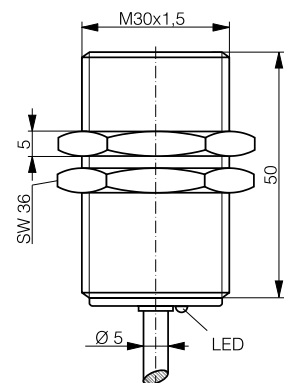
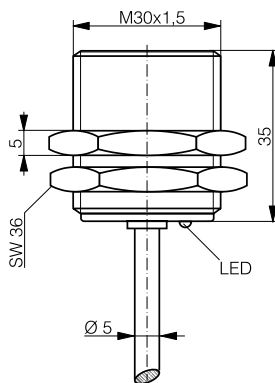
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2-WIRE

INDUCTIVE

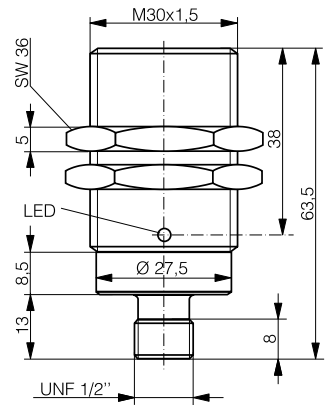
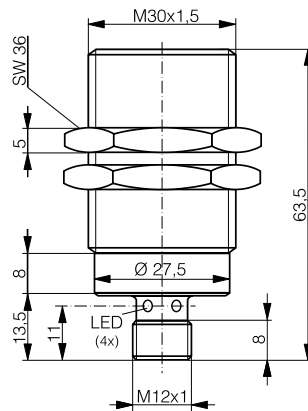
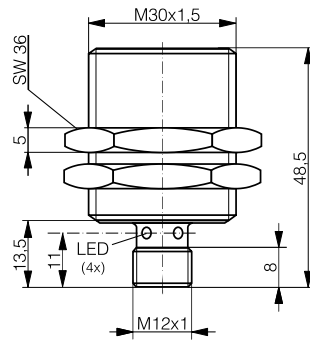
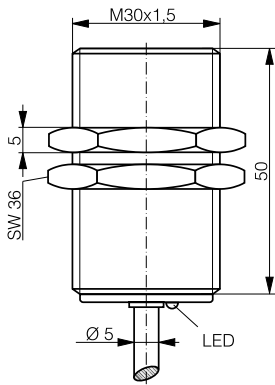
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30
OPERATING DISTANCE MM	10	10



DATA		
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	600 Hz	600 Hz
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA
DC 2-wire NO	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
M30	M30	M30	M30
10	10	10	10



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12	Connector 1/2"
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
25 Hz (AC) / 600 Hz (DC)	600 Hz	600 Hz	25 Hz (AC) / 600 Hz (DC)
20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 100 mA	≤ 100 mA	≤ 200 mA
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

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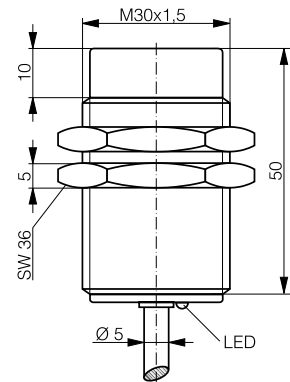
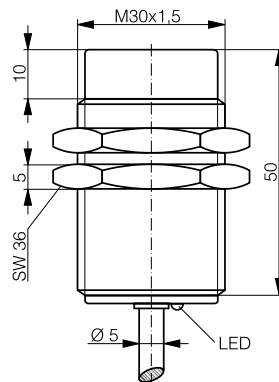
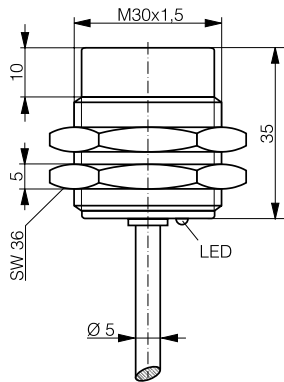
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2-WIRE

INDUCTIVE

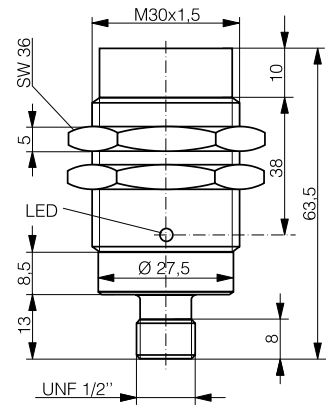
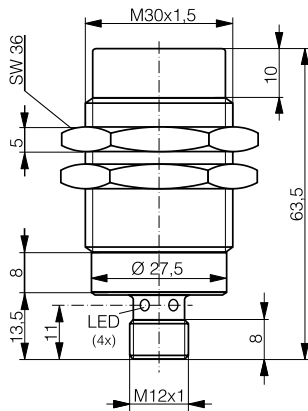
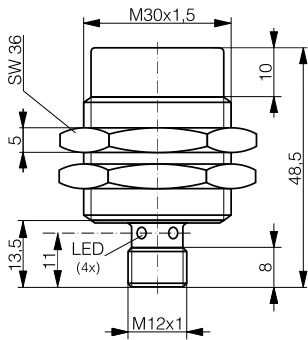
FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30	M30
OPERATING DISTANCE MM	15	15	15



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

2-WIRE

CLASSICS	CLASSICS	CLASSICS
M30	M30	M30
15	15	15



Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12	Connector 1/2"
IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable
500 Hz	500 Hz	25 Hz (AC) / 500 Hz (DC)
10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 200 mA
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

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PRESSURE




PRESSURE RESISTANT UP TO 200 BAR (2901 PSI)

EXTRA PRESSURE

INDUCTIVE SENSORS

KEY ADVANTAGES

- ✓ Pressure resistant up to 200 bar (2901 psi)
- ✓ High quality ASIC sensors with  IO-Link interface
- ✓ Mechanically and chemically rugged
- ✓ Impervious: IP 68
- ✓ Gas-tight sensing face
- ✓ Miniature devices

RANGE OVERVIEW	Housing size	Classics	Extra Distance
EXTRA PRESSURE	∅ 3 mm	p. 131	
	∅ 4 mm	p. 131	
	M5	p. 131	
	∅ 6.5 mm		p. 131

FAMILY

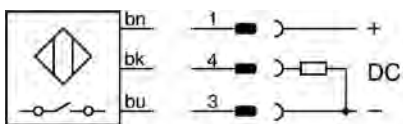
HOUSING SIZE MM

OPERATING DISTANCE MM

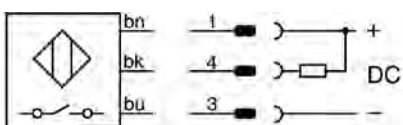
INDUCTIVE

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

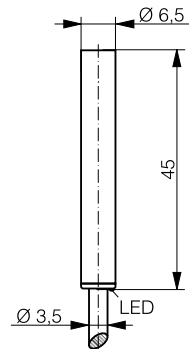
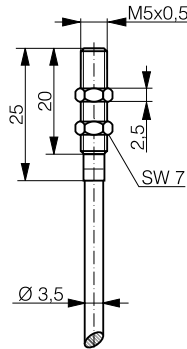
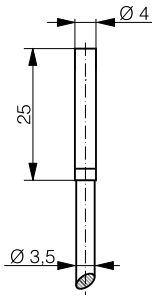
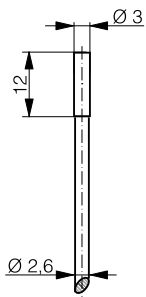
PNP NO

NPN NO

Other types available

EXTRA PRESSURE

CLASSICS	CLASSICS	CLASSICS	EXTRA DISTANCE
Ø 3	Ø 4	M5	Ø 6.5
0.8	0.6	0.6	2.5



* IO-Link available from Q4/18

IO-Link	IO-Link	IO-Link	* IO-Link
Ceramic ZrO ₂	Sapphire	Sapphire	Ceramic ZrO ₂
200 bar	20 bar	20 bar	20 bar
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable	PUR cable	PUR cable
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
8000 Hz	5000 Hz	5000 Hz	1000 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	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AD-623-03E-961	DW-AD-603-04E	DW-AD-603-M5E	DW-AD-503-065E
	DW-AD-601-04E	DW-AD-601-M5E	DW-AD-501-065E
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC

Inductive

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PRESSURE RESISTANT UP TO 500 BAR (7255 PSI)

HIGH PRESSURE INDUCTIVE SENSORS

KEY ADVANTAGES

- ✓ Highest operating (500 bar / 7255 psi) and peak pressure (1000 bar / 14510 psi) on the market
- ✓ Resistant to pressure cycles - 50 times longer lifetime under pressure than the market standard
- ✓ Gas-tight sensing face
- ✓ Large temperature range -25°C ... +100°C (-13°F ... +212°F)
- ✓ High quality ASIC sensors with  IO-Link interface

RANGE OVERVIEW	Housing size	Extra Distance	Full Inox
HIGH PRESSURE	M5 / P5	p. 135	
	M8 / P8	p. 135	
	M12 / P12	p. 135-137	p. 137
	M14 / P20	p. 137-138	

FAMILY

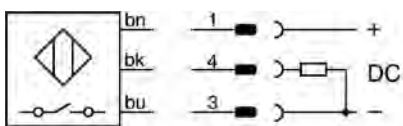
HOUSING SIZE

OPERATING DISTANCE MM

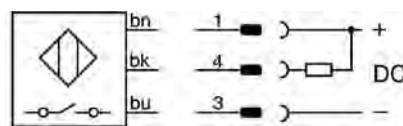
INDUCTIVE

WIRING DIAGRAMS

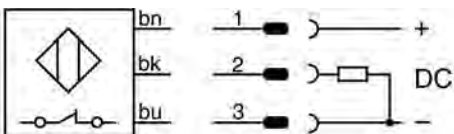
PNP NO



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 ($S_n = 1.5 \text{ mm}$)

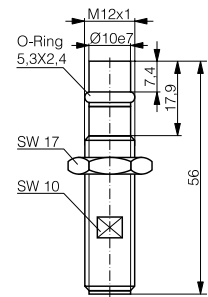
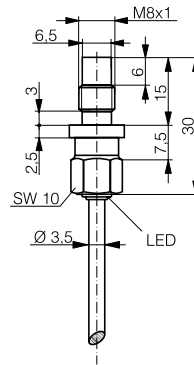
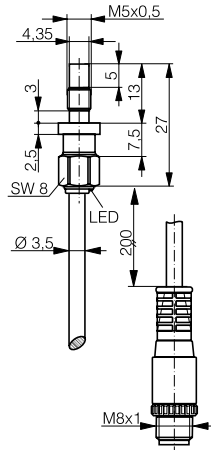
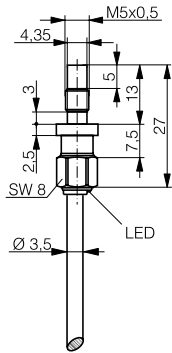
PNP NC ($S_n = 1.5 \text{ mm}$)

PNP NO ($S_n = 2.5 \text{ mm}$)

Other types available

HIGH PRESSURE

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



* IO-Link available from Q4/18

* IO-Link	* IO-Link	* IO-Link	* IO-Link
Ceramic ZrO ₂	Ceramic ZrO ₂	Ceramic ZrO ₂	Ceramic ZrO ₂
500 bar	500 bar	500 bar	500 bar
1000 bar	1000 bar	1000 bar	1000 bar
Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L	Stainless steel V2A
PUR cable	PUR cable / Connector S8	PUR cable	Connector S12
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
1000 Hz	1000 Hz	800 Hz	600 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°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
PNP NC, NPN NC	PNP NC, NPN NC	PNP NC, NPN NC	NPN NO, NPN NC

HIGH PRESSURE

FAMILY

EXTRA DISTANCE

EXTRA DISTANCE

EXTRA DISTANCE

HOUSING SIZE

M12 (P12)

M12 (P12)

M12 (P12)

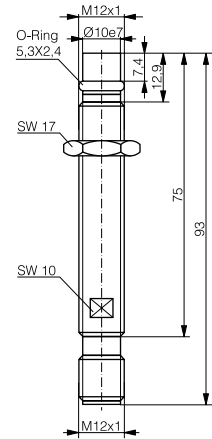
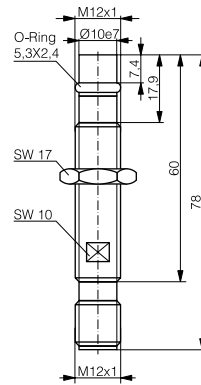
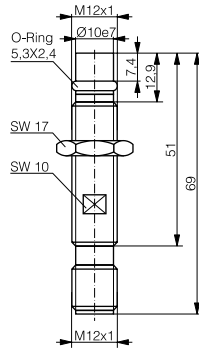
OPERATING DISTANCE MM

1.5 (2.5)

1.5 (2.5)

1.5 (2.5)

INDUCTIVE

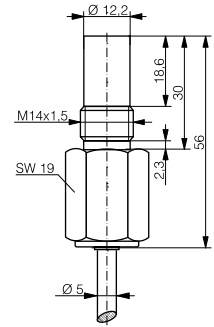
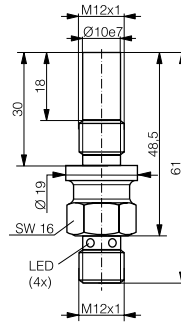
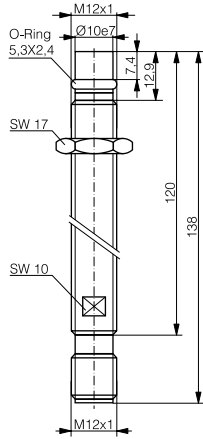
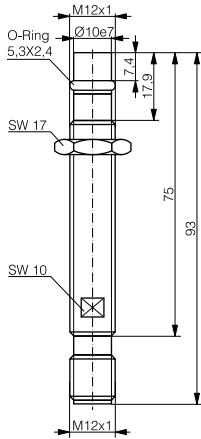


* IO-Link available from Q4/18

DATA	* IO-Link	* IO-Link	* IO-Link
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 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°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
M12 (P12)	M12 (P12)	M12 (P12)	M14 (P20)
1.5 (2.5)	1.5 (2.5)	1.5	3



* IO-Link	* IO-Link	IO-Link	* IO-Link
Ceramic ZrO ₂	Ceramic ZrO ₂	Stainless steel V4A / AISI 316L	Ceramic ZrO ₂
500 bar	500 bar	500 bar	500 bar
1000 bar	1000 bar	800 bar	1000 bar
Stainless steel V2A	Stainless steel V2A	Stainless steel V4A / AISI 316L	Stainless steel V4A / AISI 316L
Connector S12	Connector S12	Connector S12	PUR cable
IP 68	IP 68	IP 68 / IP 69K	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	600 Hz	850 Hz	500 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +100°C / -13 ... +212°F	-25 ... +100°C / -13 ... +212°F	-25 ... +85°C / -13 ... +185°F	-25 ... +100°C / -13 ... +212°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-AD-501-P20
PNP NC, NPN NC, 2.5 mm operating distance	PNP NC, NPN NC, 2.5 mm operating distance	PUR cable, pigtail	PNP NC, NPN NC

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HIGH PRESSURE

FAMILY

EXTRA DISTANCE

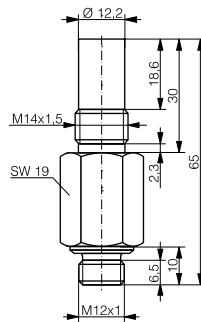
HOUSING SIZE

M14 (P20)

OPERATING DISTANCE MM

3

INDUCTIVE



* IO-Link available from Q4/18

DATA

*  IO-Link

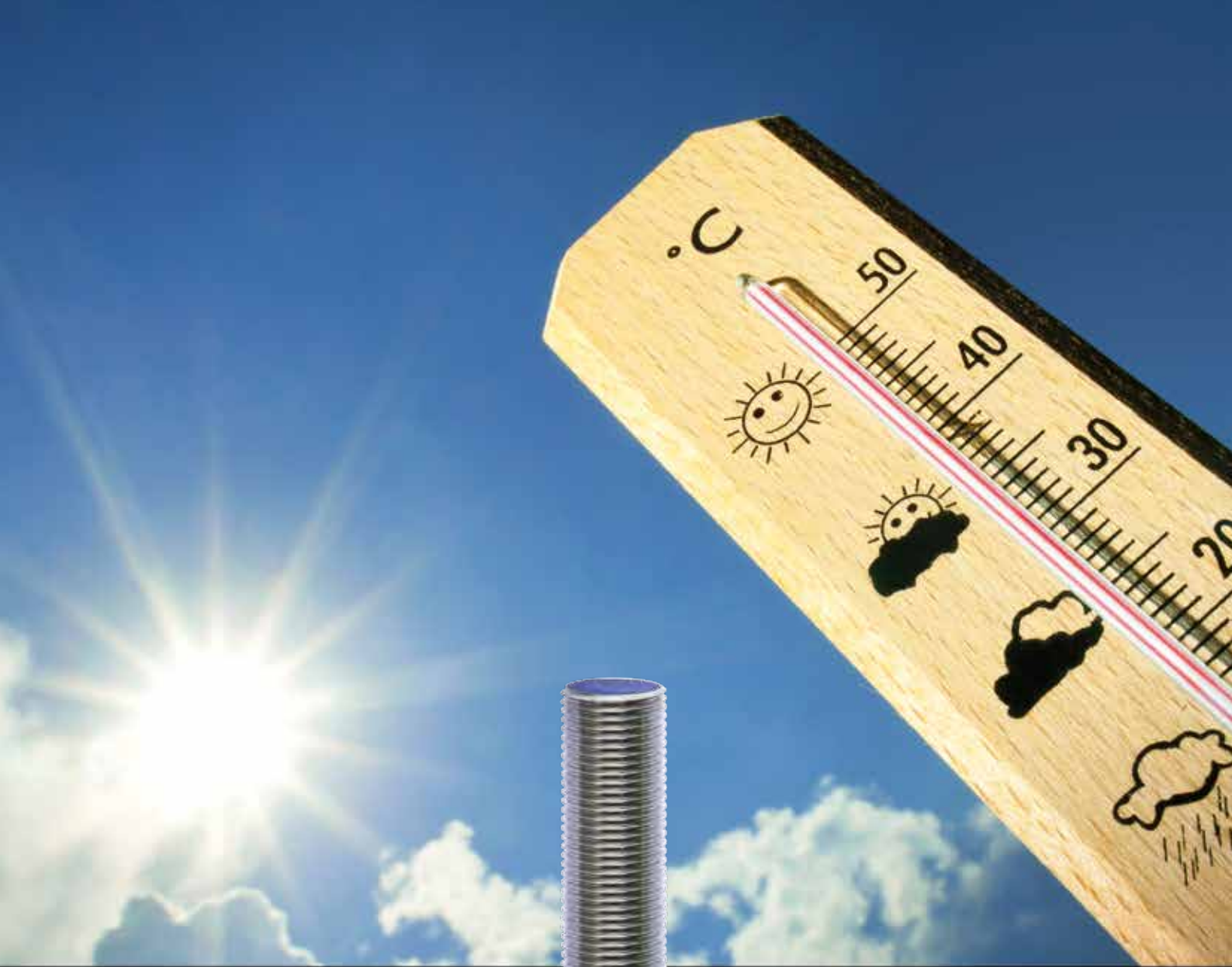
Sensing face material	Ceramic ZrO ₂
Operating pressure	500 bar
Peak pressure	1000 bar
Housing material	Stainless steel V4A / AISI 316L
Connection	Connector S12
Degree of protection	IP 68
Mounting	Embeddable
Max. switching frequency	500 Hz
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +100°C / -13 ... +212°F
Output current	≤ 200 mA
PNP NO	DW-AS-503-P20
NPN NO	DW-AS-501-P20
Other types available	PNP NC, NPN NC



CONTRINEX
DW-AD-703-C23
5m 7 mm
PNP NO 838718 A
IO-Link
CE

CONTRINEX
DW-AS-512-1


CONTRINEX
IS-040



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
- ✓ High quality ASIC sensors with  IO-Link interface

RANGE OVERVIEW	Housing size	Classics
EXTRA TEMPERATURE	M5	p. 143
	M8	p. 143
	M12	p. 143
	M18	p. 143

FAMILY

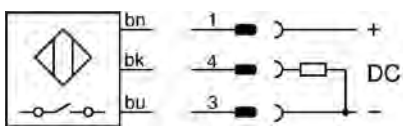
HOUSING SIZE

OPERATING DISTANCE MM

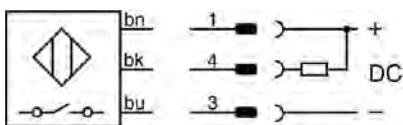
INDUCTIVE

WIRING DIAGRAMS

PNP NO



NPN NO



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

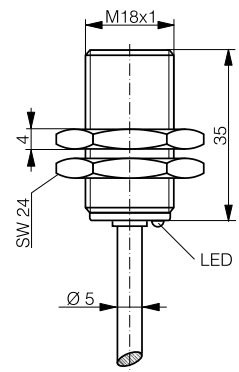
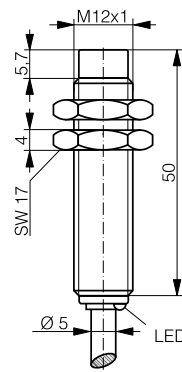
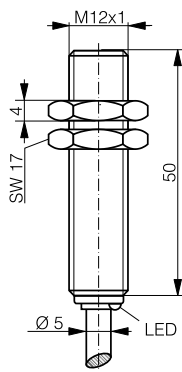
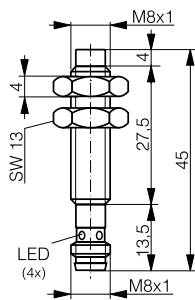
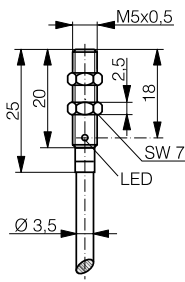
PNP NO

NPN NO

Other types available

EXTRA TEMPERATURE

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



Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

Glossary

Index

IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Silicone cable 2 m	Connector S8	PVC cable 6 m	PVC cable 5 m	PUR cable 2 m
IP 67	IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Embeddable	Non-embeddable	Embeddable
5000 Hz	3500 Hz	3000 Hz	2000 Hz	2000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25...+120°C / -13...+248°F	0...+85°C / +32 ...+185°F	-25...+100°C / -13...+212°F	-25...+100°C / -13...+212°F	-40...+100°C / -40...+212°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
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
DW-AD-601-M5-735				



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



HIGH TEMPERATURE INDUCTIVE SENSORS

KEY ADVANTAGES

- ✓ Highest long-term stability due to fully potted electronics
- ✓ 100 % silicone-free
- ✓ Long sensor life
- ✓ Reliable sensing in high temperature applications
- ✓ Compact construction with integral amplifier for temperatures up to +180°C (+356°F)
- ✓ External amplifier module for temperatures up to +230°C (+446°F)

RANGE OVERVIEW

Housing size

Classics

HIGH TEMPERATURE

M8	p. 147
M12	p. 147
M18	p. 147-148
M30	p. 148-149
M50	p. 149

ADDITIONAL RANGES

PART REFERENCE	HOUSING SIZE	OPERATING DISTANCE MM
DW-HD-623-M8-100	M8	2
DW-HD-621-M8-100	M8	2
DW-HD-603-M12-200	M12	3
DW-HD-601-M12-200	M12	3
DW-HD-603-M18-310	M18	5
DW-HD-601-M18-310	M18	5
DW-HD-603-M30-310	M30	10
DW-HD-601-M30-310	M30	10
DW-HD-603-M50-411	M50	20
DW-HD-601-M50-411	M50	20
DW-HD-613-M50-411	M50	25
DW-HD-611-M50-411	M50	25

FAMILY

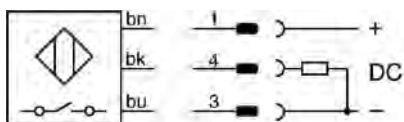
HOUSING SIZE

OPERATING DISTANCE MM

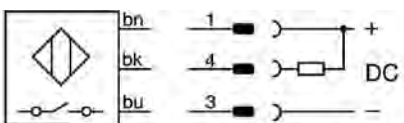
INDUCTIVE

WIRING DIAGRAMS

PNP NO



NPN NO



DATA

Amplifier

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

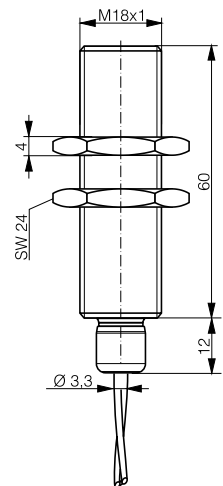
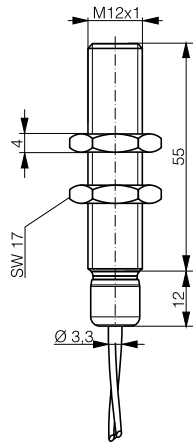
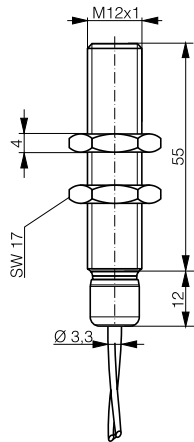
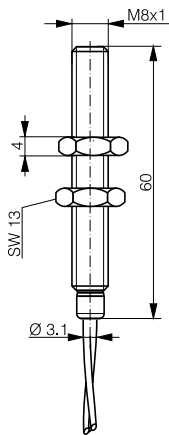
PNP NO

NPN NO

Other types available

HIGH TEMPERATURE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M12	M12	M18
2	3	4	5



100% SILICONE FREE	100% SILICONE FREE	100% SILICONE FREE	100% SILICONE FREE
Built-in	Built-in	Built-in	Built-in
Ferritic stainless steel	Ferritic stainless steel	Ferritic stainless steel	Ferritic stainless steel
FEP cable 2 m	FEP cable 2 m	FEP cable 2 m	FEP cable 2 m
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
1500 Hz	1200 Hz	1200 Hz	1000 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +140°C / -13 ... +284°F	-25 ... +180°C / -13 ... +356°F	-25 ... +180°C / -13 ... +356°F	-25 ... +180°C / -13 ... +356°F
120 mA (≤ 100°C) / 80 mA (> 100°C)	120 mA (≤ 100°C) / 70 mA (> 100°C)	120 mA (≤ 100°C) / 70 mA (> 100°C)	≤ 150 mA
DW-HD-623-M8-610	DW-HD-603-M12-810	DW-HD-623-M12-810	DW-HD-603-M18-810
DW-HD-621-M8-610	DW-HD-601-M12-810	DW-HD-621-M12-810	DW-HD-601-M18-810

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

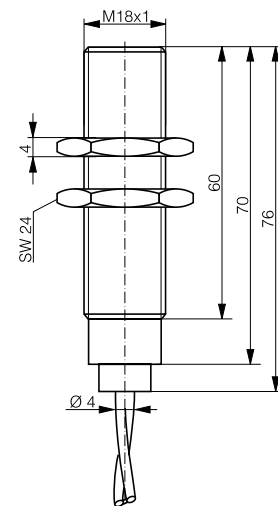
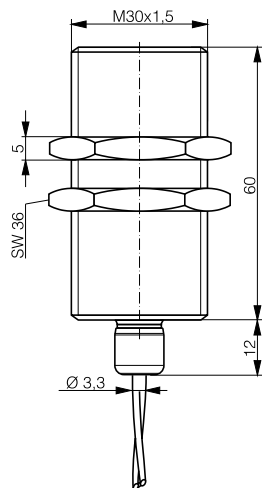
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HIGH TEMPERATURE

INDUCTIVE

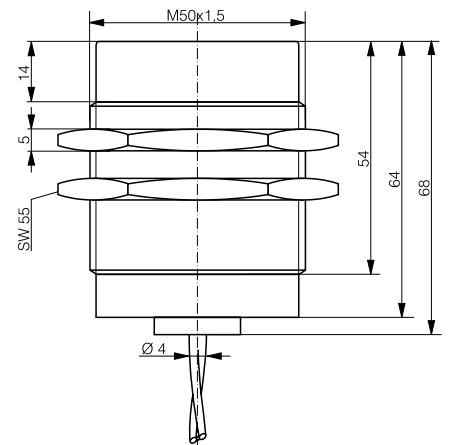
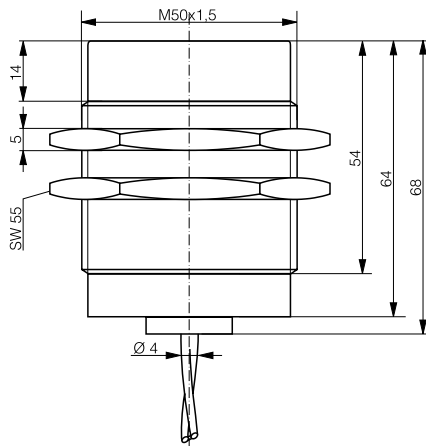
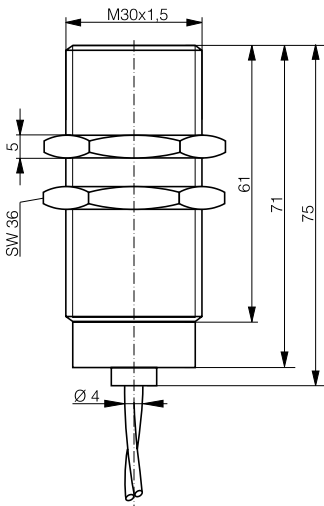
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE	M30	M18
OPERATING DISTANCE MM	10	5



DATA	100% SILICONE FREE	
Amplifier	Built-in	External
Housing material	Ferritic stainless steel	Stainless steel V2A
Connection	FEP cable 2 m	Teflon cable 3 m
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	500 Hz	300 Hz
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC (amplifier)
Ambient temperature range	-25 ... +180°C / -13 ... +356°F	0 ... +230°C / +32 ... +440°F
Output current	≤ 150 mA	≤ 200 mA (amplifier)
PNP NO	DW-HD-603-M30-810	DW-HD-603-M18-411
NPN NO	DW-HD-601-M30-810	DW-HD-601-M18-411
Other types available		

HIGH TEMPERATURE

CLASSICS	CLASSICS	CLASSICS
M30	M50	M50
10 (15)	25	25



External	External	External
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Teflon cable 3 m	Teflon cable 5 m	Teflon cable 20 m
IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-embeddable
200 Hz	150 Hz	150 Hz
10 ... 30 VDC (amplifier)	10 ... 30 VDC (amplifier)	10 ... 30 VDC (amplifier)
0 ... +230°C / +32 ... +440°F	-40 ... +230°C / -40 ... +440°F	0 ... +230°C / + 32 ... +440°F
≤ 200 mA (amplifier)	≤ 200 mA (amplifier)	≤ 200 mA (amplifier)
DW-HD-603-M30-411	DW-HD-613-M50-511	DW-HD-613-M50-503
DW-HD-601-M30-411		
Non-embeddable (Sn 15 mm)	For other cable lengths please ask	For other cable lengths please ask

Inductive

Photoelectric

Safety

RFID

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DURABLE AND RELIABLE IN WELDING CELLS



WELD- IMMUNE

INDUCTIVE SENSORS

KEY ADVANTAGES

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

RANGE OVERVIEW	Housing size	Full Inox
WELD- IMMUNE	M8	p. 153
	M12	p. 153
	M18	p. 153

FAMILY

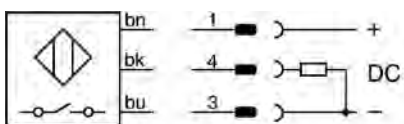
HOUSING SIZE

OPERATING DISTANCE MM

INDUCTIVE

WIRING DIAGRAM

PNP NO



DATA

Sensing face material

Welding systems MF

Welding systems 50 Hz

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

Output current

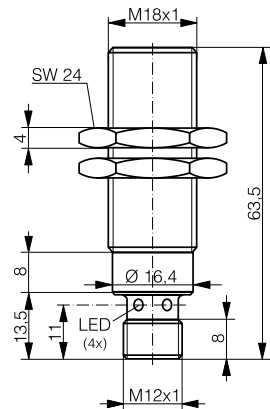
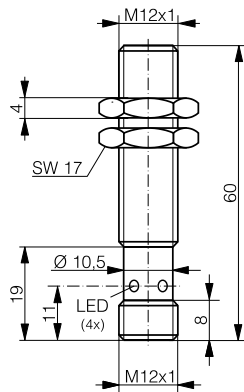
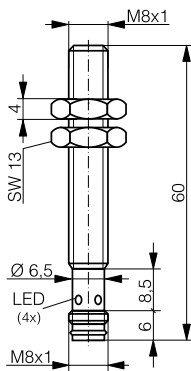
PNP NO

PNP NO

Other types available

WELD-IMMUNE

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



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

Inductive

Photoelectric

Safety

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FOR THE HARSHTEST MACHINING ENVIRONMENTS

CHIP- IMMUNE

INDUCTIVE SENSORS

KEY ADVANTAGES

- ✓ Detection not influenced by chips of steel, stainless steel, aluminum, brass, copper or titanium
- ✓ Detection of targets made of the above metals
- ✓ Robust, one-piece stainless-steel housing, protection rating IP 68 and IP 69K
- ✓ Temperature range -25 to +85°C (-13 to +185°F)
- ✓ Size M12, M18 and M30
- ✓ Operating distances up to 12 mm
- ✓  **IO-Link**

RANGE OVERVIEW

Housing size

Full Inox

CHIP- IMMUNE

M12

p. 157

M18

p. 157

M30

p. 157

FAMILY

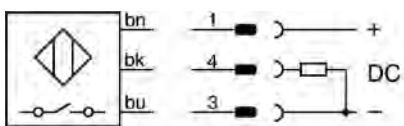
HOUSING SIZE

OPERATING DISTANCE MM

INDUCTIVE

WIRING DIAGRAM

PNP NO



DATA

Sensing face material

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

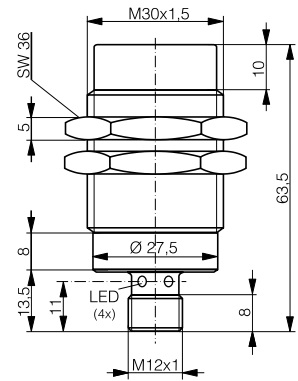
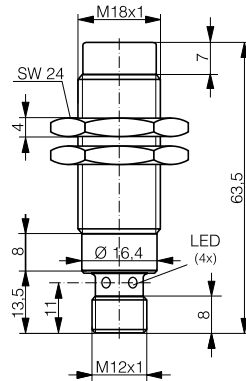
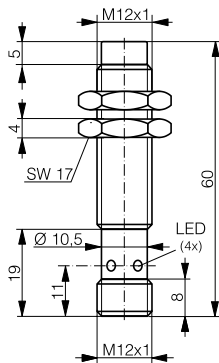
Output current

PNP NO

Other types available

CHIP-IMMUNE

FULL INOX	FULL INOX	FULL INOX
M12	M18	M30
3	5	12



IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	Connector S12	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Non-embeddable	Non-embeddable	Non-embeddable
≤ 400 Hz	≤ 200 Hz	≤ 90 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-AS-713-M12-967	DW-AS-713-M18-967	DW-AS-713-M30-967
NPN on request	NPN on request	NPN on request

Inductive

Photoelectric

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DOUBLE-SHEET

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
DOUBLE-SHEET	M30	p. 161

FAMILY

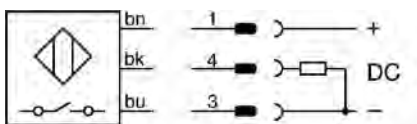
HOUSING SIZE MM

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

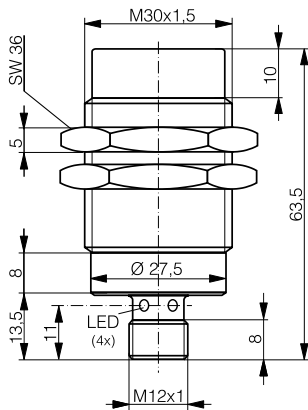
Output current

PNP NO

Description

DOUBLE-SHEET

FULL INOX		
M30		
3 ... 5		



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




FOR SHIPS, PORTS AND OFFSHORE



MARITIME

INDUCTIVE SENSORS

KEY ADVANTAGES

- ✓ GL approved, class DNV-GL-CG-0339
- ✓ Extremely rugged sensors, fit for Industry 4.0
- ✓ Special EMC protection
- ✓ Resistant to corrosion and salt water
- ✓ Impervious, enclosure rating IP 68 or IP 69K
- ✓ Temperature range -40 ... +85°C (-40 ... +185°F)
- ✓ Full Inox types: one-piece stainless-steel housing (V4A/AISI 316L), factor 1 on steel and aluminum
- ✓ Pressure-resistance available up to 500 bar (800 bar peak)
- ✓  IO-Link interface

RANGE OVERVIEW

Housing size

Full Inox

MARITIME

M12

p. 165

M18

p. 166

M30

p. 166-167

C23

p. 167

FAMILY

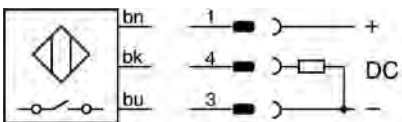
HOUSING SIZE

OPERATING DISTANCE MM

INDUCTIVE

WIRING DIAGRAMS

PNP NO



DATA

Housing material

Connection

Degree of protection

Mounting

Max. switching frequency

Supply voltage range

Ambient temperature range

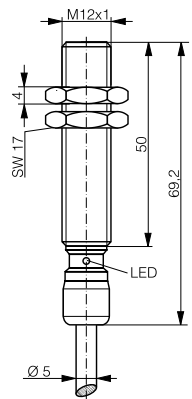
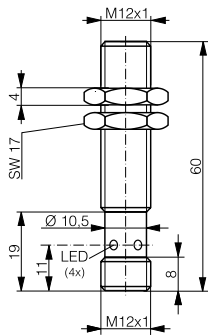
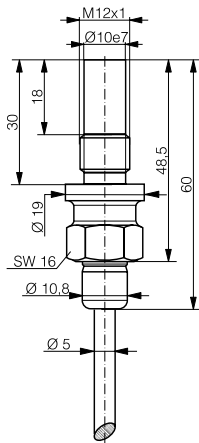
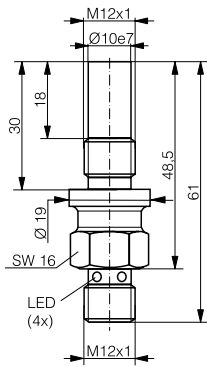
Output current

PNP NO

Other types available

MARITIME

CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12 (P12)	M12 (P12)	M12	M12
1.5	1.5	6	6



IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
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	Embeddable
850 Hz	850 Hz	600 Hz	600 Hz
10 ... 30 VDC	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	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-MS-703-P12G	DW-MD-703-P12G	DW-MS-703-M12	DW-MD-703-M12

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MARITIME

FAMILY

CLASSICS

CLASSICS

CLASSICS

HOUSING SIZE MM

M18

M18

M30

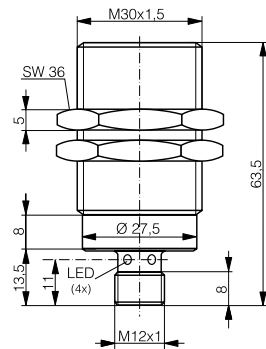
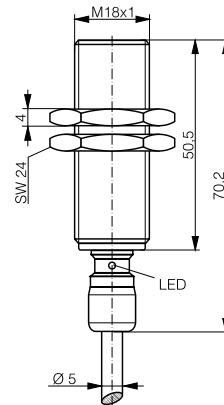
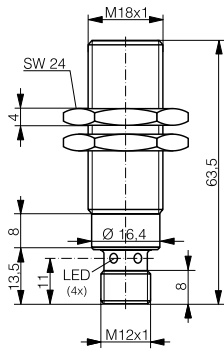
OPERATING DISTANCE MM

10

10

20

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

Housing material

Stainless steel V4A/AISI 316L

Stainless steel V4A/AISI 316L

Stainless steel V4A/AISI 316L

Connection

Connector S12

PUR 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

200 Hz

200 Hz

125 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-MS-703-M18-002

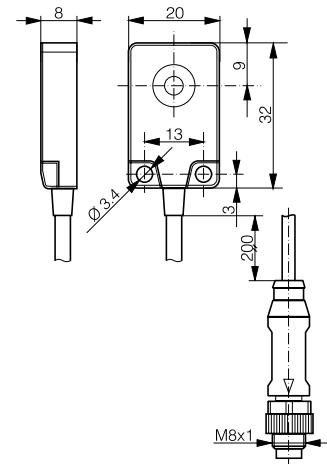
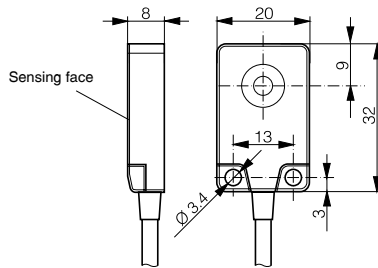
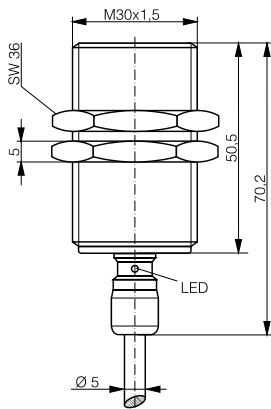
DW-MD-703-M18

DW-MS-703-M30-002

Other types available

MARITIME

CLASSICS	CLASSICS	CLASSICS
M30	C23	C23
20	7	7



IO-Link	IO-Link	IO-Link
Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
PUR cable	PVC cable	PVC cable + connector S8
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable
125 Hz	180 Hz	180 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-MD-703-M30	DW-MD-703-C23	DW-MV-703-C23-276

Inductive

Photoelectric

Safety

RFID

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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. 171	p. 171-172
	M18		p. 172-173
	M30		p. 173-174

FAMILY

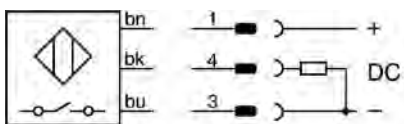
HOUSING SIZE

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
M12	M12	M12	M12
2	6	6	10

Inductive

Photoelectric

Safety

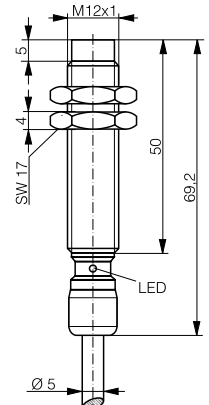
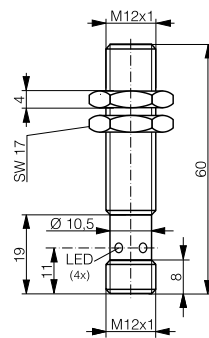
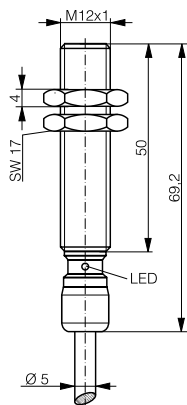
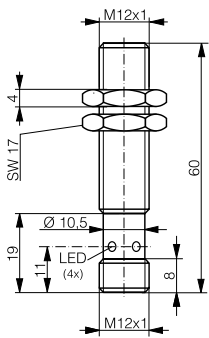
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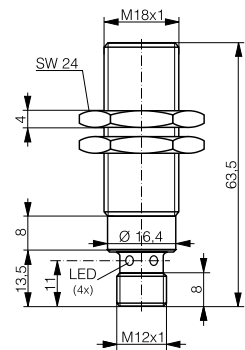
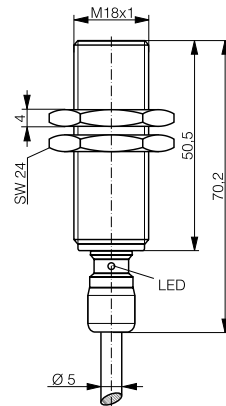
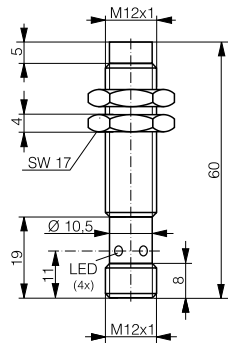


IO-Link	IO-Link	IO-Link	IO-Link
-	80 bar	80 bar	80 bar
PPS/Stainless steel V4A	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connector S12	TPE-S cable	Connector S12	TPE-S cable
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	Non-embeddable
1700 Hz	600 Hz	600 Hz	400 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-713-M12
	NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC

WASHDOWN

INDUCTIVE

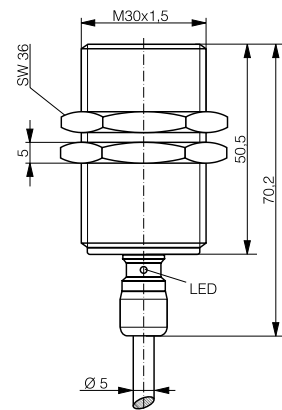
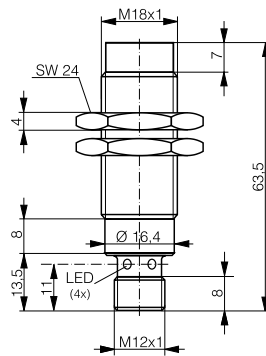
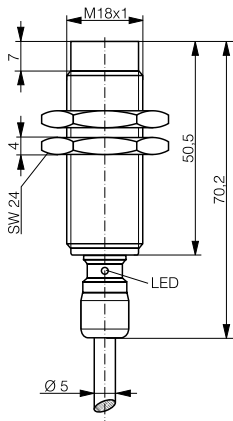
FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M12	M18	M18
OPERATING DISTANCE MM	10	10	10



DATA	IO-Link	IO-Link	IO-Link
Operating pressure	80 bar	60 bar	60 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	Non-embeddable	Embeddable	Embeddable
Max. switching frequency	400 Hz	300 Hz	300 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-713-M12	DW-LD-703-M18	DW-LS-703-M18-002
Other types available	NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC

WASHDOWN

FULL INOX	FULL INOX	FULL INOX
M18	M18	M30
20	20	20



IO-Link	IO-Link	IO-Link
60 bar	60 bar	40 bar
Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
TPE-S cable	Connector S12	TPE-S cable
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Non-embeddable	Non-embeddable	Embeddable
200 Hz	200 Hz	100 Hz
10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F	-25 ... +85°C / -13 ... +185°F
≤ 200 mA	≤ 200 mA	≤ 200 mA
DW-LD-713-M18	DW-LS-713-M18-002	DW-LD-703-M30
NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC	NPN NO, PNP NC, NPN NC

Inductive

Photoelectric

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WASHDOWN

FAMILY

FULL INOX

FULL INOX

FULL INOX

HOUSING SIZE

M30

M30

M30

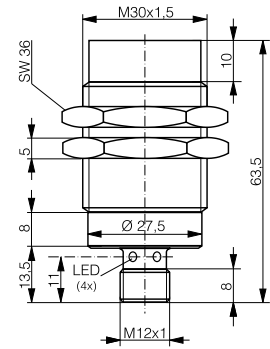
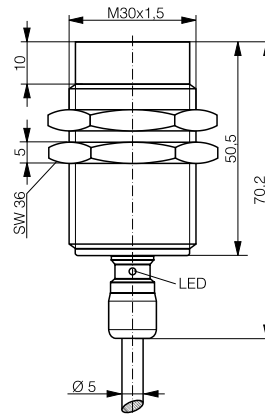
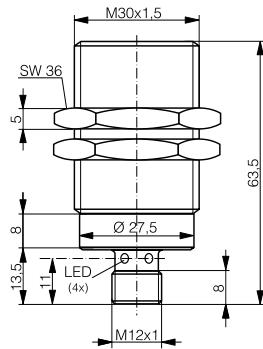
OPERATING DISTANCE MM

20

40

40

INDUCTIVE



DATA

IO-Link

IO-Link

IO-Link

Operating pressure

40 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

Non-embeddable

Non-embeddable

Max. switching frequency

100 Hz

90 Hz

90 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-M30-002

DW-LD-713-M30

DW-LS-713-M30-002

Other types available

NPN NO, PNP NC, NPN NC

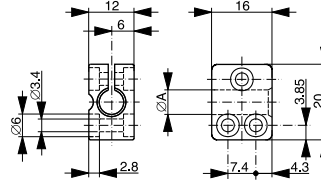
NPN NO, PNP NC, NPN NC

NPN NO, PNP NC, NPN NC

ACCESSORIES

SENSOR MOUNTING CLAMPS

∅3, ∅4, ∅5, ∅6.5, ∅8



TECHNICAL DATA

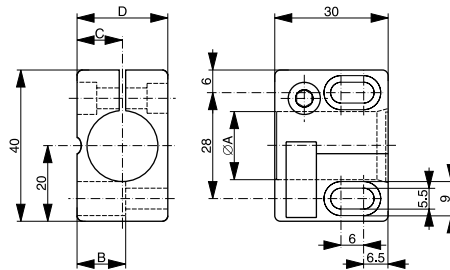
Part reference	Type	A			
ASU-0001-030	without limit stop	∅ 3 mm			
ASU-0001-040	without limit stop	∅ 4 mm			
ASU-0001-050	without limit stop	∅ 5 mm			
ASU-0001-065	without limit stop	∅ 6.5 mm			
ASU-0001-080	without limit stop	∅ 8 mm			
ASU-0002-080	with limit stop	∅ 8 mm			

Material: PA 6 black

Screw: DIN 912, M3 zinc-plated

Nut: DIN 934, M3 zinc-plated

∅12, ∅18



TECHNICAL DATA

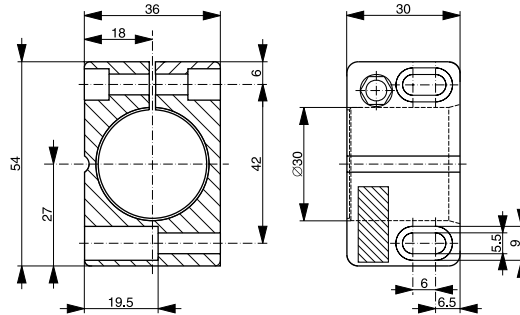
Part reference	Type	A	B	C	D
ASU-0001-120	without limit stop	∅ 12 mm	9.75 mm	9 mm	18 mm
ASU-0002-120	with limit stop	∅ 12 mm	9.75 mm	9 mm	18 mm
ASU-0001-180	without limit stop	∅ 18 mm	12.85 mm	12 mm	24 mm
ASU-0002-180	with limit stop	∅ 18 mm	12.85 mm	12 mm	24 mm

Material: PA 6 GK (∅ 18 mm), PA 6 (∅ 12 mm) black

Screw: DIN 912, M5 zinc-plated

Nut: DIN 934, M5 zinc-plated

Ø30



TECHNICAL DATA

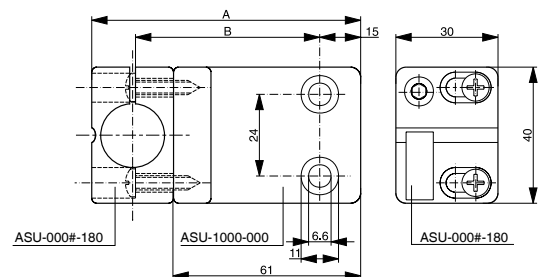
Part reference	Type				
ASU-0001-300	without limit stop	Ø 30 mm			
ASU-0002-300	with limit stop	Ø 30 mm			

Material: PA 6 GK black

Screw: DIN 912, M5 x 25 zinc-plated

Nut: DIN 934, M5 zinc-plated

BASES FOR MOUNTING CLAMPS Ø12, Ø18



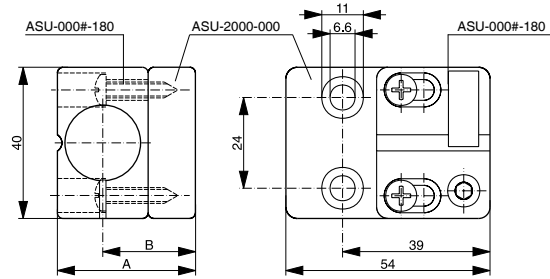
TECHNICAL DATA

Part reference	Type	A with Ø 12 mm / Ø 18 mm	B with Ø 12 mm / Ø 18 mm
ASU-1000-000	horizontal	79 mm / 85 mm	55 mm / 58 mm

Material: PA 6 black

Screws: DIN 7981, Ø 4.2 zinc-plated

ACCESSORIES



TECHNICAL DATA

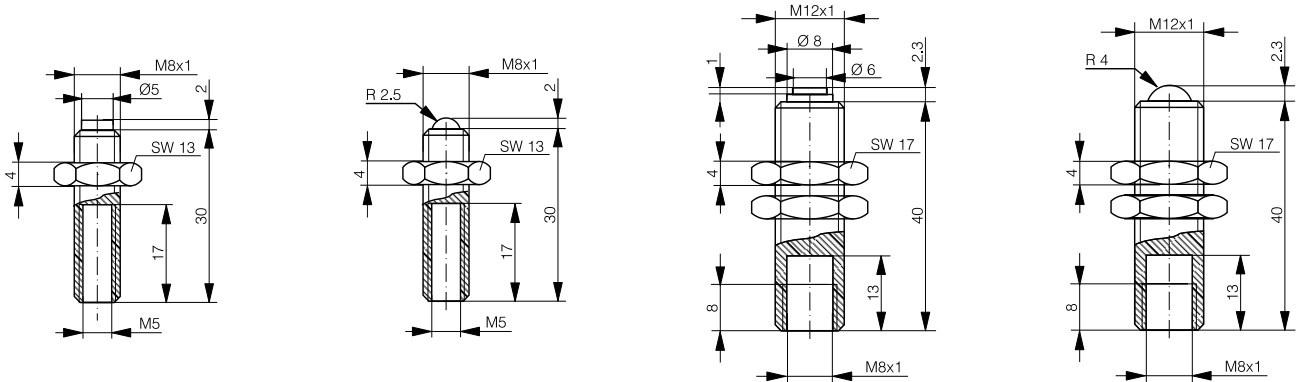
Part reference	Type	A with \varnothing 12 mm / \varnothing 18 mm	B with \varnothing 12 mm / \varnothing 18 mm
ASU-2000-000	vertical	30.5 mm / 36.5 mm	21.5 mm / 24.5 mm

Material: PA 6 black

Screws: DIN 7981, \varnothing 4.2 zinc-plated

MECHANICAL STOPS

FOR M5 AND M8 INDUCTIVE SENSORS

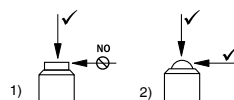


TECHNICAL DATA

Part reference	Inner diameter	Outer diameter	Plunger type	Max. force on housing	Max. force on plunger
AMS-0001-M08	M5 x 0.5	M8 x 1	Flat ¹⁾	8000 N	2000 N
AMS-0002-M08	M5 x 0.5	M8 x 1	Spherical ²⁾	8000 N	2000 N
AMS-0001-M12	M8 x 1	M12 x 1	Flat ¹⁾	15,000 N	2000 N
AMS-0002-M12	M8 x 1	M12 x 1	Spherical ²⁾	15,000 N	2000 N

Material: Steel XC 48, black

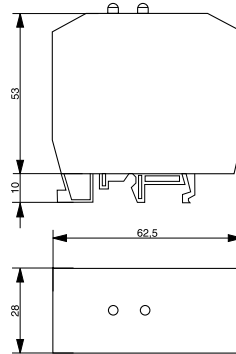
Max. tightening torque: 30 Nm (M08), 50 Nm (M12)



AMPLIFIERS

These devices are built into user-friendly clamping frames that can be snapped onto various standard rails, thanks to their universal foot.

Dimensions (all types):



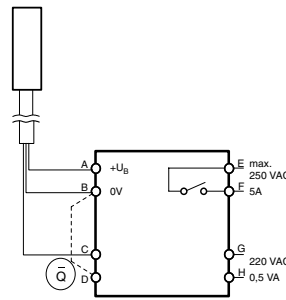
AMPLIFIERS FOR 3-WIRE SENSORS

DW-AZ-100-A3

These devices are suitable for NPN and PNP N.O. sensors. Operating the switch activates the relay, and the contact closes. A wire bridge between B and D inverts this function.

TECHNICAL DATA	
Supply voltage	220 VAC
Power drain	0.5 VA
Output voltage	18.5 VDC
Output current	20 mA max.

Wiring diagram:



AMPLIFIERS FOR NAMUR SENSORS

DW-AZ-100-AN

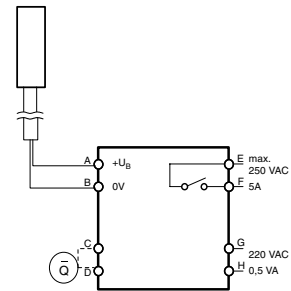
These devices are suitable for NAMUR sensors. Operating the switch activates the relay, and the contact closes. A wire bridge between C and D inverts this function.

Output current and impedance correspond to NAMUR standard (DIN 19234).

TECHNICAL DATA

Supply voltage	220 VAC
Power drain	0.5 VA

Wiring diagram:



SENSOR TESTER

ATE-0000-010

For fast field checks of various sensor types (inductive, capacitive, photoelectric and ultrasonic) 10 ... 30 V.

- Suitable for PNP and NPN devices, NO, NC or push-pull versions
- LED and acoustic indicators
- Built-in steel target (non-standardized) for checking inductive sensors
- Automatic switch off after approx. 120 sec. of non-use
- Up to 100 mA sensor current
- Rechargeable LiPo battery 9V 600mAh (included)
- Battery life longer than 2 hours at 50 mA current supply
- Micro-USB interface to recharge battery with universal mobile phone charger



DW-AZ-100-DN

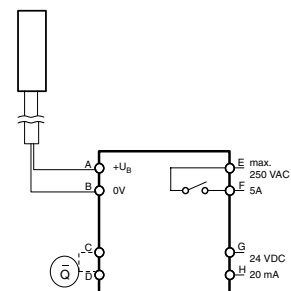
These devices are suitable for NAMUR sensors. Operating the switch activates the relay, and the contact closes. A wire bridge between C and D inverts this function.

Output current and impedance correspond to NAMUR standard (DIN 19234).

TECHNICAL DATA

Supply voltage	24 VDC
No-load supply current	20 mA max.

Wiring diagram:



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
Maritime	M

CONNECTION

Cable	D
Connector	S
Cable + connector	V

SERIES

500 / 520 (Extra Distance)	5
600 / 620 (Classics)	6
700 (Full Inox)	7

Embeddable / quasi-embeddable	0
Non-embeddable	1
Increased operating distance, (quasi-)embeddable	2
Increased operating distance, non-embeddable	3

OUTPUT

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

SHORT / SPECIAL EXECUTIONS

Series E (impervious)	E
Series 700P (all-metal & 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	1/99	DW-AD-605-04	1/104
DW-AD-501-065	1/35	DW-AD-519-M30-320	1/99	DW-AD-605-04K	1/104
DW-AD-501-065E	1/131	DW-AD-521-M8	1/43	DW-AD-605-065-120	1/106
DW-AD-501-C8	1/46	DW-AD-521-M12	1/52	DW-AD-605-C5	1/105
DW-AD-501-M5	1/77	DW-AD-521-M12-120	1/52	DW-AD-605-M4	1/103
DW-AD-501-M8	1/42	DW-AD-523-M8	1/43	DW-AD-605-M5	1/105
DW-AD-501-M12	1/50	DW-AD-523-M12	1/52	DW-AD-605-M8-120	1/107
DW-AD-501-M12-120	1/50	DW-AD-523-M12-120	1/52	DW-AD-605-M12	1/107
DW-AD-501-M18	1/58	DW-AD-601-03	1/71	DW-AD-605-M12-120	1/107
DW-AD-501-M18-120	1/57	DW-AD-601-04	1/73	DW-AD-605-M18	1/108
DW-AD-501-M30	1/62	DW-AD-601-04E	1/131	DW-AD-605-M18-120	1/108
DW-AD-501-M30-120	1/62	DW-AD-601-065	1/31	DW-AD-605-M30	1/109
DW-AD-501-P5	1/135	DW-AD-601-065-120	1/31	DW-AD-605-M30-120	1/109
DW-AD-501-P8	1/135	DW-AD-601-065-121	1/31	DW-AD-607-M12	1/114
DW-AD-501-P20	1/137	DW-AD-601-065-400	1/31	DW-AD-607-M18	1/119
DW-AD-503-04	1/75	DW-AD-601-C5	1/78	DW-AD-607-M30	1/125
DW-AD-503-065	1/35	DW-AD-601-C8	1/45	DW-AD-608-M12	1/114
DW-AD-503-065E	1/131	DW-AD-601-M4	1/72	DW-AD-608-M18	1/119
DW-AD-503-C8	1/46	DW-AD-601-M5	1/76	DW-AD-608-M30	1/125
DW-AD-503-M5	1/77	DW-AD-601-M5-735	1/143	DW-AD-611-M8	1/41
DW-AD-503-M8	1/42	DW-AD-601-M5E	1/131	DW-AD-611-M12	1/48
DW-AD-503-M12	1/50	DW-AD-601-M8	1/36	DW-AD-611-M12-120	1/48
DW-AD-503-M12-120	1/50	DW-AD-601-M8-120	1/35	DW-AD-611-M18	1/55
DW-AD-503-M18	1/58	DW-AD-601-M8-121	1/36	DW-AD-611-M30	1/61
DW-AD-503-M18-120	1/57	DW-AD-601-M8-122	1/36	DW-AD-613-M8	1/41
DW-AD-503-M30	1/62	DW-AD-601-M12	1/47	DW-AD-613-M12	1/48
DW-AD-503-M30-120	1/62	DW-AD-601-M12-120	1/47	DW-AD-613-M12-120	1/48
DW-AD-503-P5	1/135	DW-AD-601-M18	1/54	DW-AD-613-M12-733	1/143
DW-AD-503-P8	1/135	DW-AD-601-M18-120	1/54	DW-AD-613-M18	1/55
DW-AD-503-P20	1/137	DW-AD-601-M30	1/60	DW-AD-613-M30	1/61
DW-AD-504-M5	1/77	DW-AD-603-03	1/71	DW-AD-614-M18	1/55
DW-AD-504-M30	1/62	DW-AD-603-04	1/73	DW-AD-617-M12	1/116
DW-AD-509-C8-390	1/95	DW-AD-603-04E	1/131	DW-AD-617-M18	1/121
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